

PACIFICORP DEMAND-SIDE RESOURCE POTENTIAL ASSESSMENT FOR 2017-2036

*VOLUME 4:
CLASS 2 DSM ANALYSIS
APPENDIX H*

Prepared for:
PacifiCorp

February 14, 2017

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CLASS 2 MEASURE DATA AND ASSUMPTIONS

Appendix H is a comprehensive list of the measures considered for the Class 2 potential analysis. For each measure, the following information is provided:

- **Segment:** Relevant market segment, building type, or facility type. Relevant options are listed in Appendix A.
- **End Use:** Category of end-use equipment to which measure savings apply. Relevant options are listed in Appendix A.
- **Measure Name:** Technical description of the measure, including measure efficiency.
- **Unit Description:** Units for savings and incremental costs.
- **Construction Vintage:** New or existing construction.
- **Average Savings per Unit (Annual kWh @meter):** First-year kWh savings at the customer meter.
- **Measure Life:** Expected life of measure in years.
- **Average Incremental Cost Per Unit:** Includes incremental equipment, labor, and present value O&M costs.
- **Base Year Saturation:** Percentage of units (homes, building, equipment, etc.) that have already installed or received the measure.
- **Applicability:** Percentage of units (homes, buildings, equipment, etc.) that can receive the measure. Accounts for technical limitations of installing the measure. The available market is Applicability minus Base Year Saturation.
- **Levelized Cost:** Cost (\$) per kWh saved at the generator or system level. This value is given in terms of the total resource cost (TRC) for all states except for Utah, where it is given in terms of the utility cost (UCT) per regulatory preferences.
- **Cumulative Achievable Technical Potential in 2036:** Represents cumulative annual energy savings in 2036 at the generator or system level. This value accounts for the impact of standards, in years after standards go into effect and is consistent with totals presented in Volume 2.
- **20-Year Incremental Achievable Technical Potential:** Represents the sum of 20-year incremental savings at the generator or system level. This value is consistent with what PacifiCorp used for IRP modeling.

RESIDENTIAL MEASURES

California Residential Measures Assumptions

Table H-1 Comparison of 7th Plan and RTF Residential Measures in California

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Single Family	Cooling	Central AC	12 kBtu/hr	Existing	42.42	15	\$129.29	9%	at stock turnover	\$0.33	99.98	99.98	AEG-BEST
Single Family	Cooling	Room AC	10.5 kBtu/hr	Existing	27.02	12	\$212.54	17%	at stock turnover	\$0.96	82.84	82.84	AEG-BEST
Single Family	Cooling	Evaporative AC	1 sqft	Existing	0.10	15	\$0.11	7%	at stock turnover	\$0.11	162.99	162.99	New Buildings Institute Study, 2006
Single Family	Cooling	Air-Source Heat Pump	36 kBtu/hr	Existing	111.94	15	\$218.37	15%	at stock turnover	\$0.08	334.06	334.06	AEG-BEST
Single Family	Heating	Air-Source Heat Pump	36 kBtu/hr	Existing	172.89	15	\$218.37	15%	at stock turnover	\$0.08	516.05	516.05	AEG-BEST
Single Family	Cooling	Geothermal Heat Pump	36 kBtu/hr	Existing	637.98	20	\$2,531.24	0%	at stock turnover	\$0.18	0.14	0.14	AEG-BEST
Single Family	Heating	Geothermal Heat Pump	36 kBtu/hr	Existing	660.11	20	\$2,531.24	0%	at stock turnover	\$0.18	0.14	0.14	AEG-BEST
Single Family	Heating	Electric Furnace	36 kBtu/hr	Existing	0.00	18	\$0.00	6%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Single Family	Heating	Electric Room Heat	3.5 kBtu/hr	Existing	0.00	18	\$0.00	12%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Single Family	Water Heating	Water Heater (<= 55 Gal)	50 gallons	Existing	1,099.88	13	\$743.91	36%	50%	\$0.08	5,283.26	5,283.26	7th Power Plan
Single Family	Water Heating	Water Heater (<= 55 Gal)	50 gallons	Existing	1,208.76	13	\$1,215.07	22%	30%	\$0.12	3,797.91	3,797.91	7th Power Plan
Single Family	Water Heating	Water Heater (<= 55 Gal)	50 gallons	Existing	1,747.95	13	\$1,573.80	14%	20%	\$0.10	3,664.96	3,664.96	Annual Energy Outlook, 2015
Single Family	Water Heating	Water Heater (> 55 Gal)	50 gallons	Existing	962.61	13	\$0.00	5%	50%	\$0.00	0.00	0.00	7th Power Plan
Single Family	Water Heating	Water Heater (> 55 Gal)	50 gallons	Existing	197.35	13	\$471.15	3%	30%	\$0.35	87.54	87.54	7th Power Plan
Single Family	Water Heating	Water Heater (> 55 Gal)	50 gallons	Existing	622.79	13	\$829.89	2%	20%	\$0.17	216.30	216.30	Annual Energy Outlook, 2015
Single Family	Interior Lighting	General Service Screw-In	1 lamps	Existing	6.16	12	\$6.13	100%	at stock turnover	\$0.09	3,399.52	3,462.85	EIA 2011-2012 Ref. Case

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Single Family	Interior Lighting	Linear Lighting	1 lamps	Existing	7.73	17	\$55.10	100%	at stock turnover	\$0.72	485.71	485.71	7th Power Plan
Single Family	Interior Lighting	Exempted Screw-In	1 lamps	Existing	21.77	10	\$12.32	100%	at stock turnover	-\$0.01	4,770.83	4,598.50	EIA 2011-2012 Ref. Case
Single Family	Exterior Lighting	Screw-in	1 lamps	Existing	22.52	10	\$6.13	100%	at stock turnover	\$0.03	1,917.01	1,924.43	EIA 2011-2012 Ref. Case
Single Family	Appliances	Refrigerator	1 units	Existing	106.55	15	\$240.28	100%	at stock turnover	\$0.24	1,171.20	1,171.20	7th Power Plan
Single Family	Appliances	Second Refrigerator	1 units	Existing	149.35	15	\$240.28	26%	at stock turnover	\$0.17	475.76	475.76	7th Power Plan
Single Family	Appliances	Freezer	1 units	Existing	123.10	22	\$83.03	45%	at stock turnover	\$0.06	427.68	427.68	RTF Workbook
Single Family	Appliances	Clothes Washer	1 units	Existing	9.19	14	\$194.20	96%	at stock turnover	\$2.35	154.09	154.09	7th Power Plan
Single Family	Appliances	Clothes Dryer	1 units	Existing	154.75	16	\$308.00	91%	at stock turnover	\$0.21	1,189.34	1,189.34	7th Power Plan
Single Family	Appliances	Dishwasher	1 units	Existing	2.12	15	\$6.36	74%	at stock turnover	\$0.32	15.65	15.65	7th Power Plan
Single Family	Appliances	Stove/Oven	1 units	Existing	168.48	20	\$307.09	82%	at stock turnover	\$0.17	1,860.03	1,860.03	7th Power Plan
Single Family	Appliances	Microwave	1 units	Existing	8.11	11	\$4.63	93%	at stock turnover	\$0.07	151.93	151.93	7th Power Plan
Single Family	Electronics	Personal Computers	1 units	Existing	57.28	5	\$14.17	80%	at stock turnover	\$0.05	250.36	250.36	7th Power Plan
Single Family	Electronics	Monitor	1 units	Existing	56.08	8	\$8.21	96%	at stock turnover	\$0.02	141.45	141.45	7th Power Plan
Single Family	Electronics	Laptops	1 units	Existing	13.86	4	\$57.18	120%	at stock turnover	\$1.08	111.58	111.58	7th Power Plan
Single Family	Electronics	Printer/Fax/Copier	1 units	Existing	19.33	5	\$0.01	117%	at stock turnover	\$0.00	24.90	24.90	ENERGY STAR
Single Family	Electronics	TVs	1 units	Existing	22.93	6	\$0.01	236%	at stock turnover	\$0.00	154.37	154.37	ENERGY STAR
Single Family	Electronics	Set-top Boxes/DVRs	1 units	Existing	64.70	5	\$0.00	266%	at stock turnover	\$0.00	0.00	0.00	Voluntary Agreement
Single Family	Electronics	Devices and Gadgets	1 units	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Single Family	Miscellaneous	Electric Vehicles	1 units	Existing	116.75	10	\$770.00	0%	at stock turnover	\$0.88	10.49	10.49	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Single Family	Miscellaneous	Pool Heater	1 units	Existing	3,864.38	15	\$3,546.07	0%	at stock turnover	\$0.10	72.35	72.35	AEG Research
Single Family	Miscellaneous	Pool Pump	1 units	Existing	702.98	15	\$872.94	4%	at stock turnover	\$0.13	379.58	379.58	Southern California Edison
Single Family	Miscellaneous	Hot Tub/Spa	1 units	Existing	169.51	15	\$350.00	9%	at stock turnover	\$0.22	226.49	226.49	AEG Research
Single Family	Miscellaneous	Furnace Fan	1 units	Existing	70.90	20	\$97.00	14%	at stock turnover	\$0.13	-6.39	4.44	DOE Rule: EERE-2010-BT-STD-0011
Single Family	Miscellaneous	Well Pump	1 units	Existing	0.00	5	\$0.00	34%	at stock turnover	\$0.00	0.00	0.00	N/A
Single Family	Miscellaneous	Miscellaneous	1 units	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Single Family	Cooling	Central AC	12 kBtu/hr	New	46.58	15	\$129.29	12%	at stock turnover	\$0.30	22.80	22.80	AEG-BEST
Single Family	Cooling	Room AC	10.5 kBtu/hr	New	12.68	12	\$212.54	4%	at stock turnover	\$2.04	1.30	1.30	AEG-BEST
Single Family	Cooling	Evaporative AC	1 sqft	New	0.00	15	\$0.11	0%	at stock turnover	\$0.00	0.00	0.00	New Buildings Institute Study, 2006
Single Family	Cooling	Air-Source Heat Pump	36 kBtu/hr	New	170.88	15	\$218.37	17%	at stock turnover	\$0.06	51.67	51.67	AEG-BEST
Single Family	Heating	Air-Source Heat Pump	36 kBtu/hr	New	213.39	15	\$218.37	17%	at stock turnover	\$0.06	64.49	64.49	AEG-BEST
Single Family	Cooling	Geothermal Heat Pump	36 kBtu/hr	New	637.98	20	\$2,531.24	0%	at stock turnover	\$0.18	0.01	0.01	AEG-BEST
Single Family	Heating	Geothermal Heat Pump	36 kBtu/hr	New	643.24	20	\$2,531.24	0%	at stock turnover	\$0.18	0.01	0.01	AEG-BEST
Single Family	Heating	Electric Furnace	36 kBtu/hr	New	0.00	18	\$0.00	8%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Single Family	Heating	Electric Room Heat	3.5 kBtu/hr	New	0.00	18	\$0.00	3%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Single Family	Water Heating	Water Heater (<= 55 Gal)	50 gallons	New	1,100.16	13	\$743.91	22%	50%	\$0.08	226.55	226.55	7th Power Plan
Single Family	Water Heating	Water Heater (<= 55 Gal)	50 gallons	New	1,202.35	13	\$1,215.07	13%	30%	\$0.12	163.04	163.04	7th Power Plan
Single Family	Water Heating	Water Heater (<= 55 Gal)	50 gallons	New	1,741.70	13	\$1,573.80	9%	20%	\$0.11	157.60	157.60	Annual Energy Outlook, 2015
Single Family	Water Heating	Water Heater (> 55 Gal)	50 gallons	New	962.61	13	\$0.00	4%	50%	\$0.00	0.00	0.00	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Single Family	Water Heating	Water Heater (> 55 Gal)	50 gallons	New	197.09	13	\$471.15	3%	30%	\$0.35	5.47	5.47	7th Power Plan
Single Family	Water Heating	Water Heater (> 55 Gal)	50 gallons	New	622.53	13	\$829.89	2%	20%	\$0.17	13.50	13.50	Annual Energy Outlook, 2015
Single Family	Interior Lighting	General Service Screw-In	1 lamps	New	6.31	12	\$6.13	100%	at stock turnover	\$0.09	258.35	255.08	EIA 2011-2012 Ref. Case
Single Family	Interior Lighting	Linear Lighting	1 lamps	New	8.57	17	\$58.00	100%	at stock turnover	\$0.68	43.78	43.78	7th Power Plan
Single Family	Interior Lighting	Exempted Screw-In	1 lamps	New	21.77	10	\$12.32	100%	at stock turnover	-\$0.01	356.95	351.03	EIA 2011-2012 Ref. Case
Single Family	Exterior Lighting	Screw-in	1 lamps	New	23.03	10	\$6.13	100%	at stock turnover	\$0.03	145.14	143.08	EIA 2011-2012 Ref. Case
Single Family	Appliances	Refrigerator	1 units	New	106.55	15	\$240.28	100%	at stock turnover	\$0.24	99.12	99.12	7th Power Plan
Single Family	Appliances	Second Refrigerator	1 units	New	149.35	15	\$240.28	20%	at stock turnover	\$0.17	30.54	30.54	7th Power Plan
Single Family	Appliances	Freezer	1 units	New	123.10	22	\$83.03	35%	at stock turnover	\$0.06	27.30	27.30	RTF Workbook
Single Family	Appliances	Clothes Washer	1 units	New	9.19	14	\$194.20	97%	at stock turnover	\$2.35	11.54	11.54	7th Power Plan
Single Family	Appliances	Clothes Dryer	1 units	New	154.75	16	\$308.00	90%	at stock turnover	\$0.21	92.70	92.70	7th Power Plan
Single Family	Appliances	Dishwasher	1 units	New	2.12	15	\$6.36	89%	at stock turnover	\$0.32	1.27	1.27	7th Power Plan
Single Family	Appliances	Stove/Oven	1 units	New	168.48	20	\$307.09	69%	at stock turnover	\$0.17	128.52	128.52	7th Power Plan
Single Family	Appliances	Microwave	1 units	New	8.11	11	\$4.63	93%	at stock turnover	\$0.07	10.77	10.77	7th Power Plan
Single Family	Electronics	Personal Computers	1 units	New	57.28	5	\$14.17	65%	at stock turnover	\$0.05	11.87	11.87	7th Power Plan
Single Family	Electronics	Monitor	1 units	New	56.08	8	\$8.21	78%	at stock turnover	\$0.02	7.49	7.49	7th Power Plan
Single Family	Electronics	Laptops	1 units	New	13.86	4	\$57.18	199%	at stock turnover	\$1.08	8.69	8.69	7th Power Plan
Single Family	Electronics	Printer/Fax/Copier	1 units	New	19.33	5	\$0.01	173%	at stock turnover	\$0.00	2.29	2.29	ENERGY STAR
Single Family	Electronics	TVs	1 units	New	22.93	6	\$0.01	295%	at stock turnover	\$0.00	12.65	12.65	ENERGY STAR

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Single Family	Electronics	Set-top Boxes/DVRs	1 units	New	64.70	5	\$0.00	333%	at stock turnover	\$0.00	0.00	0.00	Voluntary Agreement
Single Family	Electronics	Devices and Gadgets	1 units	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Single Family	Miscellaneous	Electric Vehicles	1 units	New	116.75	10	\$770.00	0%	at stock turnover	\$0.88	0.86	0.86	7th Power Plan
Single Family	Miscellaneous	Pool Heater	1 units	New	3,864.38	15	\$3,546.07	0%	at stock turnover	\$0.10	5.71	5.71	AEG Research
Single Family	Miscellaneous	Pool Pump	1 units	New	702.98	15	\$872.94	4%	at stock turnover	\$0.13	29.98	29.98	Southern California Edison
Single Family	Miscellaneous	Hot Tub/Spa	1 units	New	169.51	15	\$350.00	9%	at stock turnover	\$0.22	18.18	18.18	AEG Research
Single Family	Miscellaneous	Furnace Fan	1 units	New	70.90	20	\$97.00	14%	at stock turnover	\$0.13	-0.56	0.39	DOE Rule: EERE-2010-BT-STD-0011
Single Family	Miscellaneous	Well Pump	1 units	New	0.00	5	\$0.00	54%	at stock turnover	\$0.00	0.00	0.00	N/A
Single Family	Miscellaneous	Miscellaneous	1 units	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Multifamily	Cooling	Central AC	12 kBtu/hr	Existing	36.14	15	\$129.29	9%	at stock turnover	\$0.38	8.30	8.30	AEG-BEST
Multifamily	Cooling	Room AC	10.5 kBtu/hr	Existing	50.86	12	\$212.54	17%	at stock turnover	\$0.51	23.12	23.12	AEG-BEST
Multifamily	Cooling	Evaporative AC	1 sqft	Existing	0.00	15	\$0.11	7%	at stock turnover	\$0.00	0.00	0.00	New Buildings Institute Study, 2006
Multifamily	Cooling	Air-Source Heat Pump	36 kBtu/hr	Existing	154.05	15	\$218.37	15%	at stock turnover	\$0.10	12.31	12.31	AEG-BEST
Multifamily	Heating	Air-Source Heat Pump	36 kBtu/hr	Existing	71.12	15	\$218.37	15%	at stock turnover	\$0.10	5.69	5.69	AEG-BEST
Multifamily	Cooling	Geothermal Heat Pump	36 kBtu/hr	Existing	0.00	20	\$2,531.24	0%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Multifamily	Heating	Geothermal Heat Pump	36 kBtu/hr	Existing	0.00	20	\$2,531.24	0%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Multifamily	Heating	Electric Furnace	36 kBtu/hr	Existing	0.00	18	\$0.00	6%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Multifamily	Heating	Electric Room Heat	3.5 kBtu/hr	Existing	0.00	18	\$0.00	12%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Multifamily	Water Heating	Water Heater (<= 55 Gal)	50 gallons	Existing	916.38	13	\$743.91	36%	50%	\$0.09	803.01	803.01	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Multifamily	Water Heating	Water Heater (<= 55 Gal)	50 gallons	Existing	1,001.58	13	\$1,215.07	22%	30%	\$0.14	577.88	577.88	7th Power Plan
Multifamily	Water Heating	Water Heater (<= 55 Gal)	50 gallons	Existing	1,450.78	13	\$1,573.80	14%	20%	\$0.13	558.60	558.60	Annual Energy Outlook, 2015
Multifamily	Water Heating	Water Heater (> 55 Gal)	50 gallons	Existing	801.73	13	\$0.00	5%	50%	\$0.00	0.00	0.00	7th Power Plan
Multifamily	Water Heating	Water Heater (> 55 Gal)	50 gallons	Existing	164.15	13	\$471.15	3%	30%	\$0.42	7.93	7.93	7th Power Plan
Multifamily	Water Heating	Water Heater (> 55 Gal)	50 gallons	Existing	518.49	13	\$829.89	2%	20%	\$0.20	19.60	19.60	Annual Energy Outlook, 2015
Multifamily	Interior Lighting	General Service Screw-In	1 lamps	Existing	5.94	12	\$6.13	100%	at stock turnover	\$0.09	411.40	420.05	EIA 2011-2012 Ref. Case
Multifamily	Interior Lighting	Linear Lighting	1 lamps	Existing	2.66	17	\$18.99	100%	at stock turnover	\$0.72	32.46	32.46	7th Power Plan
Multifamily	Interior Lighting	Exempted Screw-In	1 lamps	Existing	22.65	10	\$12.32	100%	at stock turnover	-\$0.01	95.39	91.85	EIA 2011-2012 Ref. Case
Multifamily	Exterior Lighting	Screw-in	1 lamps	Existing	25.39	10	\$6.13	100%	at stock turnover	\$0.03	130.11	130.86	EIA 2011-2012 Ref. Case
Multifamily	Appliances	Refrigerator	1 units	Existing	106.55	15	\$240.28	100%	at stock turnover	\$0.24	208.81	208.81	7th Power Plan
Multifamily	Appliances	Second Refrigerator	1 units	Existing	149.35	15	\$240.28	26%	at stock turnover	\$0.17	23.51	23.51	7th Power Plan
Multifamily	Appliances	Freezer	1 units	Existing	123.08	22	\$83.03	45%	at stock turnover	\$0.06	27.26	27.26	RTF Workbook
Multifamily	Appliances	Clothes Washer	1 units	Existing	9.05	14	\$194.20	96%	at stock turnover	\$2.39	11.42	11.42	7th Power Plan
Multifamily	Appliances	Clothes Dryer	1 units	Existing	122.42	16	\$308.00	91%	at stock turnover	\$0.26	82.12	82.12	7th Power Plan
Multifamily	Appliances	Dishwasher	1 units	Existing	2.13	15	\$6.36	74%	at stock turnover	\$0.32	2.97	2.97	7th Power Plan
Multifamily	Appliances	Stove/Oven	1 units	Existing	135.70	20	\$307.09	82%	at stock turnover	\$0.21	276.62	276.62	7th Power Plan
Multifamily	Appliances	Microwave	1 units	Existing	8.11	11	\$4.63	93%	at stock turnover	\$0.07	26.34	26.34	7th Power Plan
Multifamily	Electronics	Personal Computers	1 units	Existing	57.28	5	\$14.17	80%	at stock turnover	\$0.05	25.72	25.72	7th Power Plan
Multifamily	Electronics	Monitor	1 units	Existing	56.08	8	\$8.21	96%	at stock turnover	\$0.02	14.41	14.41	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Multifamily	Electronics	Laptops	1 units	Existing	13.86	4	\$57.18	120%	at stock turnover	\$1.08	10.96	10.96	7th Power Plan
Multifamily	Electronics	Printer/Fax/Copier	1 units	Existing	19.33	5	\$0.01	117%	at stock turnover	\$0.00	2.28	2.28	ENERGY STAR
Multifamily	Electronics	TVs	1 units	Existing	28.03	6	\$0.01	236%	at stock turnover	\$0.00	23.57	23.57	ENERGY STAR
Multifamily	Electronics	Set-top Boxes/DVRs	1 units	Existing	64.70	5	\$0.00	266%	at stock turnover	\$0.00	0.00	0.00	Voluntary Agreement
Multifamily	Electronics	Devices and Gadgets	1 units	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Multifamily	Miscellaneous	Electric Vehicles	1 units	Existing	0.00	10	\$770.00	0%	at stock turnover	\$0.00	0.00	0.00	7th Power Plan
Multifamily	Miscellaneous	Pool Heater	1 units	Existing	0.00	15	\$3,546.07	0%	at stock turnover	\$0.00	0.00	0.00	AEG Research
Multifamily	Miscellaneous	Pool Pump	1 units	Existing	0.00	15	\$872.94	4%	at stock turnover	\$0.00	0.00	0.00	Southern California Edison
Multifamily	Miscellaneous	Hot Tub/Spa	1 units	Existing	0.00	15	\$350.00	9%	at stock turnover	\$0.00	0.00	0.00	AEG Research
Multifamily	Miscellaneous	Furnace Fan	1 units	Existing	25.12	20	\$97.00	14%	at stock turnover	\$0.36	-0.53	0.37	DOE Rule: EERE-2010-BT-STD-0011
Multifamily	Miscellaneous	Well Pump	1 units	Existing	0.00	5	\$0.00	34%	at stock turnover	\$0.00	0.00	0.00	N/A
Multifamily	Miscellaneous	Miscellaneous	1 units	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Multifamily	Cooling	Central AC	12 kBtu/hr	New	39.60	15	\$129.29	12%	at stock turnover	\$0.35	6.88	6.88	AEG-BEST
Multifamily	Cooling	Room AC	10.5 kBtu/hr	New	27.66	12	\$212.54	4%	at stock turnover	\$0.94	3.07	3.07	AEG-BEST
Multifamily	Cooling	Evaporative AC	1 sqft	New	0.00	15	\$0.11	0%	at stock turnover	\$0.00	0.00	0.00	New Buildings Institute Study, 2006
Multifamily	Cooling	Air-Source Heat Pump	36 kBtu/hr	New	219.62	15	\$218.37	17%	at stock turnover	\$0.00	0.32	0.32	AEG-BEST
Multifamily	Heating	Air-Source Heat Pump	36 kBtu/hr	New	0.00	15	\$218.37	17%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Multifamily	Cooling	Geothermal Heat Pump	36 kBtu/hr	New	0.00	20	\$2,531.24	0%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Multifamily	Heating	Geothermal Heat Pump	36 kBtu/hr	New	0.00	20	\$2,531.24	0%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Multifamily	Heating	Electric Furnace	36 kBtu/hr	New	0.00	18	\$0.00	8%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Multifamily	Heating	Electric Room Heat	3.5 kBtu/hr	New	0.00	18	\$0.00	3%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Multifamily	Water Heating	Water Heater (<= 55 Gal)	50 gallons	New	916.40	13	\$743.91	22%	50%	\$0.09	64.14	64.14	7th Power Plan
Multifamily	Water Heating	Water Heater (<= 55 Gal)	50 gallons	New	1,001.03	13	\$1,215.07	13%	30%	\$0.14	46.17	46.17	7th Power Plan
Multifamily	Water Heating	Water Heater (<= 55 Gal)	50 gallons	New	1,450.24	13	\$1,573.80	9%	20%	\$0.13	44.63	44.63	Annual Energy Outlook, 2015
Multifamily	Water Heating	Water Heater (> 55 Gal)	50 gallons	New	801.73	13	\$0.00	4%	50%	\$0.00	0.00	0.00	7th Power Plan
Multifamily	Water Heating	Water Heater (> 55 Gal)	50 gallons	New	164.13	13	\$471.15	3%	30%	\$0.42	1.07	1.07	7th Power Plan
Multifamily	Water Heating	Water Heater (> 55 Gal)	50 gallons	New	518.47	13	\$829.89	2%	20%	\$0.20	2.64	2.64	Annual Energy Outlook, 2015
Multifamily	Interior Lighting	General Service Screw-In	1 lamps	New	6.09	12	\$6.13	100%	at stock turnover	\$0.09	66.80	65.79	EIA 2011-2012 Ref. Case
Multifamily	Interior Lighting	Linear Lighting	1 lamps	New	1.67	17	\$19.99	100%	at stock turnover	\$1.20	3.48	3.48	7th Power Plan
Multifamily	Interior Lighting	Exempted Screw-In	1 lamps	New	22.65	10	\$12.32	100%	at stock turnover	-\$0.01	15.31	15.06	EIA 2011-2012 Ref. Case
Multifamily	Exterior Lighting	Screw-in	1 lamps	New	25.95	10	\$6.13	100%	at stock turnover	\$0.03	21.12	20.76	EIA 2011-2012 Ref. Case
Multifamily	Appliances	Refrigerator	1 units	New	106.55	15	\$240.28	100%	at stock turnover	\$0.24	33.19	33.19	7th Power Plan
Multifamily	Appliances	Second Refrigerator	1 units	New	149.35	15	\$240.28	20%	at stock turnover	\$0.17	11.59	11.59	7th Power Plan
Multifamily	Appliances	Freezer	1 units	New	123.08	22	\$83.03	35%	at stock turnover	\$0.06	0.54	0.54	RTF Workbook
Multifamily	Appliances	Clothes Washer	1 units	New	9.05	14	\$194.20	97%	at stock turnover	\$2.39	1.60	1.60	7th Power Plan
Multifamily	Appliances	Clothes Dryer	1 units	New	122.42	16	\$308.00	90%	at stock turnover	\$0.26	19.57	19.57	7th Power Plan
Multifamily	Appliances	Dishwasher	1 units	New	2.13	15	\$6.36	89%	at stock turnover	\$0.32	0.46	0.46	7th Power Plan
Multifamily	Appliances	Stove/Oven	1 units	New	135.70	20	\$307.09	69%	at stock turnover	\$0.21	38.69	38.69	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Multifamily	Appliances	Microwave	1 units	New	8.11	11	\$4.63	93%	at stock turnover	\$0.07	3.59	3.59	7th Power Plan
Multifamily	Electronics	Personal Computers	1 units	New	57.28	5	\$14.17	65%	at stock turnover	\$0.05	3.60	3.60	7th Power Plan
Multifamily	Electronics	Monitor	1 units	New	56.08	8	\$8.21	78%	at stock turnover	\$0.02	2.53	2.53	7th Power Plan
Multifamily	Electronics	Laptops	1 units	New	13.86	4	\$57.18	199%	at stock turnover	\$1.08	1.39	1.39	7th Power Plan
Multifamily	Electronics	Printer/Fax/Copier	1 units	New	19.33	5	\$0.01	173%	at stock turnover	\$0.00	0.35	0.35	ENERGY STAR
Multifamily	Electronics	TVs	1 units	New	28.03	6	\$0.01	295%	at stock turnover	\$0.00	3.72	3.72	ENERGY STAR
Multifamily	Electronics	Set-top Boxes/DVRs	1 units	New	64.70	5	\$0.00	333%	at stock turnover	\$0.00	0.00	0.00	Voluntary Agreement
Multifamily	Electronics	Devices and Gadgets	1 units	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Multifamily	Miscellaneous	Electric Vehicles	1 units	New	0.00	10	\$770.00	0%	at stock turnover	\$0.00	0.00	0.00	7th Power Plan
Multifamily	Miscellaneous	Pool Heater	1 units	New	0.00	15	\$3,546.07	0%	at stock turnover	\$0.00	0.00	0.00	AEG Research
Multifamily	Miscellaneous	Pool Pump	1 units	New	0.00	15	\$872.94	4%	at stock turnover	\$0.00	0.00	0.00	Southern California Edison
Multifamily	Miscellaneous	Hot Tub/Spa	1 units	New	0.00	15	\$350.00	9%	at stock turnover	\$0.00	0.00	0.00	AEG Research
Multifamily	Miscellaneous	Furnace Fan	1 units	New	25.12	20	\$97.00	14%	at stock turnover	\$0.36	-0.08	0.06	DOE Rule: EERE-2010-BT-STD-0011
Multifamily	Miscellaneous	Well Pump	1 units	New	0.00	5	\$0.00	54%	at stock turnover	\$0.00	0.00	0.00	N/A
Multifamily	Miscellaneous	Miscellaneous	1 units	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Mobile Home	Cooling	Central AC	12 kBtu/hr	Existing	39.87	15	\$129.29	9%	at stock turnover	\$0.35	12.87	12.87	AEG-BEST
Mobile Home	Cooling	Room AC	10.5 kBtu/hr	Existing	17.67	12	\$212.54	17%	at stock turnover	\$1.46	11.62	11.62	AEG-BEST
Mobile Home	Cooling	Evaporative AC	1 sqft	Existing	0.11	15	\$0.11	7%	at stock turnover	\$0.10	48.74	48.74	New Buildings Institute Study, 2006
Mobile Home	Cooling	Air-Source Heat Pump	36 kBtu/hr	Existing	95.01	15	\$218.37	15%	at stock turnover	\$0.09	43.94	43.94	AEG-BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Mobile Home	Heating	Air-Source Heat Pump	36 kBtu/hr	Existing	177.03	15	\$218.37	15%	at stock turnover	\$0.09	81.90	81.90	AEG-BEST
Mobile Home	Cooling	Geothermal Heat Pump	36 kBtu/hr	Existing	0.00	20	\$2,531.24	0%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Mobile Home	Heating	Geothermal Heat Pump	36 kBtu/hr	Existing	0.00	20	\$2,531.24	0%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Mobile Home	Heating	Electric Furnace	36 kBtu/hr	Existing	0.00	18	\$0.00	6%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Mobile Home	Heating	Electric Room Heat	3.5 kBtu/hr	Existing	0.00	18	\$0.00	12%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Mobile Home	Water Heating	Water Heater (<= 55 Gal)	50 gallons	Existing	912.99	13	\$743.91	36%	50%	\$0.09	1,171.85	1,171.85	7th Power Plan
Mobile Home	Water Heating	Water Heater (<= 55 Gal)	50 gallons	Existing	997.84	13	\$1,215.07	22%	30%	\$0.14	843.32	843.32	7th Power Plan
Mobile Home	Water Heating	Water Heater (<= 55 Gal)	50 gallons	Existing	1,445.43	13	\$1,573.80	14%	20%	\$0.13	815.20	815.20	Annual Energy Outlook, 2015
Mobile Home	Water Heating	Water Heater (> 55 Gal)	50 gallons	Existing	798.85	13	\$0.00	5%	50%	\$0.00	0.00	0.00	7th Power Plan
Mobile Home	Water Heating	Water Heater (> 55 Gal)	50 gallons	Existing	163.56	13	\$471.15	3%	30%	\$0.42	2.17	2.17	7th Power Plan
Mobile Home	Water Heating	Water Heater (> 55 Gal)	50 gallons	Existing	516.63	13	\$829.89	2%	20%	\$0.20	5.35	5.35	Annual Energy Outlook, 2015
Mobile Home	Interior Lighting	General Service Screw-In	1 lamps	Existing	8.45	12	\$6.13	100%	at stock turnover	\$0.07	659.81	672.94	EIA 2011-2012 Ref. Case
Mobile Home	Interior Lighting	Linear Lighting	1 lamps	Existing	2.08	17	\$14.79	100%	at stock turnover	\$0.72	48.08	48.08	7th Power Plan
Mobile Home	Interior Lighting	Exempted Screw-In	1 lamps	Existing	31.75	10	\$12.32	100%	at stock turnover	-\$0.01	487.19	469.10	EIA 2011-2012 Ref. Case
Mobile Home	Exterior Lighting	Screw-in	1 lamps	Existing	22.80	10	\$6.13	100%	at stock turnover	\$0.03	164.11	164.86	EIA 2011-2012 Ref. Case
Mobile Home	Appliances	Refrigerator	1 units	Existing	106.55	15	\$240.28	100%	at stock turnover	\$0.24	260.85	260.85	7th Power Plan
Mobile Home	Appliances	Second Refrigerator	1 units	Existing	149.35	15	\$240.28	26%	at stock turnover	\$0.17	62.97	62.97	7th Power Plan
Mobile Home	Appliances	Freezer	1 units	Existing	123.09	22	\$83.03	45%	at stock turnover	\$0.06	114.82	114.82	RTF Workbook
Mobile Home	Appliances	Clothes Washer	1 units	Existing	9.17	14	\$194.20	96%	at stock turnover	\$2.36	32.70	32.70	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Mobile Home	Appliances	Clothes Dryer	1 units	Existing	129.93	16	\$308.00	91%	at stock turnover	\$0.25	212.62	212.62	7th Power Plan
Mobile Home	Appliances	Dishwasher	1 units	Existing	2.12	15	\$6.36	74%	at stock turnover	\$0.32	3.24	3.24	7th Power Plan
Mobile Home	Appliances	Stove/Oven	1 units	Existing	204.28	20	\$307.09	82%	at stock turnover	\$0.14	504.93	504.93	7th Power Plan
Mobile Home	Appliances	Microwave	1 units	Existing	8.11	11	\$4.63	93%	at stock turnover	\$0.07	33.80	33.80	7th Power Plan
Mobile Home	Electronics	Personal Computers	1 units	Existing	57.28	5	\$14.17	80%	at stock turnover	\$0.05	36.03	36.03	7th Power Plan
Mobile Home	Electronics	Monitor	1 units	Existing	56.08	8	\$8.21	96%	at stock turnover	\$0.02	20.19	20.19	7th Power Plan
Mobile Home	Electronics	Laptops	1 units	Existing	13.86	4	\$57.18	120%	at stock turnover	\$1.08	14.07	14.07	7th Power Plan
Mobile Home	Electronics	Printer/Fax/Copier	1 units	Existing	19.33	5	\$0.01	117%	at stock turnover	\$0.00	3.53	3.53	ENERGY STAR
Mobile Home	Electronics	TVs	1 units	Existing	21.10	6	\$0.01	236%	at stock turnover	\$0.00	26.87	26.87	ENERGY STAR
Mobile Home	Electronics	Set-top Boxes/DVRs	1 units	Existing	64.70	5	\$0.00	266%	at stock turnover	\$0.00	0.00	0.00	Voluntary Agreement
Mobile Home	Electronics	Devices and Gadgets	1 units	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Mobile Home	Miscellaneous	Electric Vehicles	1 units	Existing	116.75	10	\$770.00	0%	at stock turnover	\$0.88	1.95	1.95	7th Power Plan
Mobile Home	Miscellaneous	Pool Heater	1 units	Existing	0.00	15	\$3,546.07	0%	at stock turnover	\$0.00	0.00	0.00	AEG Research
Mobile Home	Miscellaneous	Pool Pump	1 units	Existing	702.98	15	\$872.94	4%	at stock turnover	\$0.13	31.97	31.97	Southern California Edison
Mobile Home	Miscellaneous	Hot Tub/Spa	1 units	Existing	169.51	15	\$350.00	9%	at stock turnover	\$0.22	44.06	44.06	AEG Research
Mobile Home	Miscellaneous	Furnace Fan	1 units	Existing	53.36	20	\$97.00	14%	at stock turnover	\$0.17	-2.85	1.98	DOE Rule: EERE-2010-BT-STD-0011
Mobile Home	Miscellaneous	Well Pump	1 units	Existing	0.00	5	\$0.00	34%	at stock turnover	\$0.00	0.00	0.00	N/A
Mobile Home	Miscellaneous	Miscellaneous	1 units	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Mobile Home	Cooling	Central AC	12 kBtu/hr	New	43.74	15	\$129.29	12%	at stock turnover	\$0.32	1.27	1.27	AEG-BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Mobile Home	Cooling	Room AC	10.5 kBtu/hr	New	8.48	12	\$212.54	4%	at stock turnover	\$3.05	1.44	1.44	AEG-BEST
Mobile Home	Cooling	Evaporative AC	1 sqft	New	0.11	15	\$0.11	0%	at stock turnover	\$0.10	7.54	7.54	New Buildings Institute Study, 2006
Mobile Home	Cooling	Air-Source Heat Pump	36 kBtu/hr	New	148.47	15	\$218.37	17%	at stock turnover	\$0.06	11.57	11.57	AEG-BEST
Mobile Home	Heating	Air-Source Heat Pump	36 kBtu/hr	New	219.70	15	\$218.37	17%	at stock turnover	\$0.06	17.12	17.12	AEG-BEST
Mobile Home	Cooling	Geothermal Heat Pump	36 kBtu/hr	New	0.00	20	\$2,531.24	0%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Mobile Home	Heating	Geothermal Heat Pump	36 kBtu/hr	New	0.00	20	\$2,531.24	0%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Mobile Home	Heating	Electric Furnace	36 kBtu/hr	New	0.00	18	\$0.00	8%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Mobile Home	Heating	Electric Room Heat	3.5 kBtu/hr	New	0.00	18	\$0.00	3%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Mobile Home	Water Heating	Water Heater (<= 55 Gal)	50 gallons	New	912.99	13	\$743.91	22%	50%	\$0.09	170.23	170.23	7th Power Plan
Mobile Home	Water Heating	Water Heater (<= 55 Gal)	50 gallons	New	997.97	13	\$1,215.07	13%	30%	\$0.14	122.51	122.51	7th Power Plan
Mobile Home	Water Heating	Water Heater (<= 55 Gal)	50 gallons	New	1,445.56	13	\$1,573.80	9%	20%	\$0.13	118.42	118.42	Annual Energy Outlook, 2015
Mobile Home	Water Heating	Water Heater (> 55 Gal)	50 gallons	New	798.85	13	\$0.00	4%	50%	\$0.00	0.00	0.00	7th Power Plan
Mobile Home	Water Heating	Water Heater (> 55 Gal)	50 gallons	New	163.56	13	\$471.15	3%	30%	\$0.42	0.29	0.29	7th Power Plan
Mobile Home	Water Heating	Water Heater (> 55 Gal)	50 gallons	New	516.63	13	\$829.89	2%	20%	\$0.20	0.72	0.72	Annual Energy Outlook, 2015
Mobile Home	Interior Lighting	General Service Screw-In	1 lamps	New	8.68	12	\$6.13	100%	at stock turnover	\$0.06	94.95	93.50	EIA 2011-2012 Ref. Case
Mobile Home	Interior Lighting	Linear Lighting	1 lamps	New	1.01	17	\$15.57	100%	at stock turnover	\$1.55	3.55	3.55	7th Power Plan
Mobile Home	Interior Lighting	Exempted Screw-In	1 lamps	New	31.75	10	\$12.32	100%	at stock turnover	-\$0.01	69.19	68.02	EIA 2011-2012 Ref. Case
Mobile Home	Exterior Lighting	Screw-in	1 lamps	New	23.38	10	\$6.13	100%	at stock turnover	\$0.03	23.60	23.20	EIA 2011-2012 Ref. Case
Mobile Home	Appliances	Refrigerator	1 units	New	106.55	15	\$240.28	100%	at stock turnover	\$0.24	41.47	41.47	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Mobile Home	Appliances	Second Refrigerator	1 units	New	149.35	15	\$240.28	20%	at stock turnover	\$0.17	16.01	16.01	7th Power Plan
Mobile Home	Appliances	Freezer	1 units	New	123.10	22	\$83.03	35%	at stock turnover	\$0.06	27.79	27.79	RTF Workbook
Mobile Home	Appliances	Clothes Washer	1 units	New	9.17	14	\$194.20	97%	at stock turnover	\$2.36	4.56	4.56	7th Power Plan
Mobile Home	Appliances	Clothes Dryer	1 units	New	129.93	16	\$308.00	90%	at stock turnover	\$0.25	34.26	34.26	7th Power Plan
Mobile Home	Appliances	Dishwasher	1 units	New	2.13	15	\$6.36	89%	at stock turnover	\$0.32	0.50	0.50	7th Power Plan
Mobile Home	Appliances	Stove/Oven	1 units	New	204.28	20	\$307.09	69%	at stock turnover	\$0.14	82.40	82.40	7th Power Plan
Mobile Home	Appliances	Microwave	1 units	New	8.11	11	\$4.63	93%	at stock turnover	\$0.07	4.50	4.50	7th Power Plan
Mobile Home	Electronics	Personal Computers	1 units	New	57.28	5	\$14.17	65%	at stock turnover	\$0.05	4.22	4.22	7th Power Plan
Mobile Home	Electronics	Monitor	1 units	New	56.08	8	\$8.21	78%	at stock turnover	\$0.02	2.68	2.68	7th Power Plan
Mobile Home	Electronics	Laptops	1 units	New	13.86	4	\$57.18	199%	at stock turnover	\$1.08	1.78	1.78	7th Power Plan
Mobile Home	Electronics	Printer/Fax/Copier	1 units	New	19.33	5	\$0.01	173%	at stock turnover	\$0.00	0.46	0.46	ENERGY STAR
Mobile Home	Electronics	TVs	1 units	New	21.10	6	\$0.01	295%	at stock turnover	\$0.00	4.28	4.28	ENERGY STAR
Mobile Home	Electronics	Set-top Boxes/DVRs	1 units	New	64.70	5	\$0.00	333%	at stock turnover	\$0.00	0.00	0.00	Voluntary Agreement
Mobile Home	Electronics	Devices and Gadgets	1 units	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Mobile Home	Miscellaneous	Electric Vehicles	1 units	New	116.75	10	\$770.00	0%	at stock turnover	\$0.88	0.26	0.26	7th Power Plan
Mobile Home	Miscellaneous	Pool Heater	1 units	New	0.00	15	\$3,546.07	0%	at stock turnover	\$0.00	0.00	0.00	AEG Research
Mobile Home	Miscellaneous	Pool Pump	1 units	New	702.98	15	\$872.94	4%	at stock turnover	\$0.13	4.73	4.73	Southern California Edison
Mobile Home	Miscellaneous	Hot Tub/Spa	1 units	New	169.51	15	\$350.00	9%	at stock turnover	\$0.22	9.79	9.79	AEG Research
Mobile Home	Miscellaneous	Furnace Fan	1 units	New	53.36	20	\$97.00	14%	at stock turnover	\$0.17	-0.43	0.30	DOE Rule: EERE-2010-BT-STD-0011

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Mobile Home	Miscellaneous	Well Pump	1 units	New	0.00	5	\$0.00	54%	at stock turnover	\$0.00	0.00	0.00	N/A
Mobile Home	Miscellaneous	Miscellaneous	1 units	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Single Family	Cooling	Insulation - Ceiling Installation	sqft roof	Existing	0.21	45	\$1.15	22%	38%	\$0.03	326.07	352.82	7th Power Plan
Single Family	Heating	Insulation - Ceiling Installation	sqft roof	Existing	1.64	45	\$1.15	22%	38%	\$0.03	1,903.59	1,911.60	7th Power Plan
Single Family	Cooling	Insulation - Ceiling Upgrade	sqft roof	Existing	0.03	45	\$1.01	22%	38%	\$0.13	45.72	52.36	7th Power Plan
Single Family	Heating	Insulation - Ceiling Upgrade	sqft roof	Existing	0.37	45	\$1.01	22%	38%	\$0.13	427.96	437.71	7th Power Plan
Single Family	Cooling	Insulation - Radiant Barrier	sqft roof	Existing	0.13	15	\$0.67	4%	19%	\$0.06	181.92	212.79	AEG Research
Single Family	Heating	Insulation - Radiant Barrier	sqft roof	Existing	0.69	15	\$0.67	4%	19%	\$0.06	722.85	773.96	AEG Research
Single Family	Cooling	Insulation - Wall Cavity Installation	sqft wall	Existing	0.03	45	\$1.42	40%	40%	\$0.05	0.00	0.00	7th Power Plan
Single Family	Heating	Insulation - Wall Cavity Installation	sqft wall	Existing	1.48	45	\$1.42	40%	40%	\$0.05	0.00	0.00	7th Power Plan
Single Family	Cooling	Insulation - Wall Sheathing	sqft wall	Existing	0.02	20	\$0.93	3%	3%	\$0.20	0.00	0.00	AEG-BEST
Single Family	Heating	Insulation - Wall Sheathing	sqft wall	Existing	0.23	20	\$0.93	3%	3%	\$0.20	0.00	0.00	AEG-BEST
Single Family	Cooling	Insulation - Floor Installation	sqft floor cs	Existing	-0.03	45	\$1.35	49%	60%	\$0.11	-16.13	-18.49	7th Power Plan
Single Family	Heating	Insulation - Floor Installation	sqft floor cs	Existing	0.66	45	\$1.35	49%	60%	\$0.11	257.43	262.70	7th Power Plan
Single Family	Cooling	Insulation - Floor Upgrade	sqft floor cs	Existing	0.00	25	\$3.39	0%	0%	\$1.57	0.00	0.00	7th Power Plan
Single Family	Heating	Insulation - Floor Upgrade	sqft floor cs	Existing	0.10	25	\$3.39	0%	0%	\$1.57	0.00	0.00	7th Power Plan
Single Family	Cooling	Insulation - Foundation	household	Existing	-25.54	70	\$1,241.19	2%	2%	\$0.10	0.00	0.00	RTF Workbook
Single Family	Heating	Insulation - Foundation	household	Existing	613.87	70	\$1,241.19	2%	2%	\$0.10	0.00	0.00	RTF Workbook
Single Family	Cooling	Insulation - Ducting	household	Existing	47.02	18	\$528.00	52%	60%	\$0.17	17.74	22.57	AEG-BEST
Single Family	Heating	Insulation - Ducting	household	Existing	131.29	18	\$528.00	52%	60%	\$0.17	44.07	54.72	AEG-BEST
Single Family	Cooling	Ducting - Repair and Sealing	household	Existing	48.01	20	\$769.57	31%	75%	\$0.07	108.72	129.65	7th Power Plan
Single Family	Heating	Ducting - Repair and Sealing	household	Existing	626.59	20	\$769.57	31%	75%	\$0.07	1,315.13	1,414.23	7th Power Plan
Single Family	Cooling	Building Shell - Infiltration Control	sqft home	Existing	0.00	15	\$0.68	35%	75%	\$0.14	27.61	34.32	7th Power Plan

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Single Family	Heating	Building Shell - Infiltration Control	sqft home	Existing	0.30	15	\$0.68	35%	75%	\$0.14	1,596.94	1,949.39	7th Power Plan
Single Family	Cooling	Windows - High Efficiency/ENERGY STAR	sqft window	Existing	0.54	45	\$19.01	34%	75%	\$0.14	349.63	401.17	7th Power Plan
Single Family	Heating	Windows - High Efficiency/ENERGY STAR	sqft window	Existing	6.58	45	\$19.01	34%	75%	\$0.14	3,252.54	3,338.96	7th Power Plan
Single Family	Cooling	Windows - Install Reflective Film	sqft window	Existing	0.04	45	\$3.38	16%	75%	\$0.21	32.91	38.80	7th Power Plan
Single Family	Heating	Windows - Install Reflective Film	sqft window	Existing	0.71	45	\$3.38	16%	75%	\$0.21	486.97	526.44	7th Power Plan
Single Family	Cooling	Doors - Storm and Thermal	household	Existing	7.08	20	\$682.67	60%	80%	\$0.47	13.83	17.29	AEG-BEST
Single Family	Heating	Doors - Storm and Thermal	household	Existing	69.18	20	\$682.67	60%	80%	\$0.47	96.65	120.44	AEG-BEST
Single Family	Cooling	Ductless Mini Split Heat Pump (Zonal)	household	Existing	94.24	15	\$3,448.86	1%	75%	\$0.12	237.38	278.68	7th Power Plan
Single Family	Heating	Ductless Mini Split Heat Pump (Zonal)	household	Existing	1,843.59	15	\$3,448.86	1%	75%	\$0.12	3,912.43	4,340.63	7th Power Plan
Single Family	Cooling	Ductless Mini Split Heat Pump (Ducted Forced Air)	household	Existing	93.22	15	\$3,517.21	1%	45%	\$0.08	78.60	93.57	7th Power Plan
Single Family	Heating	Ductless Mini Split Heat Pump (Ducted Forced Air)	household	Existing	3,039.69	15	\$3,517.21	1%	45%	\$0.08	1,769.16	1,928.20	7th Power Plan
Single Family	Cooling	Space Heating - Heat Recovery Ventilator	household	Existing	6.60	20	\$1,303.92	0%	0%	\$0.14	0.00	0.00	7th Power Plan
Single Family	Heating	Space Heating - Heat Recovery Ventilator	household	Existing	543.43	20	\$1,303.92	0%	0%	\$0.14	0.00	0.00	7th Power Plan
Single Family	Cooling	Furnace - Conversion to Air-Source Heat Pump	household	Existing	0.00	15	\$2,955.28	0%	0%	\$0.10	0.00	0.00	7th Power Plan
Single Family	Heating	Furnace - Conversion to Air-Source Heat Pump	household	Existing	2,312.19	15	\$2,955.28	0%	0%	\$0.10	0.00	0.00	7th Power Plan
Single Family	Cooling	Room AC - Removal of Second Unit	household	Existing	493.03	3	\$18.00	0%	50%	\$0.01	891.74	960.68	CA DEER
Single Family	Cooling	Central AC - Maintenance and Tune-Up	household	Existing	65.04	6	\$275.74	7%	75%	\$0.56	83.81	96.72	Illinois TRM
Single Family	Cooling	Central Heat Pump - Controls and Commissioning	household	Existing	0.53	15	\$581.99	65%	75%	\$0.07	0.17	0.20	7th Power Plan
Single Family	Heating	Central Heat Pump - Controls and Commissioning	household	Existing	587.58	15	\$581.99	65%	75%	\$0.07	196.43	212.14	7th Power Plan

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Single Family	Cooling	Ceiling Fan - ENERGY STAR	ceiling fans	Existing	8.76	10	\$47.23	40%	75%	\$0.48	60.71	69.09	ENERGY STAR
Single Family	Cooling	Whole-House Fan - Installation	household	Existing	35.76	20	\$714.44	15%	40%	\$1.16	44.06	56.46	California Public Utilities Commission
Single Family	Cooling	Thermostat - WiFi/Interactive	household	Existing	75.30	10	\$256.67	5%	75%	\$0.05	540.85	619.39	7th Power Plan
Single Family	Heating	Thermostat - WiFi/Interactive	household	Existing	396.56	10	\$256.67	5%	75%	\$0.05	2,136.15	2,267.01	7th Power Plan
Single Family	Water Heating	Water Heater - Drainwater Heat Recovery	household	Existing	204.62	40	\$837.67	0%	0%	\$0.20	0.00	0.00	7th Power Plan
Single Family	Water Heating	Water Heater - Faucet Aerators	aerators	Existing	16.41	15	\$5.13	34%	50%	\$0.02	123.87	151.90	7th Power Plan
Single Family	Water Heating	Water Heater - Low-Flow Showerheads	showerheads	Existing	24.23	10	\$26.56	51%	75%	\$0.11	165.02	217.17	7th Power Plan
Single Family	Water Heating	Water Heater - Pipe Insulation	feet pipe	Existing	22.71	15	\$3.26	12%	75%	\$0.01	1,145.20	1,481.69	Mid-Atlantic TRM
Single Family	Water Heating	Water Heater - Desuperheater	household	Existing	1,379.68	20	\$1,136.89	0%	0%	\$0.05	63.89	77.33	RTF Workbook
Single Family	Water Heating	Water Heater - Temperature Setback	household	Existing	69.46	2	\$5.00	41%	75%	\$0.03	378.96	499.56	Illinois TRM
Single Family	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	showerheads	Existing	26.78	10	\$19.30	16%	45%	\$0.07	224.68	294.99	RTF Workbook
Single Family	Water Heating	Water Heater - Solar System	household	Existing	1,019.38	20	\$8,847.45	2%	30%	\$0.55	2,953.97	3,626.65	7th Power Plan
Single Family	Interior Lighting	Interior Lighting - Occupancy Sensors	occ sens	Existing	66.22	8	\$99.16	0%	5%	\$0.14	118.50	182.63	Pacific Gas and Electric Research
Single Family	Exterior Lighting	Exterior Lighting - Photosensor Control	ext fixt	Existing	15.24	15	\$10.19	8%	50%	\$0.04	296.10	619.82	Michigan Energy Measures Database
Single Family	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	ext fixt pv	Existing	18.46	3	\$28.00	1%	30%	\$0.31	115.92	269.20	AEG Research
Single Family	Exterior Lighting	Exterior Lighting - Timeclock Installation	ext fixt	Existing	9.80	10	\$19.15	2%	50%	\$0.16	211.70	469.62	Ontario Power TRM
Single Family	Appliances	Refrigerator - Decommissioning and Recycling	household	Existing	297.44	6	\$143.58	0%	75%	\$0.12	1,337.36	1,488.53	PacificCorp '13-'14 Evaluation
Single Family	Appliances	Freezer - Decommissioning and Recycling	household	Existing	287.65	5	\$143.58	0%	50%	\$0.14	1,411.65	1,594.96	PacificCorp '13-'14 Evaluation

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Single Family	Electronics	Advanced Power Strips - Tier 1	smart strip	Existing	28.11	5	\$15.83	8%	25%	\$0.10	233.00	229.59	7th Power Plan
Single Family	Electronics	Advanced Power Strips - Tier 2	smart strip	Existing	177.63	5	\$50.49	8%	25%	\$0.05	1,502.71	1,449.54	7th Power Plan
Single Family	Miscellaneous	Pool Pump - Timer	household	Existing	446.00	10	\$85.22	1%	75%	\$0.02	278.24	288.88	Ontario Power TRM
Single Family	Miscellaneous	Pool Heater - Solar Water Heating System	household	Existing	1,886.94	20	\$3,767.92	0%	30%	\$0.14	17.23	17.98	AEG Research
Single Family	Cooling	ENERGY STAR Home Design	household	Existing	65.90	20	\$4,253.40	0%	0%	\$0.16	0.00	0.00	RTF Workbook
Single Family	Heating	ENERGY STAR Home Design	household	Existing	620.61	20	\$4,253.40	0%	0%	\$0.16	0.00	0.00	RTF Workbook
Single Family	Water Heating	ENERGY STAR Home Design	household	Existing	424.50	20	\$4,253.40	0%	0%	\$0.16	0.00	0.00	RTF Workbook
Single Family	Interior Lighting	ENERGY STAR Home Design	household	Existing	304.81	20	\$4,253.40	0%	0%	\$0.16	0.00	0.00	RTF Workbook
Single Family	Cooling	Behavioral Programs	household	Existing	8.71	1	\$9.30	0%	40%	\$0.05	72.87	102.39	AEG Research
Single Family	Heating	Behavioral Programs	household	Existing	29.94	1	\$9.30	0%	40%	\$0.05	264.12	355.51	AEG Research
Single Family	Water Heating	Behavioral Programs	household	Existing	41.90	1	\$9.30	0%	40%	\$0.05	317.93	481.80	AEG Research
Single Family	Interior Lighting	Behavioral Programs	household	Existing	14.07	1	\$9.30	0%	40%	\$0.05	104.97	211.39	AEG Research
Single Family	Exterior Lighting	Behavioral Programs	household	Existing	3.16	1	\$9.30	0%	40%	\$0.05	17.79	65.46	AEG Research
Single Family	Appliances	Behavioral Programs	household	Existing	45.25	1	\$9.30	0%	40%	\$0.05	405.71	468.52	AEG Research
Single Family	Electronics	Behavioral Programs	household	Existing	24.60	1	\$9.30	0%	40%	\$0.05	236.92	250.71	AEG Research
Single Family	Miscellaneous	Behavioral Programs	household	Existing	16.65	1	\$9.30	0%	40%	\$0.05	168.26	154.65	AEG Research
Single Family	Interior Lighting	Interior Lighting - General Service CFLs	GSL lamp	Existing	5.62	9	-\$0.13	0%	51%	\$0.00	257.21	726.16	RTF Workbook
Single Family	Interior Lighting	Interior Lighting - Exempted CFLs	Exempt lamp	Existing	14.47	5	-\$2.74	0%	51%	-\$0.01	606.49	790.25	RTF Workbook
Single Family	Cooling	Insulation - Ceiling Installation	sqft roof	New	0.30	45	\$1.15	16%	38%	\$0.03	9.72	10.18	7th Power Plan
Single Family	Heating	Insulation - Ceiling Installation	sqft roof	New	1.47	45	\$1.15	16%	38%	\$0.03	40.40	40.94	7th Power Plan
Single Family	Cooling	Insulation - Ceiling Upgrade	sqft roof	New	0.05	45	\$1.01	16%	38%	\$0.14	1.49	1.56	7th Power Plan
Single Family	Heating	Insulation - Ceiling Upgrade	sqft roof	New	0.33	45	\$1.01	16%	38%	\$0.14	9.17	9.24	7th Power Plan
Single Family	Cooling	Insulation - Radiant Barrier	sqft roof	New	0.20	15	\$0.67	1%	5%	\$0.06	1.08	1.13	AEG Research
Single Family	Heating	Insulation - Radiant Barrier	sqft roof	New	0.64	15	\$0.67	1%	5%	\$0.06	2.92	2.92	AEG Research

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Single Family	Cooling	Insulation - Wall Cavity Installation	sqft wall	New	0.04	45	\$1.42	80%	80%	\$0.05	0.00	0.00	7th Power Plan
Single Family	Heating	Insulation - Wall Cavity Installation	sqft wall	New	1.34	45	\$1.42	80%	80%	\$0.05	0.00	0.00	7th Power Plan
Single Family	Cooling	Insulation - Wall Sheathing	sqft wall	New	0.03	20	\$0.93	2%	20%	\$0.21	1.63	1.70	AEG-BEST
Single Family	Heating	Insulation - Wall Sheathing	sqft wall	New	0.24	20	\$0.93	2%	20%	\$0.21	9.49	9.56	AEG-BEST
Single Family	Cooling	Insulation - Floor Installation	sqft floor cs	New	-0.05	45	\$1.35	76%	76%	\$0.13	-0.01	-0.01	7th Power Plan
Single Family	Heating	Insulation - Floor Installation	sqft floor cs	New	0.59	45	\$1.35	76%	76%	\$0.13	0.14	0.14	7th Power Plan
Single Family	Cooling	Insulation - Floor Upgrade	sqft floor cs	New	0.00	25	\$3.39	0%	0%	\$1.72	0.00	0.00	7th Power Plan
Single Family	Heating	Insulation - Floor Upgrade	sqft floor cs	New	0.10	25	\$3.39	0%	0%	\$1.72	0.00	0.00	7th Power Plan
Single Family	Cooling	Insulation - Foundation	household	New	-35.69	70	\$1,241.19	9%	75%	\$0.18	-3.87	-4.04	RTF Workbook
Single Family	Heating	Insulation - Foundation	household	New	381.65	70	\$1,241.19	9%	75%	\$0.18	34.68	35.04	RTF Workbook
Single Family	Cooling	Insulation - Ducting	household	New	54.82	18	\$528.00	79%	80%	\$0.17	0.06	0.06	AEG-BEST
Single Family	Heating	Insulation - Ducting	household	New	147.61	18	\$528.00	79%	80%	\$0.17	0.14	0.14	AEG-BEST
Single Family	Cooling	Ducting - Repair and Sealing	household	New	54.42	20	\$769.57	31%	75%	\$0.07	3.48	3.65	7th Power Plan
Single Family	Heating	Ducting - Repair and Sealing	household	New	663.30	20	\$769.57	31%	75%	\$0.07	35.99	36.30	7th Power Plan
Single Family	Cooling	Building Shell - Infiltration Control	sqft home	New	0.01	15	\$0.68	71%	75%	\$0.16	0.08	0.08	7th Power Plan
Single Family	Heating	Building Shell - Infiltration Control	sqft home	New	0.30	15	\$0.68	71%	75%	\$0.16	3.21	3.24	7th Power Plan
Single Family	Cooling	Windows - High Efficiency/ENERGY STAR	sqft window	New	0.81	45	\$19.01	47%	75%	\$0.14	5.57	5.82	7th Power Plan
Single Family	Heating	Windows - High Efficiency/ENERGY STAR	sqft window	New	5.91	45	\$19.01	47%	75%	\$0.14	34.13	34.38	7th Power Plan
Single Family	Cooling	Windows - Install Reflective Film	sqft window	New	0.06	45	\$3.38	16%	75%	\$0.23	0.81	0.85	7th Power Plan
Single Family	Heating	Windows - Install Reflective Film	sqft window	New	0.66	45	\$3.38	16%	75%	\$0.23	8.11	8.13	7th Power Plan
Single Family	Cooling	Doors - Storm and Thermal	household	New	4.46	20	\$682.67	70%	80%	\$0.95	0.07	0.07	AEG-BEST
Single Family	Heating	Doors - Storm and Thermal	household	New	37.45	20	\$682.67	70%	80%	\$0.95	0.50	0.51	AEG-BEST

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Single Family	Cooling	Ductless Mini Split Heat Pump (Zonal)	household	New	93.75	15	\$3,448.86	1%	75%	\$0.12	1.47	1.53	7th Power Plan
Single Family	Heating	Ductless Mini Split Heat Pump (Zonal)	household	New	1,922.70	15	\$3,448.86	1%	75%	\$0.12	24.22	23.90	7th Power Plan
Single Family	Cooling	Ductless Mini Split Heat Pump (Ducted Forced Air)	household	New	107.29	15	\$3,517.21	1%	45%	\$0.08	3.54	3.67	7th Power Plan
Single Family	Heating	Ductless Mini Split Heat Pump (Ducted Forced Air)	household	New	3,170.89	15	\$3,517.21	1%	45%	\$0.08	63.23	62.58	7th Power Plan
Single Family	Cooling	Space Heating - Heat Recovery Ventilator	household	New	7.71	20	\$1,303.92	0%	0%	\$0.13	0.00	0.00	7th Power Plan
Single Family	Heating	Space Heating - Heat Recovery Ventilator	household	New	587.64	20	\$1,303.92	0%	0%	\$0.13	0.00	0.00	7th Power Plan
Single Family	Cooling	Furnace - Conversion to Air-Source Heat Pump	household	New	0.00	15	\$2,955.28	0%	0%	\$0.09	0.00	0.00	7th Power Plan
Single Family	Heating	Furnace - Conversion to Air-Source Heat Pump	household	New	2,470.28	15	\$2,955.28	0%	0%	\$0.09	0.00	0.00	7th Power Plan
Single Family	Cooling	Room AC - Removal of Second Unit	household	New	445.09	3	\$18.00	25%	50%	\$0.01	0.40	0.43	CA DEER
Single Family	Cooling	Central AC - Maintenance and Tune-Up	household	New	75.34	6	\$275.74	45%	75%	\$0.52	0.40	0.43	Illinois TRM
Single Family	Cooling	Central Heat Pump - Controls and Commissioning	household	New	0.61	15	\$581.99	25%	75%	\$0.07	0.03	0.03	7th Power Plan
Single Family	Heating	Central Heat Pump - Controls and Commissioning	household	New	627.46	15	\$581.99	25%	75%	\$0.07	32.16	32.04	7th Power Plan
Single Family	Cooling	Ceiling Fan - ENERGY STAR	ceiling fans	New	13.53	10	\$47.23	50%	75%	\$0.34	0.78	0.82	ENERGY STAR
Single Family	Cooling	Whole-House Fan - Installation	household	New	51.09	20	\$714.44	15%	40%	\$0.88	1.84	1.95	California Public Utilities Commission
Single Family	Cooling	Thermostat - WiFi/Interactive	household	New	117.35	10	\$256.67	5%	75%	\$0.05	13.71	14.26	7th Power Plan
Single Family	Heating	Thermostat - WiFi/Interactive	household	New	370.47	10	\$256.67	5%	75%	\$0.05	36.45	36.20	7th Power Plan
Single Family	Water Heating	Water Heater - Drainwater Heat Recovery	household	New	198.98	40	\$837.67	1%	10%	\$0.21	7.22	8.14	7th Power Plan
Single Family	Water Heating	Water Heater - Faucet Aerators	aerators	New	15.43	15	\$5.13	43%	50%	\$0.02	1.01	1.19	7th Power Plan

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Single Family	Water Heating	Water Heater - Low-Flow Showerheads	showerheads	New	22.81	10	\$26.56	65%	75%	\$0.11	0.68	0.85	7th Power Plan
Single Family	Water Heating	Water Heater - Pipe Insulation	feet pipe	New	21.88	15	\$3.26	12%	75%	\$0.01	14.79	18.14	Mid-Atlantic TRM
Single Family	Water Heating	Water Heater - Desuperheater	household	New	1,216.78	20	\$1,136.89	0%	0%	\$0.06	1.31	1.47	RTF Workbook
Single Family	Water Heating	Water Heater - Temperature Setback	household	New	67.69	2	\$5.00	51%	75%	\$0.03	0.32	0.42	Illinois TRM
Single Family	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	showerheads	New	26.00	10	\$19.30	16%	45%	\$0.07	2.31	2.90	RTF Workbook
Single Family	Water Heating	Water Heater - Solar System	household	New	966.98	20	\$8,847.45	2%	30%	\$0.58	63.42	72.22	7th Power Plan
Single Family	Interior Lighting	Interior Lighting - Occupancy Sensors	occ sens	New	72.50	8	\$99.16	0%	5%	\$0.12	1.91	2.49	Pacific Gas and Electric Research
Single Family	Exterior Lighting	Exterior Lighting - Photosensor Control	ext fixt	New	13.54	15	\$10.19	3%	50%	\$0.05	7.66	11.68	Michigan Energy Measures Database
Single Family	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	ext fixt pv	New	10.14	3	\$28.00	1%	30%	\$0.55	0.32	0.84	AEG Research
Single Family	Exterior Lighting	Exterior Lighting - Timeclock Installation	ext fixt	New	10.39	10	\$19.15	0%	50%	\$0.14	4.88	8.05	Ontario Power TRM
Single Family	Appliances	Refrigerator - Decommissioning and Recycling	household	New	279.20	6	\$143.58	0%	75%	\$0.12	12.71	13.72	PacifiCorp '13-'14 Evaluation
Single Family	Appliances	Freezer - Decommissioning and Recycling	household	New	272.31	5	\$143.58	0%	50%	\$0.14	10.81	11.68	PacifiCorp '13-'14 Evaluation
Single Family	Electronics	Advanced Power Strips - Tier 1	smart strip	New	32.93	5	\$15.83	8%	25%	\$0.09	3.49	3.19	7th Power Plan
Single Family	Electronics	Advanced Power Strips - Tier 2	smart strip	New	204.86	5	\$50.49	8%	25%	\$0.04	21.70	19.88	7th Power Plan
Single Family	Miscellaneous	Pool Pump - Timer	household	New	476.12	10	\$85.22	1%	75%	\$0.02	6.52	6.61	Ontario Power TRM
Single Family	Miscellaneous	Pool Heater - Solar Water Heating System	household	New	1,844.56	20	\$3,767.92	0%	30%	\$0.14	0.44	0.44	AEG Research
Single Family	Cooling	ENERGY STAR Home Design	household	New	105.79	20	\$4,253.40	15%	75%	\$0.16	17.41	17.65	RTF Workbook
Single Family	Heating	ENERGY STAR Home Design	household	New	636.84	20	\$4,253.40	15%	75%	\$0.16	88.21	86.66	RTF Workbook
Single Family	Water Heating	ENERGY STAR Home Design	household	New	407.63	20	\$4,253.40	15%	75%	\$0.16	88.39	99.95	RTF Workbook

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Single Family	Interior Lighting	ENERGY STAR Home Design	household	New	334.81	20	\$4,253.40	15%	75%	\$0.16	143.60	154.09	RTF Workbook
Single Family	Cooling	Behavioral Programs	household	New	11.23	1	\$9.30	0%	40%	\$0.05	0.97	1.08	AEG Research
Single Family	Heating	Behavioral Programs	household	New	27.72	1	\$9.30	0%	40%	\$0.05	2.45	2.80	AEG Research
Single Family	Water Heating	Behavioral Programs	household	New	28.49	1	\$9.30	0%	40%	\$0.05	2.08	2.97	AEG Research
Single Family	Interior Lighting	Behavioral Programs	household	New	16.51	1	\$9.30	0%	40%	\$0.05	1.18	2.27	AEG Research
Single Family	Exterior Lighting	Behavioral Programs	household	New	3.92	1	\$9.30	0%	40%	\$0.05	0.25	0.73	AEG Research
Single Family	Appliances	Behavioral Programs	household	New	46.98	1	\$9.30	0%	40%	\$0.05	4.06	4.34	AEG Research
Single Family	Electronics	Behavioral Programs	household	New	32.77	1	\$9.30	0%	40%	\$0.05	3.12	2.91	AEG Research
Single Family	Miscellaneous	Behavioral Programs	household	New	21.57	1	\$9.30	0%	40%	\$0.05	2.04	1.86	AEG Research
Single Family	Interior Lighting	Interior Lighting - General Service CFLs	GSL lamp	New	5.12	9	-\$0.13	0%	51%	\$0.00	7.92	18.66	RTF Workbook
Single Family	Interior Lighting	Interior Lighting - Exempted CFLs	Exempt lamp	New	14.07	5	-\$2.74	0%	51%	-\$0.01	12.65	16.51	RTF Workbook
Multifamily	Cooling	Insulation - Ceiling Installation	sqft roof - mf	Existing	0.29	45	\$0.75	14%	38%	\$0.04	39.66	44.22	7th Power Plan
Multifamily	Heating	Insulation - Ceiling Installation	sqft roof - mf	Existing	0.63	45	\$0.75	14%	38%	\$0.04	228.76	229.21	7th Power Plan
Multifamily	Cooling	Insulation - Ceiling Upgrade	sqft roof - mf	Existing	0.04	45	\$1.01	14%	38%	\$0.19	4.31	6.05	7th Power Plan
Multifamily	Heating	Insulation - Ceiling Upgrade	sqft roof - mf	Existing	0.21	45	\$1.01	14%	38%	\$0.19	74.80	80.21	7th Power Plan
Multifamily	Cooling	Insulation - Radiant Barrier	sqft roof - mf	Existing	0.16	15	\$0.67	4%	19%	\$0.08	11.76	16.59	AEG Research
Multifamily	Heating	Insulation - Radiant Barrier	sqft roof - mf	Existing	0.42	15	\$0.67	4%	19%	\$0.08	90.32	98.02	AEG Research
Multifamily	Cooling	Insulation - Wall Cavity Installation	sqft wall	Existing	0.03	45	\$1.06	40%	40%	\$0.04	0.00	0.00	7th Power Plan
Multifamily	Heating	Insulation - Wall Cavity Installation	sqft wall	Existing	1.26	45	\$1.06	40%	40%	\$0.04	0.00	0.00	7th Power Plan
Multifamily	Cooling	Insulation - Wall Sheathing	sqft wall	Existing	0.02	20	\$0.93	15%	15%	\$0.38	0.00	0.00	AEG-BEST
Multifamily	Heating	Insulation - Wall Sheathing	sqft wall	Existing	0.12	20	\$0.93	15%	15%	\$0.38	0.00	0.00	AEG-BEST
Multifamily	Cooling	Insulation - Floor Installation	sqft floor cs - mh	Existing	-0.02	45	\$1.01	14%	60%	\$0.07	-4.36	-6.13	7th Power Plan

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Multifamily	Heating	Insulation - Floor Installation	sqft floor cs - mh	Existing	0.73	45	\$1.01	14%	60%	\$0.07	511.47	520.18	7th Power Plan
Multifamily	Cooling	Insulation - Floor Upgrade	sqft floor cs - mh	Existing	0.00	25	\$3.39	0%	0%	\$5.03	0.00	0.00	7th Power Plan
Multifamily	Heating	Insulation - Floor Upgrade	sqft floor cs - mh	Existing	0.03	25	\$3.39	0%	0%	\$5.03	0.00	0.00	7th Power Plan
Multifamily	Cooling	Insulation - Foundation	household	Existing	-13.60	70	\$1,241.19	0%	0%	\$0.55	0.00	0.00	RTF Workbook
Multifamily	Heating	Insulation - Foundation	household	Existing	109.52	70	\$1,241.19	0%	0%	\$0.55	0.00	0.00	RTF Workbook
Multifamily	Cooling	Insulation - Ducting	household	Existing	10.14	18	\$528.00	3%	60%	\$0.88	2.01	3.17	AEG-BEST
Multifamily	Heating	Insulation - Ducting	household	Existing	20.53	18	\$528.00	3%	60%	\$0.88	8.57	11.40	AEG-BEST
Multifamily	Cooling	Ducting - Repair and Sealing	household	Existing	23.66	20	\$384.79	31%	75%	\$0.09	3.91	5.41	7th Power Plan
Multifamily	Heating	Ducting - Repair and Sealing	household	Existing	229.40	20	\$384.79	31%	75%	\$0.09	82.59	89.27	7th Power Plan
Multifamily	Cooling	Building Shell - Infiltration Control	sqft home	Existing	0.00	15	\$0.68	50%	75%	\$0.23	1.10	1.63	7th Power Plan
Multifamily	Heating	Building Shell - Infiltration Control	sqft home	Existing	0.19	15	\$0.68	50%	75%	\$0.23	133.51	154.14	7th Power Plan
Multifamily	Cooling	Windows - High Efficiency/ENERGY STAR	sqft window	Existing	0.49	45	\$18.29	27%	75%	\$0.25	25.07	35.69	7th Power Plan
Multifamily	Heating	Windows - High Efficiency/ENERGY STAR	sqft window	Existing	2.85	45	\$18.29	27%	75%	\$0.25	428.56	468.42	7th Power Plan
Multifamily	Cooling	Windows - Install Reflective Film	sqft window	Existing	0.03	45	\$5.61	34%	75%	\$0.15	1.54	2.15	7th Power Plan
Multifamily	Heating	Windows - Install Reflective Film	sqft window	Existing	1.76	45	\$5.61	34%	75%	\$0.15	229.64	242.07	7th Power Plan
Multifamily	Cooling	Doors - Storm and Thermal	household	Existing	4.13	20	\$682.67	70%	80%	\$1.39	0.41	0.65	AEG-BEST
Multifamily	Heating	Doors - Storm and Thermal	household	Existing	19.76	20	\$682.67	70%	80%	\$1.39	5.54	7.35	AEG-BEST
Multifamily	Cooling	Ductless Mini Split Heat Pump (Zonal)	household	Existing	108.24	15	\$3,448.86	1%	75%	\$0.41	53.97	76.71	7th Power Plan
Multifamily	Heating	Ductless Mini Split Heat Pump (Zonal)	household	Existing	418.47	15	\$3,448.86	1%	75%	\$0.41	708.08	806.12	7th Power Plan
Multifamily	Cooling	Ductless Mini Split Heat Pump (Ducted Forced Air)	household	Existing	46.12	15	\$3,517.21	1%	45%	\$0.31	5.17	7.01	7th Power Plan
Multifamily	Heating	Ductless Mini Split Heat Pump (Ducted Forced Air)	household	Existing	689.06	15	\$3,517.21	1%	45%	\$0.31	199.36	223.16	7th Power Plan
Multifamily	Cooling	Space Heating - Heat Recovery Ventilator	household	Existing	3.24	20	\$1,303.92	0%	0%	\$0.36	0.00	0.00	7th Power Plan

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Multifamily	Heating	Space Heating - Heat Recovery Ventilator	household	Existing	195.78	20	\$1,303.92	0%	0%	\$0.36	0.00	0.00	7th Power Plan
Multifamily	Cooling	Furnace - Conversion to Air-Source Heat Pump	household	Existing	0.00	15	\$2,955.28	0%	0%	\$0.35	0.00	0.00	7th Power Plan
Multifamily	Heating	Furnace - Conversion to Air-Source Heat Pump	household	Existing	570.25	15	\$2,955.28	0%	0%	\$0.35	0.00	0.00	7th Power Plan
Multifamily	Cooling	Room AC - Removal of Second Unit	household	Existing	647.01	3	\$18.00	0%	50%	\$0.01	255.43	289.85	CA DEER
Multifamily	Cooling	Central AC - Maintenance and Tune-Up	household	Existing	31.01	6	\$275.74	1%	75%	\$0.98	5.47	7.18	Illinois TRM
Multifamily	Cooling	Central Heat Pump - Controls and Commissioning	household	Existing	0.24	15	\$581.99	65%	75%	\$0.26	0.00	0.00	7th Power Plan
Multifamily	Heating	Central Heat Pump - Controls and Commissioning	household	Existing	145.30	15	\$581.99	65%	75%	\$0.26	1.82	2.10	7th Power Plan
Multifamily	Cooling	Ceiling Fan - ENERGY STAR	ceiling fans	Existing	7.35	10	\$47.23	40%	75%	\$0.51	5.24	6.71	ENERGY STAR
Multifamily	Cooling	Whole-House Fan - Installation	household	Existing	20.50	20	\$714.44	2%	10%	\$1.70	0.60	0.95	California Public Utilities Commission
Multifamily	Cooling	Thermostat - WiFi/Interactive	household	Existing	45.24	10	\$256.67	5%	50%	\$0.14	21.54	29.18	7th Power Plan
Multifamily	Heating	Thermostat - WiFi/Interactive	household	Existing	114.51	10	\$256.67	5%	50%	\$0.14	161.34	176.40	7th Power Plan
Multifamily	Water Heating	Water Heater - Drainwater Heat Recovery	household	Existing	176.14	40	\$837.67	0%	0%	\$0.24	0.00	0.00	7th Power Plan
Multifamily	Water Heating	Water Heater - Faucet Aerators	aerators	Existing	20.54	15	\$5.13	13%	50%	\$0.02	42.73	52.58	7th Power Plan
Multifamily	Water Heating	Water Heater - Low-Flow Showerheads	showerheads	Existing	27.82	10	\$26.56	19%	75%	\$0.09	57.40	75.81	7th Power Plan
Multifamily	Water Heating	Water Heater - Pipe Insulation	feet pipe	Existing	19.59	15	\$3.26	12%	75%	\$0.01	176.37	228.33	Mid-Atlantic TRM
Multifamily	Water Heating	Water Heater - Desuperheater	household	Existing	1,149.09	20	\$1,136.89	0%	0%	\$0.06	0.00	0.00	RTF Workbook
Multifamily	Water Heating	Water Heater - Temperature Setback	household	Existing	59.61	2	\$5.00	41%	75%	\$0.03	57.87	76.76	Illinois TRM
Multifamily	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	showerheads	Existing	26.87	10	\$19.30	16%	45%	\$0.07	29.17	38.44	RTF Workbook

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Multifamily	Water Heating	Water Heater - Solar System	household	Existing	846.65	20	\$8,847.45	1%	10%	\$0.66	134.05	165.61	7th Power Plan
Multifamily	Interior Lighting	Interior Lighting - Occupancy Sensors	occ sens	Existing	72.20	8	\$99.16	0%	10%	\$0.14	21.57	38.50	Pacific Gas and Electric Research
Multifamily	Exterior Lighting	Exterior Lighting - Photosensor Control	ext fixt	Existing	14.56	15	\$10.19	1%	50%	\$0.05	20.72	42.79	Michigan Energy Measures Database
Multifamily	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	ext fixt pv	Existing	19.28	3	\$28.00	1%	30%	\$0.30	7.58	17.44	AEG Research
Multifamily	Exterior Lighting	Exterior Lighting - Timeclock Installation	ext fixt	Existing	10.22	10	\$19.15	1%	50%	\$0.15	14.05	30.86	Ontario Power TRM
Multifamily	Appliances	Refrigerator - Decommissioning and Recycling	household	Existing	297.07	6	\$143.58	0%	75%	\$0.12	68.85	76.94	PacificCorp '13-'14 Evaluation
Multifamily	Appliances	Freezer - Decommissioning and Recycling	household	Existing	289.56	5	\$143.58	0%	50%	\$0.14	92.39	104.17	PacificCorp '13-'14 Evaluation
Multifamily	Electronics	Advanced Power Strips - Tier 1	smart strip	Existing	28.41	5	\$15.83	8%	25%	\$0.10	42.51	41.92	7th Power Plan
Multifamily	Electronics	Advanced Power Strips - Tier 2	smart strip	Existing	181.11	5	\$50.49	8%	25%	\$0.05	278.86	266.87	7th Power Plan
Multifamily	Miscellaneous	Pool Pump - Timer	household	Existing	0.00	10	\$85.22	1%	75%	\$0.00	0.00	0.00	Ontario Power TRM
Multifamily	Miscellaneous	Pool Heater - Solar Water Heating System	household	Existing	0.00	20	\$3,767.92	0%	30%	\$0.00	0.00	0.00	AEG Research
Multifamily	Cooling	ENERGY STAR Home Design	household	Existing	38.48	20	\$4,253.40	0%	0%	\$0.34	0.00	0.00	RTF Workbook
Multifamily	Heating	ENERGY STAR Home Design	household	Existing	177.52	20	\$4,253.40	0%	0%	\$0.34	0.00	0.00	RTF Workbook
Multifamily	Water Heating	ENERGY STAR Home Design	household	Existing	360.58	20	\$4,253.40	0%	0%	\$0.34	0.00	0.00	RTF Workbook
Multifamily	Interior Lighting	ENERGY STAR Home Design	household	Existing	126.95	20	\$4,253.40	0%	0%	\$0.34	0.00	0.00	RTF Workbook
Multifamily	Cooling	Behavioral Programs	household	Existing	4.81	1	\$9.30	0%	40%	\$0.05	6.22	12.67	AEG Research
Multifamily	Heating	Behavioral Programs	household	Existing	29.04	1	\$9.30	0%	40%	\$0.05	46.73	66.16	AEG Research
Multifamily	Water Heating	Behavioral Programs	household	Existing	51.39	1	\$9.30	0%	40%	\$0.05	73.04	106.66	AEG Research
Multifamily	Interior Lighting	Behavioral Programs	household	Existing	8.63	1	\$9.30	0%	40%	\$0.05	10.71	26.71	AEG Research
Multifamily	Exterior Lighting	Behavioral Programs	household	Existing	1.76	1	\$9.30	0%	40%	\$0.05	1.84	6.65	AEG Research
Multifamily	Appliances	Behavioral Programs	household	Existing	44.17	1	\$9.30	0%	40%	\$0.05	73.20	83.17	AEG Research
Multifamily	Electronics	Behavioral Programs	household	Existing	27.42	1	\$9.30	0%	40%	\$0.05	48.56	51.24	AEG Research

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Multifamily	Miscellaneous	Behavioral Programs	household	Existing	19.64	1	\$9.30	0%	40%	\$0.05	38.05	32.00	AEG Research
Multifamily	Interior Lighting	Interior Lighting - General Service CFLs	GSL lamp	Existing	5.64	9	-\$0.13	0%	44%	\$0.00	28.84	78.64	RTF Workbook
Multifamily	Interior Lighting	Interior Lighting - Exempted CFLs	Exempt lamp	Existing	15.53	5	-\$2.74	0%	44%	-\$0.01	10.94	14.25	RTF Workbook
Multifamily	Cooling	Insulation - Ceiling Installation	sqft roof - mf	New	0.32	45	\$0.75	9%	38%	\$0.04	2.72	2.81	7th Power Plan
Multifamily	Heating	Insulation - Ceiling Installation	sqft roof - mf	New	0.66	45	\$0.75	9%	38%	\$0.04	0.00	15.37	7th Power Plan
Multifamily	Cooling	Insulation - Ceiling Upgrade	sqft roof - mf	New	0.05	45	\$1.01	9%	38%	\$0.18	0.41	0.42	7th Power Plan
Multifamily	Heating	Insulation - Ceiling Upgrade	sqft roof - mf	New	0.24	45	\$1.01	9%	38%	\$0.18	5.56	5.53	7th Power Plan
Multifamily	Cooling	Insulation - Radiant Barrier	sqft roof - mf	New	0.22	15	\$0.67	1%	5%	\$0.08	0.23	0.24	AEG Research
Multifamily	Heating	Insulation - Radiant Barrier	sqft roof - mf	New	0.47	15	\$0.67	1%	5%	\$0.08	1.39	1.38	AEG Research
Multifamily	Cooling	Insulation - Wall Cavity Installation	sqft wall	New	0.03	45	\$1.06	80%	80%	\$0.04	0.00	0.00	7th Power Plan
Multifamily	Heating	Insulation - Wall Cavity Installation	sqft wall	New	1.33	45	\$1.06	80%	80%	\$0.04	0.00	0.00	7th Power Plan
Multifamily	Cooling	Insulation - Wall Sheathing	sqft wall	New	0.03	20	\$0.93	15%	20%	\$0.36	0.09	0.10	AEG-BEST
Multifamily	Heating	Insulation - Wall Sheathing	sqft wall	New	0.14	20	\$0.93	15%	20%	\$0.36	1.28	1.26	AEG-BEST
Multifamily	Cooling	Insulation - Floor Installation	sqft floor cs - mh	New	-0.03	45	\$1.01	31%	75%	\$0.07	-0.33	-0.34	7th Power Plan
Multifamily	Heating	Insulation - Floor Installation	sqft floor cs - mh	New	0.77	45	\$1.01	31%	75%	\$0.07	27.72	27.72	7th Power Plan
Multifamily	Cooling	Insulation - Floor Upgrade	sqft floor cs - mh	New	0.00	25	\$3.39	0%	0%	\$4.79	0.00	0.00	7th Power Plan
Multifamily	Heating	Insulation - Floor Upgrade	sqft floor cs - mh	New	0.04	25	\$3.39	0%	0%	\$4.79	0.00	0.00	7th Power Plan
Multifamily	Cooling	Insulation - Foundation	household	New	-18.61	70	\$1,241.19	0%	0%	\$0.53	0.00	0.00	RTF Workbook
Multifamily	Heating	Insulation - Foundation	household	New	128.48	70	\$1,241.19	0%	0%	\$0.53	0.00	0.00	RTF Workbook
Multifamily	Cooling	Insulation - Ducting	household	New	12.47	18	\$528.00	15%	80%	\$0.91	0.28	0.30	AEG-BEST
Multifamily	Heating	Insulation - Ducting	household	New	23.94	18	\$528.00	15%	80%	\$0.91	1.26	1.29	AEG-BEST
Multifamily	Cooling	Ducting - Repair and Sealing	household	New	30.60	20	\$384.79	31%	75%	\$0.09	0.48	0.49	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Multifamily	Heating	Ducting - Repair and Sealing	household	New	267.60	20	\$384.79	31%	75%	\$0.09	9.70	9.61	7th Power Plan
Multifamily	Cooling	Building Shell - Infiltration Control	sqft home	New	0.01	15	\$0.68	73%	75%	\$0.21	0.01	0.01	7th Power Plan
Multifamily	Heating	Building Shell - Infiltration Control	sqft home	New	0.23	15	\$0.68	73%	75%	\$0.21	0.80	0.79	7th Power Plan
Multifamily	Cooling	Windows - High Efficiency/ENERGY STAR	sqft window	New	0.66	45	\$18.29	37%	75%	\$0.24	1.59	1.63	7th Power Plan
Multifamily	Heating	Windows - High Efficiency/ENERGY STAR	sqft window	New	3.23	45	\$18.29	37%	75%	\$0.24	21.26	21.08	7th Power Plan
Multifamily	Cooling	Windows - Install Reflective Film	sqft window	New	0.05	45	\$5.61	53%	75%	\$0.15	0.07	0.07	7th Power Plan
Multifamily	Heating	Windows - Install Reflective Film	sqft window	New	1.92	45	\$5.61	53%	75%	\$0.15	7.41	7.38	7th Power Plan
Multifamily	Cooling	Doors - Storm and Thermal	household	New	2.32	20	\$682.67	80%	80%	\$2.54	0.00	0.00	AEG-BEST
Multifamily	Heating	Doors - Storm and Thermal	household	New	13.34	20	\$682.67	80%	80%	\$2.54	0.00	0.00	AEG-BEST
Multifamily	Cooling	Ductless Mini Split Heat Pump (Zonal)	household	New	136.37	15	\$3,448.86	6%	75%	\$0.41	3.34	3.41	7th Power Plan
Multifamily	Heating	Ductless Mini Split Heat Pump (Zonal)	household	New	479.74	15	\$3,448.86	6%	75%	\$0.41	38.83	37.65	7th Power Plan
Multifamily	Cooling	Ductless Mini Split Heat Pump (Ducted Forced Air)	household	New	61.00	15	\$3,517.21	6%	45%	\$0.31	0.98	1.00	7th Power Plan
Multifamily	Heating	Ductless Mini Split Heat Pump (Ducted Forced Air)	household	New	791.37	15	\$3,517.21	6%	45%	\$0.31	30.09	29.26	7th Power Plan
Multifamily	Cooling	Space Heating - Heat Recovery Ventilator	household	New	4.33	20	\$1,303.92	0%	0%	\$0.33	0.00	0.00	7th Power Plan
Multifamily	Heating	Space Heating - Heat Recovery Ventilator	household	New	245.78	20	\$1,303.92	0%	0%	\$0.33	0.00	0.00	7th Power Plan
Multifamily	Cooling	Furnace - Conversion to Air-Source Heat Pump	household	New	0.00	15	\$2,955.28	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Multifamily	Heating	Furnace - Conversion to Air-Source Heat Pump	household	New	0.00	15	\$2,955.28	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Multifamily	Cooling	Room AC - Removal of Second Unit	household	New	654.64	3	\$18.00	25%	50%	\$0.01	0.97	1.02	CA DEER
Multifamily	Cooling	Central AC - Maintenance and Tune-Up	household	New	42.16	6	\$275.74	45%	75%	\$0.92	0.12	0.13	Illinois TRM

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Multifamily	Cooling	Central Heat Pump - Controls and Commissioning	household	New	0.32	15	\$581.99	25%	75%	\$0.00	0.00	0.00	7th Power Plan
Multifamily	Heating	Central Heat Pump - Controls and Commissioning	household	New	0.00	15	\$581.99	25%	75%	\$0.00	0.00	0.00	7th Power Plan
Multifamily	Cooling	Ceiling Fan - ENERGY STAR	ceiling fans	New	19.88	10	\$47.23	50%	75%	\$0.24	0.44	0.45	ENERGY STAR
Multifamily	Cooling	Whole-House Fan - Installation	household	New	28.14	20	\$714.44	2%	10%	\$1.58	0.08	0.09	California Public Utilities Commission
Multifamily	Cooling	Thermostat - WiFi/Interactive	household	New	61.75	10	\$256.67	5%	50%	\$0.13	1.84	1.88	7th Power Plan
Multifamily	Heating	Thermostat - WiFi/Interactive	household	New	134.34	10	\$256.67	5%	50%	\$0.13	11.05	10.81	7th Power Plan
Multifamily	Water Heating	Water Heater - Drainwater Heat Recovery	household	New	167.27	40	\$837.67	0%	0%	\$0.25	0.00	0.00	7th Power Plan
Multifamily	Water Heating	Water Heater - Faucet Aerators	aerators	New	19.49	15	\$5.13	9%	50%	\$0.02	1.73	2.04	7th Power Plan
Multifamily	Water Heating	Water Heater - Low-Flow Showerheads	showerheads	New	26.46	10	\$26.56	14%	75%	\$0.10	1.18	1.49	7th Power Plan
Multifamily	Water Heating	Water Heater - Pipe Insulation	feet pipe	New	18.42	15	\$3.26	12%	75%	\$0.01	4.12	5.09	Mid-Atlantic TRM
Multifamily	Water Heating	Water Heater - Desuperheater	household	New	1,022.45	20	\$1,136.89	0%	0%	\$0.07	0.00	0.00	RTF Workbook
Multifamily	Water Heating	Water Heater - Temperature Setback	household	New	56.86	2	\$5.00	51%	75%	\$0.03	0.10	0.13	Illinois TRM
Multifamily	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	showerheads	New	26.67	10	\$19.30	16%	45%	\$0.07	0.57	0.72	RTF Workbook
Multifamily	Water Heating	Water Heater - Solar System	household	New	812.36	20	\$8,847.45	1%	10%	\$0.68	5.37	6.15	7th Power Plan
Multifamily	Interior Lighting	Interior Lighting - Occupancy Sensors	occ sens	New	60.84	8	\$99.16	2%	10%	\$0.15	0.41	0.65	Pacific Gas and Electric Research
Multifamily	Exterior Lighting	Exterior Lighting - Photosensor Control	ext fixt	New	15.42	15	\$10.19	0%	50%	\$0.04	1.21	1.89	Michigan Energy Measures Database
Multifamily	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	ext fixt pv	New	10.23	3	\$28.00	1%	30%	\$0.55	0.04	0.12	AEG Research
Multifamily	Exterior Lighting	Exterior Lighting - Timeclock Installation	ext fixt	New	11.09	10	\$19.15	0%	50%	\$0.13	0.69	1.16	Ontario Power TRM

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Multifamily	Appliances	Refrigerator - Decommissioning and Recycling	household	New	279.08	6	\$143.58	0%	75%	\$0.12	4.90	5.31	PacifiCorp '13-'14 Evaluation
Multifamily	Appliances	Freezer - Decommissioning and Recycling	household	New	271.60	5	\$143.58	0%	50%	\$0.14	0.22	0.24	PacifiCorp '13-'14 Evaluation
Multifamily	Electronics	Advanced Power Strips - Tier 1	smart strip	New	34.65	5	\$15.83	8%	25%	\$0.08	1.26	1.15	7th Power Plan
Multifamily	Electronics	Advanced Power Strips - Tier 2	smart strip	New	216.11	5	\$50.49	8%	25%	\$0.04	7.83	7.21	7th Power Plan
Multifamily	Miscellaneous	Pool Pump - Timer	household	New	0.00	10	\$85.22	1%	75%	\$0.00	0.00	0.00	Ontario Power TRM
Multifamily	Miscellaneous	Pool Heater - Solar Water Heating System	household	New	0.00	20	\$3,767.92	0%	30%	\$0.00	0.00	0.00	AEG Research
Multifamily	Cooling	ENERGY STAR Home Design	household	New	55.03	20	\$4,253.40	15%	75%	\$0.32	3.54	3.55	RTF Workbook
Multifamily	Heating	ENERGY STAR Home Design	household	New	227.30	20	\$4,253.40	15%	75%	\$0.32	41.15	40.09	RTF Workbook
Multifamily	Water Heating	ENERGY STAR Home Design	household	New	347.29	20	\$4,253.40	15%	75%	\$0.32	24.69	27.87	RTF Workbook
Multifamily	Interior Lighting	ENERGY STAR Home Design	household	New	140.26	20	\$4,253.40	15%	75%	\$0.32	18.11	20.70	RTF Workbook
Multifamily	Cooling	Behavioral Programs	household	New	8.39	1	\$9.30	0%	40%	\$0.05	0.27	0.30	AEG Research
Multifamily	Heating	Behavioral Programs	household	New	46.94	1	\$9.30	0%	40%	\$0.05	1.60	1.71	AEG Research
Multifamily	Water Heating	Behavioral Programs	household	New	29.30	1	\$9.30	0%	40%	\$0.05	0.79	1.12	AEG Research
Multifamily	Interior Lighting	Behavioral Programs	household	New	8.73	1	\$9.30	0%	40%	\$0.05	0.20	0.55	AEG Research
Multifamily	Exterior Lighting	Behavioral Programs	household	New	2.15	1	\$9.30	0%	40%	\$0.05	0.05	0.15	AEG Research
Multifamily	Appliances	Behavioral Programs	household	New	46.72	1	\$9.30	0%	40%	\$0.05	1.49	1.59	AEG Research
Multifamily	Electronics	Behavioral Programs	household	New	33.13	1	\$9.30	0%	40%	\$0.05	1.16	1.09	AEG Research
Multifamily	Miscellaneous	Behavioral Programs	household	New	19.15	1	\$9.30	0%	40%	\$0.05	0.69	0.58	AEG Research
Multifamily	Interior Lighting	Interior Lighting - General Service CFLs	GSL lamp	New	5.14	9	-\$0.13	0%	44%	\$0.00	1.71	4.39	RTF Workbook
Multifamily	Interior Lighting	Interior Lighting - Exempted CFLs	Exempt lamp	New	14.85	5	-\$2.74	0%	44%	-\$0.01	0.46	0.65	RTF Workbook
Mobile Home	Cooling	Insulation - Ceiling Installation	sqft roof	Existing	0.17	25	\$2.16	10%	38%	\$0.27	68.96	85.91	7th Power Plan
Mobile Home	Heating	Insulation - Ceiling Installation	sqft roof	Existing	0.20	25	\$2.16	10%	38%	\$0.27	106.42	148.61	7th Power Plan

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Mobile Home	Cooling	Insulation - Ceiling Upgrade	sqft roof	Existing	0.03	25	\$2.16	10%	38%	\$0.96	10.05	12.92	7th Power Plan
Mobile Home	Heating	Insulation - Ceiling Upgrade	sqft roof	Existing	0.08	25	\$2.16	10%	38%	\$0.96	39.61	55.88	7th Power Plan
Mobile Home	Cooling	Insulation - Radiant Barrier	sqft roof	Existing	0.13	15	\$0.67	4%	19%	\$0.05	29.58	33.79	AEG Research
Mobile Home	Heating	Insulation - Radiant Barrier	sqft roof	Existing	0.89	15	\$0.67	4%	19%	\$0.05	293.96	310.02	AEG Research
Mobile Home	Cooling	Insulation - Wall Cavity Installation	sqft wall	Existing	0.02	25	\$1.42	40%	40%	\$0.05	0.00	0.00	7th Power Plan
Mobile Home	Heating	Insulation - Wall Cavity Installation	sqft wall	Existing	1.53	25	\$1.42	40%	40%	\$0.05	0.00	0.00	7th Power Plan
Mobile Home	Cooling	Insulation - Wall Sheathing	sqft wall	Existing	0.01	20	\$0.93	15%	15%	\$0.24	0.00	0.00	AEG-BEST
Mobile Home	Heating	Insulation - Wall Sheathing	sqft wall	Existing	0.18	20	\$0.93	15%	15%	\$0.24	0.00	0.00	AEG-BEST
Mobile Home	Cooling	Insulation - Floor Installation	sqft floor cs	Existing	-0.03	25	\$3.39	7%	30%	\$0.59	-4.43	-5.69	7th Power Plan
Mobile Home	Heating	Insulation - Floor Installation	sqft floor cs	Existing	0.27	25	\$3.39	7%	30%	\$0.59	60.58	85.14	7th Power Plan
Mobile Home	Cooling	Insulation - Floor Upgrade	sqft floor cs	Existing	0.00	25	\$3.39	7%	30%	\$1.26	0.00	0.00	7th Power Plan
Mobile Home	Heating	Insulation - Floor Upgrade	sqft floor cs	Existing	0.12	25	\$3.39	7%	30%	\$1.26	25.83	36.40	7th Power Plan
Mobile Home	Cooling	Insulation - Foundation	household	Existing	-18.75	70	\$1,241.19	0%	0%	\$0.16	0.00	0.00	RTF Workbook
Mobile Home	Heating	Insulation - Foundation	household	Existing	388.44	70	\$1,241.19	0%	0%	\$0.16	0.00	0.00	RTF Workbook
Mobile Home	Cooling	Insulation - Ducting	household	Existing	49.92	18	\$528.00	48%	60%	\$0.14	4.36	5.37	AEG-BEST
Mobile Home	Heating	Insulation - Ducting	household	Existing	160.11	18	\$528.00	48%	60%	\$0.14	39.27	51.34	AEG-BEST
Mobile Home	Cooling	Ducting - Repair and Sealing	household	Existing	67.93	20	\$769.57	30%	75%	\$0.04	23.81	26.61	7th Power Plan
Mobile Home	Heating	Ducting - Repair and Sealing	household	Existing	1,437.19	20	\$769.57	30%	75%	\$0.04	1,546.28	1,556.71	7th Power Plan
Mobile Home	Cooling	Building Shell - Infiltration Control	sqft home	Existing	0.00	25	\$3.18	66%	75%	\$0.99	0.86	1.11	7th Power Plan
Mobile Home	Heating	Building Shell - Infiltration Control	sqft home	Existing	0.14	25	\$3.18	66%	75%	\$0.99	45.09	63.73	7th Power Plan
Mobile Home	Cooling	Windows - High Efficiency/ENERGY STAR	sqft window	Existing	0.50	25	\$21.16	9%	75%	\$0.25	81.44	97.47	7th Power Plan
Mobile Home	Heating	Windows - High Efficiency/ENERGY STAR	sqft window	Existing	3.52	25	\$21.16	9%	75%	\$0.25	765.00	1,000.30	7th Power Plan
Mobile Home	Cooling	Windows - Install Reflective Film	sqft window	Existing	0.04	25	\$1.40	16%	75%	\$0.05	5.85	6.39	7th Power Plan

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Mobile Home	Heating	Windows - Install Reflective Film	sqft window	Existing	1.53	25	\$1.40	16%	75%	\$0.05	333.66	348.86	7th Power Plan
Mobile Home	Cooling	Doors - Storm and Thermal	household	Existing	7.40	20	\$682.67	60%	80%	\$0.43	2.94	3.75	AEG-BEST
Mobile Home	Heating	Doors - Storm and Thermal	household	Existing	71.11	20	\$682.67	60%	80%	\$0.43	37.30	52.34	AEG-BEST
Mobile Home	Cooling	Ductless Mini Split Heat Pump (Zonal)	household	Existing	62.38	15	\$3,448.86	0%	75%	\$0.16	34.43	41.06	7th Power Plan
Mobile Home	Heating	Ductless Mini Split Heat Pump (Zonal)	household	Existing	1,212.53	15	\$3,448.86	0%	75%	\$0.16	633.23	794.43	7th Power Plan
Mobile Home	Cooling	Ductless Mini Split Heat Pump (Ducted Forced Air)	household	Existing	94.58	15	\$3,517.21	0%	45%	\$0.05	11.38	13.05	7th Power Plan
Mobile Home	Heating	Ductless Mini Split Heat Pump (Ducted Forced Air)	household	Existing	5,179.83	15	\$3,517.21	0%	45%	\$0.05	4,200.10	4,385.97	7th Power Plan
Mobile Home	Cooling	Space Heating - Heat Recovery Ventilator	household	Existing	6.36	20	\$1,303.92	0%	0%	\$0.12	0.00	0.00	7th Power Plan
Mobile Home	Heating	Space Heating - Heat Recovery Ventilator	household	Existing	572.71	20	\$1,303.92	0%	0%	\$0.12	0.00	0.00	7th Power Plan
Mobile Home	Cooling	Furnace - Conversion to Air-Source Heat Pump	household	Existing	0.00	15	\$2,955.28	0%	0%	\$0.09	0.00	0.00	7th Power Plan
Mobile Home	Heating	Furnace - Conversion to Air-Source Heat Pump	household	Existing	2,415.23	15	\$2,955.28	0%	0%	\$0.09	0.00	0.00	7th Power Plan
Mobile Home	Cooling	Room AC - Removal of Second Unit	household	Existing	327.20	3	\$18.00	0%	50%	\$0.02	128.43	139.84	CA DEER
Mobile Home	Cooling	Central AC - Maintenance and Tune-Up	household	Existing	59.46	6	\$275.74	7%	75%	\$0.59	10.10	11.93	Illinois TRM
Mobile Home	Cooling	Central Heat Pump - Controls and Commissioning	household	Existing	-4.59	15	\$581.99	65%	75%	\$0.11	-0.22	-0.26	7th Power Plan
Mobile Home	Heating	Central Heat Pump - Controls and Commissioning	household	Existing	327.50	15	\$581.99	65%	75%	\$0.11	15.20	19.03	7th Power Plan
Mobile Home	Cooling	Ceiling Fan - ENERGY STAR	ceiling fans	Existing	8.57	10	\$47.23	40%	75%	\$0.48	11.90	13.79	ENERGY STAR
Mobile Home	Cooling	Whole-House Fan - Installation	household	Existing	39.26	20	\$714.44	15%	40%	\$1.03	7.00	9.26	California Public Utilities Commission
Mobile Home	Cooling	Thermostat - WiFi/Interactive	household	Existing	58.60	10	\$256.67	5%	75%	\$0.05	87.27	98.64	7th Power Plan
Mobile Home	Heating	Thermostat - WiFi/Interactive	household	Existing	338.41	10	\$256.67	5%	75%	\$0.05	671.51	805.41	7th Power Plan

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Mobile Home	Water Heating	Water Heater - Drainwater Heat Recovery	household	Existing	176.59	40	\$837.67	0%	0%	\$0.24	0.00	0.00	7th Power Plan
Mobile Home	Water Heating	Water Heater - Faucet Aerators	aerators	Existing	20.56	15	\$5.13	28%	50%	\$0.02	34.91	42.94	7th Power Plan
Mobile Home	Water Heating	Water Heater - Low-Flow Showerheads	showerheads	Existing	27.89	10	\$26.56	42%	75%	\$0.09	47.02	61.77	7th Power Plan
Mobile Home	Water Heating	Water Heater - Pipe Insulation	feet pipe	Existing	19.62	15	\$3.26	12%	75%	\$0.01	243.81	314.55	Mid-Atlantic TRM
Mobile Home	Water Heating	Water Heater - Desuperheater	household	Existing	1,152.01	20	\$1,136.89	0%	0%	\$0.06	0.00	0.00	RTF Workbook
Mobile Home	Water Heating	Water Heater - Temperature Setback	household	Existing	59.91	2	\$5.00	41%	75%	\$0.03	80.48	105.97	Illinois TRM
Mobile Home	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	showerheads	Existing	27.12	10	\$19.30	16%	45%	\$0.07	40.71	53.36	RTF Workbook
Mobile Home	Water Heating	Water Heater - Solar System	household	Existing	850.88	20	\$8,847.45	0%	20%	\$0.65	414.29	510.03	7th Power Plan
Mobile Home	Interior Lighting	Interior Lighting - Occupancy Sensors	occ sens	Existing	83.30	8	\$99.16	0%	10%	\$0.11	33.58	54.56	Pacific Gas and Electric Research
Mobile Home	Exterior Lighting	Exterior Lighting - Photosensor Control	ext fixt	Existing	15.32	15	\$10.19	7%	50%	\$0.04	26.70	55.66	Michigan Energy Measures Database
Mobile Home	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	ext fixt pv	Existing	18.76	3	\$28.00	1%	30%	\$0.30	10.23	23.90	AEG Research
Mobile Home	Exterior Lighting	Exterior Lighting - Timeclock Installation	ext fixt	Existing	9.98	10	\$19.15	0%	50%	\$0.15	19.28	42.82	Ontario Power TRM
Mobile Home	Appliances	Refrigerator - Decommissioning and Recycling	household	Existing	296.93	6	\$143.58	0%	75%	\$0.12	184.27	206.05	PacificCorp '13-'14 Evaluation
Mobile Home	Appliances	Freezer - Decommissioning and Recycling	household	Existing	288.52	5	\$143.58	0%	50%	\$0.14	386.87	437.50	PacificCorp '13-'14 Evaluation
Mobile Home	Electronics	Advanced Power Strips - Tier 1	smart strip	Existing	27.87	5	\$15.83	8%	25%	\$0.10	51.68	51.34	7th Power Plan
Mobile Home	Electronics	Advanced Power Strips - Tier 2	smart strip	Existing	177.52	5	\$50.49	8%	25%	\$0.05	338.52	326.52	7th Power Plan
Mobile Home	Miscellaneous	Pool Pump - Timer	household	Existing	449.44	10	\$85.22	1%	75%	\$0.02	24.14	24.81	Ontario Power TRM
Mobile Home	Miscellaneous	Pool Heater - Solar Water Heating System	household	Existing	0.00	20	\$3,767.92	0%	30%	\$0.00	0.00	0.00	AEG Research
Mobile Home	Cooling	ENERGY STAR Home Design	household	Existing	48.15	20	\$4,253.40	0%	0%	\$0.20	0.00	0.00	RTF Workbook

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Mobile Home	Heating	ENERGY STAR Home Design	household	Existing	551.58	20	\$4,253.40	0%	0%	\$0.20	0.00	0.00	RTF Workbook
Mobile Home	Water Heating	ENERGY STAR Home Design	household	Existing	357.84	20	\$4,253.40	0%	0%	\$0.20	0.00	0.00	RTF Workbook
Mobile Home	Interior Lighting	ENERGY STAR Home Design	household	Existing	190.59	20	\$4,253.40	0%	0%	\$0.20	0.00	0.00	RTF Workbook
Mobile Home	Cooling	Behavioral Programs	household	Existing	5.79	1	\$9.30	0%	40%	\$0.05	10.92	15.95	AEG Research
Mobile Home	Heating	Behavioral Programs	household	Existing	46.83	1	\$9.30	0%	40%	\$0.05	87.01	140.85	AEG Research
Mobile Home	Water Heating	Behavioral Programs	household	Existing	38.58	1	\$9.30	0%	40%	\$0.05	67.87	100.35	AEG Research
Mobile Home	Interior Lighting	Behavioral Programs	household	Existing	8.88	1	\$9.30	0%	40%	\$0.05	14.68	32.00	AEG Research
Mobile Home	Exterior Lighting	Behavioral Programs	household	Existing	1.22	1	\$9.30	0%	40%	\$0.05	1.57	5.81	AEG Research
Mobile Home	Appliances	Behavioral Programs	household	Existing	43.87	1	\$9.30	0%	40%	\$0.05	90.00	104.62	AEG Research
Mobile Home	Electronics	Behavioral Programs	household	Existing	18.86	1	\$9.30	0%	40%	\$0.05	41.38	44.61	AEG Research
Mobile Home	Miscellaneous	Behavioral Programs	household	Existing	17.67	1	\$9.30	0%	40%	\$0.05	41.60	37.10	AEG Research
Mobile Home	Interior Lighting	Interior Lighting - General Service CFLs	GSL lamp	Existing	7.50	9	-\$0.13	0%	35%	\$0.00	35.32	93.22	RTF Workbook
Mobile Home	Interior Lighting	Interior Lighting - Exempted CFLs	Exempt lamp	Existing	20.95	5	-\$2.74	0%	35%	-\$0.01	43.28	55.86	RTF Workbook
Mobile Home	Cooling	Insulation - Ceiling Installation	sqft roof	New	0.21	25	\$2.16	29%	38%	\$0.26	1.08	1.14	7th Power Plan
Mobile Home	Heating	Insulation - Ceiling Installation	sqft roof	New	0.24	25	\$2.16	29%	38%	\$0.26	2.03	2.04	7th Power Plan
Mobile Home	Cooling	Insulation - Ceiling Upgrade	sqft roof	New	0.03	25	\$2.16	29%	38%	\$0.93	0.16	0.17	7th Power Plan
Mobile Home	Heating	Insulation - Ceiling Upgrade	sqft roof	New	0.09	25	\$2.16	29%	38%	\$0.93	0.72	0.75	7th Power Plan
Mobile Home	Cooling	Insulation - Radiant Barrier	sqft roof	New	0.15	15	\$0.67	1%	5%	\$0.05	0.31	0.32	AEG Research
Mobile Home	Heating	Insulation - Radiant Barrier	sqft roof	New	0.91	15	\$0.67	1%	5%	\$0.05	3.05	3.04	AEG Research
Mobile Home	Cooling	Insulation - Wall Cavity Installation	sqft wall	New	0.03	25	\$1.42	68%	80%	\$0.05	0.36	0.38	7th Power Plan
Mobile Home	Heating	Insulation - Wall Cavity Installation	sqft wall	New	1.59	25	\$1.42	68%	80%	\$0.05	35.27	35.24	7th Power Plan
Mobile Home	Cooling	Insulation - Wall Sheathing	sqft wall	New	0.01	20	\$0.93	15%	20%	\$0.24	0.08	0.09	AEG-BEST
Mobile Home	Heating	Insulation - Wall Sheathing	sqft wall	New	0.21	20	\$0.93	15%	20%	\$0.24	1.94	1.96	AEG-BEST
Mobile Home	Cooling	Insulation - Floor Installation	sqft floor cs	New	-0.03	25	\$3.39	33%	38%	\$0.59	-0.04	-0.04	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Mobile Home	Heating	Insulation - Floor Installation	sqft floor cs	New	0.32	25	\$3.39	33%	38%	\$0.59	0.61	0.63	7th Power Plan
Mobile Home	Cooling	Insulation - Floor Upgrade	sqft floor cs	New	0.00	25	\$3.39	33%	38%	\$1.25	0.00	0.00	7th Power Plan
Mobile Home	Heating	Insulation - Floor Upgrade	sqft floor cs	New	0.14	25	\$3.39	33%	38%	\$1.25	0.26	0.27	7th Power Plan
Mobile Home	Cooling	Insulation - Foundation	household	New	-20.20	70	\$1,241.19	0%	0%	\$0.16	0.00	0.00	RTF Workbook
Mobile Home	Heating	Insulation - Foundation	household	New	397.51	70	\$1,241.19	0%	0%	\$0.16	0.00	0.00	RTF Workbook
Mobile Home	Cooling	Insulation - Ducting	household	New	58.24	18	\$528.00	49%	80%	\$0.13	0.61	0.64	AEG-BEST
Mobile Home	Heating	Insulation - Ducting	household	New	190.70	18	\$528.00	49%	80%	\$0.13	6.09	6.14	AEG-BEST
Mobile Home	Cooling	Ducting - Repair and Sealing	household	New	69.55	20	\$769.57	29%	75%	\$0.04	1.05	1.12	7th Power Plan
Mobile Home	Heating	Ducting - Repair and Sealing	household	New	1,445.74	20	\$769.57	29%	75%	\$0.04	67.04	67.32	7th Power Plan
Mobile Home	Cooling	Building Shell - Infiltration Control	sqft home	New	0.00	25	\$3.18	75%	75%	\$0.98	0.00	0.00	7th Power Plan
Mobile Home	Heating	Building Shell - Infiltration Control	sqft home	New	0.16	25	\$3.18	75%	75%	\$0.98	0.00	0.00	7th Power Plan
Mobile Home	Cooling	Windows - High Efficiency/ENERGY STAR	sqft window	New	0.57	25	\$21.16	56%	75%	\$0.25	1.07	1.13	7th Power Plan
Mobile Home	Heating	Windows - High Efficiency/ENERGY STAR	sqft window	New	3.96	25	\$21.16	56%	75%	\$0.25	11.74	11.84	7th Power Plan
Mobile Home	Cooling	Windows - Install Reflective Film	sqft window	New	0.04	25	\$1.40	16%	75%	\$0.05	0.23	0.25	7th Power Plan
Mobile Home	Heating	Windows - Install Reflective Film	sqft window	New	1.58	25	\$1.40	16%	75%	\$0.05	14.26	14.26	7th Power Plan
Mobile Home	Cooling	Doors - Storm and Thermal	household	New	3.17	20	\$682.67	70%	80%	\$0.86	0.03	0.03	AEG-BEST
Mobile Home	Heating	Doors - Storm and Thermal	household	New	41.20	20	\$682.67	70%	80%	\$0.86	0.52	0.54	AEG-BEST
Mobile Home	Cooling	Ductless Mini Split Heat Pump (Zonal)	household	New	64.07	15	\$3,448.86	0%	75%	\$0.16	1.39	1.46	7th Power Plan
Mobile Home	Heating	Ductless Mini Split Heat Pump (Zonal)	household	New	1,401.94	15	\$3,448.86	0%	75%	\$0.16	36.43	35.55	7th Power Plan
Mobile Home	Cooling	Ductless Mini Split Heat Pump (Ducted Forced Air)	household	New	93.43	15	\$3,517.21	0%	45%	\$0.05	0.60	0.63	7th Power Plan
Mobile Home	Heating	Ductless Mini Split Heat Pump (Ducted Forced Air)	household	New	5,320.31	15	\$3,517.21	0%	45%	\$0.05	227.38	225.02	7th Power Plan
Mobile Home	Cooling	Space Heating - Heat Recovery Ventilator	household	New	7.01	20	\$1,303.92	0%	0%	\$0.12	0.00	0.00	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Mobile Home	Heating	Space Heating - Heat Recovery Ventilator	household	New	645.92	20	\$1,303.92	0%	0%	\$0.12	0.00	0.00	7th Power Plan
Mobile Home	Cooling	Furnace - Conversion to Air-Source Heat Pump	household	New	0.00	15	\$2,955.28	0%	0%	\$0.09	0.00	0.00	7th Power Plan
Mobile Home	Heating	Furnace - Conversion to Air-Source Heat Pump	household	New	2,533.87	15	\$2,955.28	0%	0%	\$0.09	0.00	0.00	7th Power Plan
Mobile Home	Cooling	Room AC - Removal of Second Unit	household	New	305.35	3	\$18.00	25%	50%	\$0.02	0.37	0.40	CA DEER
Mobile Home	Cooling	Central AC - Maintenance and Tune-Up	household	New	63.55	6	\$275.74	45%	75%	\$0.62	0.06	0.07	Illinois TRM
Mobile Home	Cooling	Central Heat Pump - Controls and Commissioning	household	New	-5.30	15	\$581.99	25%	75%	\$0.11	-0.07	-0.07	7th Power Plan
Mobile Home	Heating	Central Heat Pump - Controls and Commissioning	household	New	377.87	15	\$581.99	25%	75%	\$0.11	5.03	4.92	7th Power Plan
Mobile Home	Cooling	Ceiling Fan - ENERGY STAR	ceiling fans	New	7.00	10	\$47.23	50%	75%	\$0.65	0.19	0.20	ENERGY STAR
Mobile Home	Cooling	Whole-House Fan - Installation	household	New	45.81	20	\$714.44	15%	40%	\$0.99	0.38	0.41	California Public Utilities Commission
Mobile Home	Cooling	Thermostat - WiFi/Interactive	household	New	66.75	10	\$256.67	5%	75%	\$0.05	3.86	4.06	7th Power Plan
Mobile Home	Heating	Thermostat - WiFi/Interactive	household	New	375.86	10	\$256.67	5%	75%	\$0.05	34.70	34.38	7th Power Plan
Mobile Home	Water Heating	Water Heater - Drainwater Heat Recovery	household	New	170.25	40	\$837.67	1%	10%	\$0.24	4.72	5.39	7th Power Plan
Mobile Home	Water Heating	Water Heater - Faucet Aerators	aerators	New	19.81	15	\$5.13	29%	50%	\$0.02	2.18	2.59	7th Power Plan
Mobile Home	Water Heating	Water Heater - Low-Flow Showerheads	showerheads	New	26.88	10	\$26.56	43%	75%	\$0.09	1.49	1.90	7th Power Plan
Mobile Home	Water Heating	Water Heater - Pipe Insulation	feet pipe	New	18.73	15	\$3.26	12%	75%	\$0.01	9.90	12.37	Mid-Atlantic TRM
Mobile Home	Water Heating	Water Heater - Desuperheater	household	New	1,040.67	20	\$1,136.89	0%	0%	\$0.07	0.00	0.00	RTF Workbook
Mobile Home	Water Heating	Water Heater - Temperature Setback	household	New	57.85	2	\$5.00	51%	75%	\$0.03	0.23	0.30	Illinois TRM
Mobile Home	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	showerheads	New	27.28	10	\$19.30	16%	45%	\$0.07	1.38	1.77	RTF Workbook

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Mobile Home	Water Heating	Water Heater - Solar System	household	New	826.49	20	\$8,847.45	0%	20%	\$0.67	28.69	33.11	7th Power Plan
Mobile Home	Interior Lighting	Interior Lighting - Occupancy Sensors	occ sens	New	82.90	8	\$99.16	0%	10%	\$0.11	0.89	1.33	Pacific Gas and Electric Research
Mobile Home	Exterior Lighting	Exterior Lighting - Photosensor Control	ext fixt	New	13.89	15	\$10.19	11%	50%	\$0.04	1.05	1.64	Michigan Energy Measures Database
Mobile Home	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	ext fixt pv	New	10.34	3	\$28.00	1%	30%	\$0.55	0.05	0.15	AEG Research
Mobile Home	Exterior Lighting	Exterior Lighting - Timeclock Installation	ext fixt	New	10.19	10	\$19.15	3%	50%	\$0.14	0.74	1.25	Ontario Power TRM
Mobile Home	Appliances	Refrigerator - Decommissioning and Recycling	household	New	277.92	6	\$143.58	0%	75%	\$0.12	6.73	7.30	PacifiCorp '13-'14 Evaluation
Mobile Home	Appliances	Freezer - Decommissioning and Recycling	household	New	270.91	5	\$143.58	0%	50%	\$0.14	11.10	12.06	PacifiCorp '13-'14 Evaluation
Mobile Home	Electronics	Advanced Power Strips - Tier 1	smart strip	New	28.58	5	\$15.83	8%	25%	\$0.10	1.29	1.19	7th Power Plan
Mobile Home	Electronics	Advanced Power Strips - Tier 2	smart strip	New	177.99	5	\$50.49	8%	25%	\$0.05	8.03	7.41	7th Power Plan
Mobile Home	Miscellaneous	Pool Pump - Timer	household	New	480.31	10	\$85.22	1%	75%	\$0.02	1.06	1.07	Ontario Power TRM
Mobile Home	Miscellaneous	Pool Heater - Solar Water Heating System	household	New	0.00	20	\$3,767.92	0%	30%	\$0.00	0.00	0.00	AEG Research
Mobile Home	Cooling	ENERGY STAR Home Design	household	New	59.46	20	\$4,253.40	15%	75%	\$0.19	4.79	4.88	RTF Workbook
Mobile Home	Heating	ENERGY STAR Home Design	household	New	655.71	20	\$4,253.40	15%	75%	\$0.19	84.81	82.58	RTF Workbook
Mobile Home	Water Heating	ENERGY STAR Home Design	household	New	350.58	20	\$4,253.40	15%	75%	\$0.19	58.53	66.81	RTF Workbook
Mobile Home	Interior Lighting	ENERGY STAR Home Design	household	New	190.92	20	\$4,253.40	15%	75%	\$0.19	31.90	35.77	RTF Workbook
Mobile Home	Cooling	Behavioral Programs	household	New	6.19	1	\$9.30	0%	40%	\$0.05	0.24	0.27	AEG Research
Mobile Home	Heating	Behavioral Programs	household	New	52.75	1	\$9.30	0%	40%	\$0.05	2.17	2.53	AEG Research
Mobile Home	Water Heating	Behavioral Programs	household	New	37.85	1	\$9.30	0%	40%	\$0.05	1.26	1.82	AEG Research
Mobile Home	Interior Lighting	Behavioral Programs	household	New	7.96	1	\$9.30	0%	40%	\$0.05	0.24	0.59	AEG Research
Mobile Home	Exterior Lighting	Behavioral Programs	household	New	1.30	1	\$9.30	0%	40%	\$0.05	0.04	0.11	AEG Research
Mobile Home	Appliances	Behavioral Programs	household	New	45.72	1	\$9.30	0%	40%	\$0.05	1.82	1.96	AEG Research
Mobile Home	Electronics	Behavioral Programs	household	New	21.50	1	\$9.30	0%	40%	\$0.05	0.94	0.90	AEG Research

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Mobile Home	Miscellaneous	Behavioral Programs	household	New	18.60	1	\$9.30	0%	40%	\$0.05	0.81	0.73	AEG Research
Mobile Home	Interior Lighting	Interior Lighting - General Service CFLs	GSL lamp	New	7.06	9	-\$0.13	0%	35%	\$0.00	1.87	4.81	RTF Workbook
Mobile Home	Interior Lighting	Interior Lighting - Exempted CFLs	Exempt lamp	New	20.12	5	-\$2.74	0%	35%	-\$0.01	1.62	2.26	RTF Workbook

Idaho Residential Measures Assumptions

Table H-2 Comparison of 7th Plan and RTF Residential Measures in Idaho

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Single Family	Cooling	Central AC	12 kBtu/hr	Existing	55.52	15	\$647.54	33%	at stock turnover	\$1.25	1,775.83	1,775.83	AEG-BEST
Single Family	Cooling	Room AC	10.5 kBtu/hr	Existing	52.94	12	\$247.96	14%	at stock turnover	\$0.57	248.78	248.78	AEG-BEST
Single Family	Cooling	Evaporative AC	1 sqft	Existing	0.10	15	\$0.11	4%	at stock turnover	\$0.11	207.50	207.50	New Buildings Institute Study, 2006
Single Family	Cooling	Air-Source Heat Pump	36 kBtu/hr	Existing	79.20	15	\$218.37	5%	at stock turnover	\$0.03	136.72	136.72	AEG-BEST
Single Family	Heating	Air-Source Heat Pump	36 kBtu/hr	Existing	621.54	15	\$218.37	5%	at stock turnover	\$0.03	1,072.94	1,072.94	AEG-BEST
Single Family	Cooling	Geothermal Heat Pump	36 kBtu/hr	Existing	588.02	20	\$2,531.24	1%	at stock turnover	\$0.12	0.23	0.23	AEG-BEST
Single Family	Heating	Geothermal Heat Pump	36 kBtu/hr	Existing	1,456.91	20	\$2,531.24	1%	at stock turnover	\$0.12	0.56	0.56	AEG-BEST
Single Family	Heating	Electric Furnace	36 kBtu/hr	Existing	0.00	18	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Single Family	Heating	Electric Room Heat	3.5 kBtu/hr	Existing	0.00	18	\$0.00	17%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Single Family	Water Heating	Water Heater (<= 55 Gal)	50 gallons	Existing	1,170.88	13	\$743.91	17%	50%	\$0.07	4,617.31	4,617.31	7th Power Plan
Single Family	Water Heating	Water Heater (<= 55 Gal)	50 gallons	Existing	1,284.22	13	\$1,215.07	10%	30%	\$0.11	3,320.50	3,320.50	7th Power Plan
Single Family	Water Heating	Water Heater (<= 55 Gal)	50 gallons	Existing	1,858.17	13	\$1,573.80	7%	20%	\$0.10	3,206.23	3,206.23	Annual Energy Outlook, 2015
Single Family	Water Heating	Water Heater (> 55 Gal)	50 gallons	Existing	1,024.56	13	\$0.00	2%	50%	\$0.00	0.00	0.00	7th Power Plan
Single Family	Water Heating	Water Heater (> 55 Gal)	50 gallons	Existing	209.95	13	\$471.15	1%	30%	\$0.33	76.68	76.68	7th Power Plan
Single Family	Water Heating	Water Heater (> 55 Gal)	50 gallons	Existing	662.78	13	\$829.89	1%	20%	\$0.16	189.47	189.47	Annual Energy Outlook, 2015
Single Family	Interior Lighting	General Service Screw-In	1 lamps	Existing	10.82	12	\$6.13	100%	at stock turnover	\$0.05	9,231.76	13,779.81	EIA 2011-2012 Ref. Case
Single Family	Interior Lighting	Linear Lighting	1 lamps	Existing	3.90	17	\$27.80	100%	at stock turnover	\$0.72	440.56	440.56	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Single Family	Interior Lighting	Exempted Screw-In	1 lamps	Existing	24.07	10	\$12.32	100%	at stock turnover	-\$0.01	9,477.25	9,135.21	EIA 2011-2012 Ref. Case
Single Family	Exterior Lighting	Screw-in	1 lamps	Existing	30.95	10	\$6.13	100%	at stock turnover	\$0.02	4,087.13	6,033.58	EIA 2011-2012 Ref. Case
Single Family	Appliances	Refrigerator	1 units	Existing	107.76	15	\$240.28	100%	at stock turnover	\$0.24	2,129.32	2,129.32	7th Power Plan
Single Family	Appliances	Second Refrigerator	1 units	Existing	150.46	15	\$240.28	38%	at stock turnover	\$0.17	1,117.62	1,117.62	7th Power Plan
Single Family	Appliances	Freezer	1 units	Existing	122.95	22	\$83.03	77%	at stock turnover	\$0.06	1,227.20	1,227.20	RTF Workbook
Single Family	Appliances	Clothes Washer	1 units	Existing	9.20	14	\$194.20	99%	at stock turnover	-\$0.28	282.80	282.80	7th Power Plan
Single Family	Appliances	Clothes Dryer	1 units	Existing	151.75	16	\$308.00	83%	at stock turnover	\$0.21	1,809.84	1,809.84	7th Power Plan
Single Family	Appliances	Dishwasher	1 units	Existing	2.15	15	\$6.36	76%	at stock turnover	\$0.17	36.36	36.36	7th Power Plan
Single Family	Appliances	Stove/Oven	1 units	Existing	166.70	20	\$307.09	74%	at stock turnover	\$0.17	2,559.69	2,559.69	7th Power Plan
Single Family	Appliances	Microwave	1 units	Existing	8.12	11	\$4.63	99%	at stock turnover	\$0.07	251.64	251.64	7th Power Plan
Single Family	Electronics	Personal Computers	1 units	Existing	57.37	5	\$14.17	75%	at stock turnover	\$0.05	422.25	422.25	7th Power Plan
Single Family	Electronics	Monitor	1 units	Existing	56.18	8	\$8.21	90%	at stock turnover	\$0.02	238.56	238.56	7th Power Plan
Single Family	Electronics	Laptops	1 units	Existing	13.88	4	\$57.18	114%	at stock turnover	\$1.08	190.01	190.01	7th Power Plan
Single Family	Electronics	Printer/Fax/Copier	1 units	Existing	19.33	5	\$0.01	100%	at stock turnover	\$0.00	38.26	38.26	ENERGY STAR
Single Family	Electronics	TVs	1 units	Existing	23.82	6	\$0.01	235%	at stock turnover	\$0.00	286.50	286.50	ENERGY STAR
Single Family	Electronics	Set-top Boxes/DVRs	1 units	Existing	64.81	5	\$0.00	191%	at stock turnover	\$0.00	0.00	0.00	Voluntary Agreement
Single Family	Electronics	Devices and Gadgets	1 units	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Single Family	Miscellaneous	Electric Vehicles	1 units	Existing	116.75	10	\$770.00	0%	at stock turnover	\$0.88	55.98	55.98	7th Power Plan
Single Family	Miscellaneous	Pool Heater	1 units	Existing	3,864.38	15	\$3,546.07	0%	at stock turnover	\$0.10	170.48	170.48	AEG Research

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Single Family	Miscellaneous	Pool Pump	1 units	Existing	702.98	15	\$872.94	2%	at stock turnover	\$0.13	326.64	326.64	Southern California Edison
Single Family	Miscellaneous	Hot Tub/Spa	1 units	Existing	169.51	15	\$350.00	8%	at stock turnover	\$0.22	366.15	366.15	AEG Research
Single Family	Miscellaneous	Furnace Fan	1 units	Existing	219.05	20	\$97.00	67%	at stock turnover	\$0.04	-180.72	125.59	DOE Rule: EERE-2010-BT-STD-0011
Single Family	Miscellaneous	Well Pump	1 units	Existing	0.00	5	\$0.00	42%	at stock turnover	\$0.00	0.00	0.00	N/A
Single Family	Miscellaneous	Miscellaneous	1 units	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Single Family	Cooling	Central AC	12 kBtu/hr	New	72.95	15	\$647.54	46%	at stock turnover	\$0.95	1,528.91	1,528.91	AEG-BEST
Single Family	Cooling	Room AC	10.5 kBtu/hr	New	34.70	12	\$247.96	3%	at stock turnover	\$0.87	28.73	28.73	AEG-BEST
Single Family	Cooling	Evaporative AC	1 sqft	New	0.00	15	\$0.11	0%	at stock turnover	\$0.00	0.00	0.00	New Buildings Institute Study, 2006
Single Family	Cooling	Air-Source Heat Pump	36 kBtu/hr	New	107.82	15	\$218.37	5%	at stock turnover	\$0.04	105.50	105.50	AEG-BEST
Single Family	Heating	Air-Source Heat Pump	36 kBtu/hr	New	456.56	15	\$218.37	5%	at stock turnover	\$0.04	446.51	446.51	AEG-BEST
Single Family	Cooling	Geothermal Heat Pump	36 kBtu/hr	New	565.49	20	\$2,531.24	0%	at stock turnover	\$0.14	0.08	0.08	AEG-BEST
Single Family	Heating	Geothermal Heat Pump	36 kBtu/hr	New	1,082.55	20	\$2,531.24	0%	at stock turnover	\$0.14	0.17	0.17	AEG-BEST
Single Family	Heating	Electric Furnace	36 kBtu/hr	New	0.00	18	\$0.00	3%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Single Family	Heating	Electric Room Heat	3.5 kBtu/hr	New	0.00	18	\$0.00	4%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Single Family	Water Heating	Water Heater (<= 55 Gal)	50 gallons	New	1,171.07	13	\$743.91	11%	50%	\$0.07	1,108.79	1,108.79	7th Power Plan
Single Family	Water Heating	Water Heater (<= 55 Gal)	50 gallons	New	1,279.21	13	\$1,215.07	6%	30%	\$0.11	798.03	798.03	7th Power Plan
Single Family	Water Heating	Water Heater (<= 55 Gal)	50 gallons	New	1,853.27	13	\$1,573.80	4%	20%	\$0.10	771.54	771.54	Annual Energy Outlook, 2015
Single Family	Water Heating	Water Heater (> 55 Gal)	50 gallons	New	1,024.56	13	\$0.00	2%	50%	\$0.00	0.00	0.00	7th Power Plan
Single Family	Water Heating	Water Heater (> 55 Gal)	50 gallons	New	209.75	13	\$471.15	1%	30%	\$0.33	26.76	26.76	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Single Family	Water Heating	Water Heater (> 55 Gal)	50 gallons	New	662.57	13	\$829.89	1%	20%	\$0.16	66.13	66.13	Annual Energy Outlook, 2015
Single Family	Interior Lighting	General Service Screw-In	1 lamps	New	11.10	12	\$6.13	100%	at stock turnover	\$0.05	4,064.38	4,730.30	EIA 2011-2012 Ref. Case
Single Family	Interior Lighting	Linear Lighting	1 lamps	New	4.32	17	\$29.27	100%	at stock turnover	\$0.68	231.01	231.01	7th Power Plan
Single Family	Interior Lighting	Exempted Screw-In	1 lamps	New	24.07	10	\$12.32	100%	at stock turnover	-\$0.01	4,133.95	4,062.18	EIA 2011-2012 Ref. Case
Single Family	Exterior Lighting	Screw-in	1 lamps	New	31.69	10	\$6.13	100%	at stock turnover	\$0.02	1,801.02	2,093.35	EIA 2011-2012 Ref. Case
Single Family	Appliances	Refrigerator	1 units	New	107.76	15	\$240.28	100%	at stock turnover	\$0.24	1,019.00	1,019.00	7th Power Plan
Single Family	Appliances	Second Refrigerator	1 units	New	150.46	15	\$240.28	29%	at stock turnover	\$0.17	400.40	400.40	7th Power Plan
Single Family	Appliances	Freezer	1 units	New	122.95	22	\$83.03	60%	at stock turnover	\$0.06	410.96	410.96	RTF Workbook
Single Family	Appliances	Clothes Washer	1 units	New	9.20	14	\$194.20	100%	at stock turnover	-\$0.28	120.91	120.91	7th Power Plan
Single Family	Appliances	Clothes Dryer	1 units	New	151.75	16	\$308.00	82%	at stock turnover	\$0.21	782.93	782.93	7th Power Plan
Single Family	Appliances	Dishwasher	1 units	New	2.15	15	\$6.36	91%	at stock turnover	\$0.17	17.16	17.16	7th Power Plan
Single Family	Appliances	Stove/Oven	1 units	New	166.70	20	\$307.09	62%	at stock turnover	\$0.17	970.42	970.42	7th Power Plan
Single Family	Appliances	Microwave	1 units	New	8.12	11	\$4.63	99%	at stock turnover	\$0.07	99.24	99.24	7th Power Plan
Single Family	Electronics	Personal Computers	1 units	New	57.37	5	\$14.17	61%	at stock turnover	\$0.05	114.08	114.08	7th Power Plan
Single Family	Electronics	Monitor	1 units	New	56.18	8	\$8.21	73%	at stock turnover	\$0.02	72.71	72.71	7th Power Plan
Single Family	Electronics	Laptops	1 units	New	13.88	4	\$57.18	188%	at stock turnover	\$1.08	88.14	88.14	7th Power Plan
Single Family	Electronics	Printer/Fax/Copier	1 units	New	19.33	5	\$0.01	148%	at stock turnover	\$0.00	20.32	20.32	ENERGY STAR
Single Family	Electronics	TVs	1 units	New	23.82	6	\$0.01	293%	at stock turnover	\$0.00	138.46	138.46	ENERGY STAR
Single Family	Electronics	Set-top Boxes/DVRs	1 units	New	64.81	5	\$0.00	239%	at stock turnover	\$0.00	0.00	0.00	Voluntary Agreement

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Single Family	Electronics	Devices and Gadgets	1 units	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Single Family	Miscellaneous	Electric Vehicles	1 units	New	116.75	10	\$770.00	0%	at stock turnover	\$0.88	23.33	23.33	7th Power Plan
Single Family	Miscellaneous	Pool Heater	1 units	New	3,864.38	15	\$3,546.07	0%	at stock turnover	\$0.10	78.46	78.46	AEG Research
Single Family	Miscellaneous	Pool Pump	1 units	New	702.98	15	\$872.94	2%	at stock turnover	\$0.13	150.33	150.33	Southern California Edison
Single Family	Miscellaneous	Hot Tub/Spa	1 units	New	169.51	15	\$350.00	8%	at stock turnover	\$0.22	171.29	171.29	AEG Research
Single Family	Miscellaneous	Furnace Fan	1 units	New	219.05	20	\$97.00	67%	at stock turnover	\$0.04	-78.05	54.24	DOE Rule: EERE-2010-BT-STD-0011
Single Family	Miscellaneous	Well Pump	1 units	New	0.00	5	\$0.00	68%	at stock turnover	\$0.00	0.00	0.00	N/A
Single Family	Miscellaneous	Miscellaneous	1 units	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Multifamily	Cooling	Central AC	12 kBtu/hr	Existing	50.23	15	\$647.54	33%	at stock turnover	\$1.38	151.37	151.37	AEG-BEST
Multifamily	Cooling	Room AC	10.5 kBtu/hr	Existing	51.65	12	\$247.96	14%	at stock turnover	\$0.58	42.36	42.36	AEG-BEST
Multifamily	Cooling	Evaporative AC	1 sqft	Existing	0.09	15	\$0.11	4%	at stock turnover	\$0.14	7.93	7.93	New Buildings Institute Study, 2006
Multifamily	Cooling	Air-Source Heat Pump	36 kBtu/hr	Existing	54.61	15	\$218.37	5%	at stock turnover	\$0.13	11.16	11.16	AEG-BEST
Multifamily	Heating	Air-Source Heat Pump	36 kBtu/hr	Existing	123.18	15	\$218.37	5%	at stock turnover	\$0.13	25.17	25.17	AEG-BEST
Multifamily	Cooling	Geothermal Heat Pump	36 kBtu/hr	Existing	0.00	20	\$2,531.24	1%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Multifamily	Heating	Geothermal Heat Pump	36 kBtu/hr	Existing	0.00	20	\$2,531.24	1%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Multifamily	Heating	Electric Furnace	36 kBtu/hr	Existing	0.00	18	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Multifamily	Heating	Electric Room Heat	3.5 kBtu/hr	Existing	0.00	18	\$0.00	17%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Multifamily	Water Heating	Water Heater (<= 55 Gal)	50 gallons	Existing	795.19	13	\$743.91	17%	50%	\$0.11	785.72	785.72	7th Power Plan
Multifamily	Water Heating	Water Heater (<= 55 Gal)	50 gallons	Existing	868.40	13	\$1,215.07	10%	30%	\$0.16	565.53	565.53	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Multifamily	Water Heating	Water Heater (<= 55 Gal)	50 gallons	Existing	1,258.17	13	\$1,573.80	7%	20%	\$0.15	546.80	546.80	Annual Energy Outlook, 2015
Multifamily	Water Heating	Water Heater (> 55 Gal)	50 gallons	Existing	695.66	13	\$0.00	2%	50%	\$0.00	0.00	0.00	7th Power Plan
Multifamily	Water Heating	Water Heater (> 55 Gal)	50 gallons	Existing	142.41	13	\$471.15	1%	30%	\$0.49	7.77	7.77	7th Power Plan
Multifamily	Water Heating	Water Heater (> 55 Gal)	50 gallons	Existing	449.87	13	\$829.89	1%	20%	\$0.23	19.20	19.20	Annual Energy Outlook, 2015
Multifamily	Interior Lighting	General Service Screw-In	1 lamps	Existing	7.34	12	\$6.13	100%	at stock turnover	\$0.07	817.66	1,238.13	EIA 2011-2012 Ref. Case
Multifamily	Interior Lighting	Linear Lighting	1 lamps	Existing	2.12	17	\$15.11	100%	at stock turnover	\$0.72	48.43	48.43	7th Power Plan
Multifamily	Interior Lighting	Exempted Screw-In	1 lamps	Existing	23.95	10	\$12.32	100%	at stock turnover	-\$0.01	189.04	182.03	EIA 2011-2012 Ref. Case
Multifamily	Exterior Lighting	Screw-in	1 lamps	Existing	35.54	10	\$6.13	100%	at stock turnover	\$0.02	294.49	441.22	EIA 2011-2012 Ref. Case
Multifamily	Appliances	Refrigerator	1 units	Existing	107.76	15	\$240.28	100%	at stock turnover	\$0.24	395.91	395.91	7th Power Plan
Multifamily	Appliances	Second Refrigerator	1 units	Existing	150.46	15	\$240.28	38%	at stock turnover	\$0.17	27.33	27.33	7th Power Plan
Multifamily	Appliances	Freezer	1 units	Existing	122.94	22	\$83.03	77%	at stock turnover	\$0.06	41.25	41.25	RTF Workbook
Multifamily	Appliances	Clothes Washer	1 units	Existing	8.74	14	\$194.20	99%	at stock turnover	-\$0.30	31.97	31.97	7th Power Plan
Multifamily	Appliances	Clothes Dryer	1 units	Existing	162.50	16	\$308.00	83%	at stock turnover	\$0.20	271.06	271.06	7th Power Plan
Multifamily	Appliances	Dishwasher	1 units	Existing	2.15	15	\$6.36	76%	at stock turnover	\$0.17	4.07	4.07	7th Power Plan
Multifamily	Appliances	Stove/Oven	1 units	Existing	120.42	20	\$307.09	74%	at stock turnover	\$0.24	450.62	450.62	7th Power Plan
Multifamily	Appliances	Microwave	1 units	Existing	8.12	11	\$4.63	99%	at stock turnover	\$0.07	46.13	46.13	7th Power Plan
Multifamily	Electronics	Personal Computers	1 units	Existing	57.37	5	\$14.17	75%	at stock turnover	\$0.05	29.74	29.74	7th Power Plan
Multifamily	Electronics	Monitor	1 units	Existing	56.18	8	\$8.21	90%	at stock turnover	\$0.02	16.67	16.67	7th Power Plan
Multifamily	Electronics	Laptops	1 units	Existing	13.88	4	\$57.18	114%	at stock turnover	\$1.08	22.83	22.83	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Multifamily	Electronics	Printer/Fax/Copier	1 units	Existing	19.33	5	\$0.01	100%	at stock turnover	\$0.00	2.83	2.83	ENERGY STAR
Multifamily	Electronics	TVs	1 units	Existing	23.26	6	\$0.01	235%	at stock turnover	\$0.00	33.86	33.86	ENERGY STAR
Multifamily	Electronics	Set-top Boxes/DVRs	1 units	Existing	64.81	5	\$0.00	191%	at stock turnover	\$0.00	0.00	0.00	Voluntary Agreement
Multifamily	Electronics	Devices and Gadgets	1 units	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Multifamily	Miscellaneous	Electric Vehicles	1 units	Existing	0.00	10	\$770.00	0%	at stock turnover	\$0.00	0.00	0.00	7th Power Plan
Multifamily	Miscellaneous	Pool Heater	1 units	Existing	0.00	15	\$3,546.07	0%	at stock turnover	\$0.00	0.00	0.00	AEG Research
Multifamily	Miscellaneous	Pool Pump	1 units	Existing	0.00	15	\$872.94	2%	at stock turnover	\$0.00	0.00	0.00	Southern California Edison
Multifamily	Miscellaneous	Hot Tub/Spa	1 units	Existing	0.00	15	\$350.00	8%	at stock turnover	\$0.00	0.00	0.00	AEG Research
Multifamily	Miscellaneous	Furnace Fan	1 units	Existing	78.82	20	\$97.00	67%	at stock turnover	\$0.11	-7.05	4.90	DOE Rule: EERE-2010-BT-STD-0011
Multifamily	Miscellaneous	Well Pump	1 units	Existing	0.00	5	\$0.00	42%	at stock turnover	\$0.00	0.00	0.00	N/A
Multifamily	Miscellaneous	Miscellaneous	1 units	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Multifamily	Cooling	Central AC	12 kBtu/hr	New	45.83	15	\$647.54	46%	at stock turnover	\$1.51	220.92	220.92	AEG-BEST
Multifamily	Cooling	Room AC	10.5 kBtu/hr	New	24.19	12	\$247.96	3%	at stock turnover	\$1.25	16.16	16.16	AEG-BEST
Multifamily	Cooling	Evaporative AC	1 sqft	New	0.09	15	\$0.11	0%	at stock turnover	\$0.14	4.60	4.60	New Buildings Institute Study, 2006
Multifamily	Cooling	Air-Source Heat Pump	36 kBtu/hr	New	50.03	15	\$218.37	5%	at stock turnover	\$0.00	0.63	0.63	AEG-BEST
Multifamily	Heating	Air-Source Heat Pump	36 kBtu/hr	New	0.00	15	\$218.37	5%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Multifamily	Cooling	Geothermal Heat Pump	36 kBtu/hr	New	0.00	20	\$2,531.24	0%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Multifamily	Heating	Geothermal Heat Pump	36 kBtu/hr	New	0.00	20	\$2,531.24	0%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Multifamily	Heating	Electric Furnace	36 kBtu/hr	New	0.00	18	\$0.00	3%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Multifamily	Heating	Electric Room Heat	3.5 kBtu/hr	New	0.00	18	\$0.00	4%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Multifamily	Water Heating	Water Heater (<= 55 Gal)	50 gallons	New	795.19	13	\$743.91	11%	50%	\$0.11	221.31	221.31	7th Power Plan
Multifamily	Water Heating	Water Heater (<= 55 Gal)	50 gallons	New	868.41	13	\$1,215.07	6%	30%	\$0.16	159.29	159.29	7th Power Plan
Multifamily	Water Heating	Water Heater (<= 55 Gal)	50 gallons	New	1,258.18	13	\$1,573.80	4%	20%	\$0.15	154.01	154.01	Annual Energy Outlook, 2015
Multifamily	Water Heating	Water Heater (> 55 Gal)	50 gallons	New	695.66	13	\$0.00	2%	50%	\$0.00	0.00	0.00	7th Power Plan
Multifamily	Water Heating	Water Heater (> 55 Gal)	50 gallons	New	142.41	13	\$471.15	1%	30%	\$0.49	3.69	3.69	7th Power Plan
Multifamily	Water Heating	Water Heater (> 55 Gal)	50 gallons	New	449.87	13	\$829.89	1%	20%	\$0.23	9.12	9.12	Annual Energy Outlook, 2015
Multifamily	Interior Lighting	General Service Screw-In	1 lamps	New	7.52	12	\$6.13	100%	at stock turnover	\$0.07	483.55	563.49	EIA 2011-2012 Ref. Case
Multifamily	Interior Lighting	Linear Lighting	1 lamps	New	1.06	17	\$15.91	100%	at stock turnover	\$1.51	15.14	15.14	7th Power Plan
Multifamily	Interior Lighting	Exempted Screw-In	1 lamps	New	23.95	10	\$12.32	100%	at stock turnover	-\$0.01	111.06	109.14	EIA 2011-2012 Ref. Case
Multifamily	Exterior Lighting	Screw-in	1 lamps	New	36.34	10	\$6.13	100%	at stock turnover	\$0.02	174.63	203.21	EIA 2011-2012 Ref. Case
Multifamily	Appliances	Refrigerator	1 units	New	107.76	15	\$240.28	100%	at stock turnover	\$0.24	225.39	225.39	7th Power Plan
Multifamily	Appliances	Second Refrigerator	1 units	New	150.46	15	\$240.28	29%	at stock turnover	\$0.17	46.38	46.38	7th Power Plan
Multifamily	Appliances	Freezer	1 units	New	122.95	22	\$83.03	60%	at stock turnover	\$0.06	2.73	2.73	RTF Workbook
Multifamily	Appliances	Clothes Washer	1 units	New	8.74	14	\$194.20	100%	at stock turnover	-\$0.30	16.32	16.32	7th Power Plan
Multifamily	Appliances	Clothes Dryer	1 units	New	162.50	16	\$308.00	82%	at stock turnover	\$0.20	226.13	226.13	7th Power Plan
Multifamily	Appliances	Dishwasher	1 units	New	2.15	15	\$6.36	91%	at stock turnover	\$0.17	2.29	2.29	7th Power Plan
Multifamily	Appliances	Stove/Oven	1 units	New	120.42	20	\$307.09	62%	at stock turnover	\$0.24	211.52	211.52	7th Power Plan
Multifamily	Appliances	Microwave	1 units	New	8.12	11	\$4.63	99%	at stock turnover	\$0.07	21.64	21.64	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Multifamily	Electronics	Personal Computers	1 units	New	57.37	5	\$14.17	61%	at stock turnover	\$0.05	15.19	15.19	7th Power Plan
Multifamily	Electronics	Monitor	1 units	New	56.18	8	\$8.21	73%	at stock turnover	\$0.02	10.64	10.64	7th Power Plan
Multifamily	Electronics	Laptops	1 units	New	13.88	4	\$57.18	188%	at stock turnover	\$1.08	10.89	10.89	7th Power Plan
Multifamily	Electronics	Printer/Fax/Copier	1 units	New	19.33	5	\$0.01	148%	at stock turnover	\$0.00	1.61	1.61	ENERGY STAR
Multifamily	Electronics	TVs	1 units	New	23.26	6	\$0.01	293%	at stock turnover	\$0.00	19.65	19.65	ENERGY STAR
Multifamily	Electronics	Set-top Boxes/DVRs	1 units	New	64.81	5	\$0.00	239%	at stock turnover	\$0.00	0.00	0.00	Voluntary Agreement
Multifamily	Electronics	Devices and Gadgets	1 units	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Multifamily	Miscellaneous	Electric Vehicles	1 units	New	0.00	10	\$770.00	0%	at stock turnover	\$0.00	0.00	0.00	7th Power Plan
Multifamily	Miscellaneous	Pool Heater	1 units	New	0.00	15	\$3,546.07	0%	at stock turnover	\$0.00	0.00	0.00	AEG Research
Multifamily	Miscellaneous	Pool Pump	1 units	New	0.00	15	\$872.94	2%	at stock turnover	\$0.00	0.00	0.00	Southern California Edison
Multifamily	Miscellaneous	Hot Tub/Spa	1 units	New	0.00	15	\$350.00	8%	at stock turnover	\$0.00	0.00	0.00	AEG Research
Multifamily	Miscellaneous	Furnace Fan	1 units	New	78.82	20	\$97.00	67%	at stock turnover	\$0.11	-3.63	2.52	DOE Rule: EERE-2010-BT-STD-0011
Multifamily	Miscellaneous	Well Pump	1 units	New	0.00	5	\$0.00	68%	at stock turnover	\$0.00	0.00	0.00	N/A
Multifamily	Miscellaneous	Miscellaneous	1 units	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Mobile Home	Cooling	Central AC	12 kBtu/hr	Existing	51.66	15	\$647.54	33%	at stock turnover	\$1.34	81.60	81.60	AEG-BEST
Mobile Home	Cooling	Room AC	10.5 kBtu/hr	Existing	52.52	12	\$247.96	14%	at stock turnover	\$0.57	71.09	71.09	AEG-BEST
Mobile Home	Cooling	Evaporative AC	1 sqft	Existing	0.11	15	\$0.11	4%	at stock turnover	\$0.10	67.34	67.34	New Buildings Institute Study, 2006
Mobile Home	Cooling	Air-Source Heat Pump	36 kBtu/hr	Existing	68.83	15	\$218.37	5%	at stock turnover	\$0.04	5.82	5.82	AEG-BEST
Mobile Home	Heating	Air-Source Heat Pump	36 kBtu/hr	Existing	522.48	15	\$218.37	5%	at stock turnover	\$0.04	44.16	44.16	AEG-BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Mobile Home	Cooling	Geothermal Heat Pump	36 kBtu/hr	Existing	0.00	20	\$2,531.24	1%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Mobile Home	Heating	Geothermal Heat Pump	36 kBtu/hr	Existing	0.00	20	\$2,531.24	1%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Mobile Home	Heating	Electric Furnace	36 kBtu/hr	Existing	0.00	18	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Mobile Home	Heating	Electric Room Heat	3.5 kBtu/hr	Existing	0.00	18	\$0.00	17%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Mobile Home	Water Heating	Water Heater (<= 55 Gal)	50 gallons	Existing	1,193.23	13	\$743.91	17%	50%	\$0.07	1,002.29	1,002.29	7th Power Plan
Mobile Home	Water Heating	Water Heater (<= 55 Gal)	50 gallons	Existing	1,303.44	13	\$1,215.07	10%	30%	\$0.11	721.37	721.37	7th Power Plan
Mobile Home	Water Heating	Water Heater (<= 55 Gal)	50 gallons	Existing	1,888.37	13	\$1,573.80	7%	20%	\$0.10	697.43	697.43	Annual Energy Outlook, 2015
Mobile Home	Water Heating	Water Heater (> 55 Gal)	50 gallons	Existing	1,043.94	13	\$0.00	2%	50%	\$0.00	0.00	0.00	7th Power Plan
Mobile Home	Water Heating	Water Heater (> 55 Gal)	50 gallons	Existing	213.72	13	\$471.15	1%	30%	\$0.33	1.85	1.85	7th Power Plan
Mobile Home	Water Heating	Water Heater (> 55 Gal)	50 gallons	Existing	675.11	13	\$829.89	1%	20%	\$0.15	4.58	4.58	Annual Energy Outlook, 2015
Mobile Home	Interior Lighting	General Service Screw-In	1 lamps	Existing	10.31	12	\$6.13	100%	at stock turnover	\$0.05	735.50	1,109.72	EIA 2011-2012 Ref. Case
Mobile Home	Interior Lighting	Linear Lighting	1 lamps	Existing	1.70	17	\$12.08	100%	at stock turnover	\$0.72	41.70	41.70	7th Power Plan
Mobile Home	Interior Lighting	Exempted Screw-In	1 lamps	Existing	37.78	10	\$12.32	100%	at stock turnover	-\$0.01	615.23	592.41	EIA 2011-2012 Ref. Case
Mobile Home	Exterior Lighting	Screw-in	1 lamps	Existing	26.73	10	\$6.13	100%	at stock turnover	\$0.02	176.36	263.26	EIA 2011-2012 Ref. Case
Mobile Home	Appliances	Refrigerator	1 units	Existing	107.76	15	\$240.28	100%	at stock turnover	\$0.24	280.13	280.13	7th Power Plan
Mobile Home	Appliances	Second Refrigerator	1 units	Existing	150.46	15	\$240.28	38%	at stock turnover	\$0.17	84.70	84.70	7th Power Plan
Mobile Home	Appliances	Freezer	1 units	Existing	122.95	22	\$83.03	77%	at stock turnover	\$0.06	132.40	132.40	RTF Workbook
Mobile Home	Appliances	Clothes Washer	1 units	Existing	9.19	14	\$194.20	99%	at stock turnover	-\$0.28	35.17	35.17	7th Power Plan
Mobile Home	Appliances	Clothes Dryer	1 units	Existing	134.94	16	\$308.00	83%	at stock turnover	\$0.24	225.63	225.63	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Mobile Home	Appliances	Dishwasher	1 units	Existing	2.15	15	\$6.36	76%	at stock turnover	\$0.17	4.66	4.66	7th Power Plan
Mobile Home	Appliances	Stove/Oven	1 units	Existing	118.64	20	\$307.09	74%	at stock turnover	\$0.24	242.17	242.17	7th Power Plan
Mobile Home	Appliances	Microwave	1 units	Existing	8.12	11	\$4.63	99%	at stock turnover	\$0.07	32.89	32.89	7th Power Plan
Mobile Home	Electronics	Personal Computers	1 units	Existing	57.37	5	\$14.17	75%	at stock turnover	\$0.05	32.23	32.23	7th Power Plan
Mobile Home	Electronics	Monitor	1 units	Existing	56.18	8	\$8.21	90%	at stock turnover	\$0.02	18.06	18.06	7th Power Plan
Mobile Home	Electronics	Laptops	1 units	Existing	13.88	4	\$57.18	114%	at stock turnover	\$1.08	10.94	10.94	7th Power Plan
Mobile Home	Electronics	Printer/Fax/Copier	1 units	Existing	19.33	5	\$0.01	100%	at stock turnover	\$0.00	2.88	2.88	ENERGY STAR
Mobile Home	Electronics	TVs	1 units	Existing	21.92	6	\$0.01	235%	at stock turnover	\$0.00	32.67	32.67	ENERGY STAR
Mobile Home	Electronics	Set-top Boxes/DVRs	1 units	Existing	64.81	5	\$0.00	191%	at stock turnover	\$0.00	0.00	0.00	Voluntary Agreement
Mobile Home	Electronics	Devices and Gadgets	1 units	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Mobile Home	Miscellaneous	Electric Vehicles	1 units	Existing	116.75	10	\$770.00	0%	at stock turnover	\$0.88	6.12	6.12	7th Power Plan
Mobile Home	Miscellaneous	Pool Heater	1 units	Existing	0.00	15	\$3,546.07	0%	at stock turnover	\$0.00	0.00	0.00	AEG Research
Mobile Home	Miscellaneous	Pool Pump	1 units	Existing	702.98	15	\$872.94	2%	at stock turnover	\$0.13	38.19	38.19	Southern California Edison
Mobile Home	Miscellaneous	Hot Tub/Spa	1 units	Existing	169.51	15	\$350.00	8%	at stock turnover	\$0.22	17.61	17.61	AEG Research
Mobile Home	Miscellaneous	Furnace Fan	1 units	Existing	124.29	20	\$97.00	67%	at stock turnover	\$0.07	-12.49	8.68	DOE Rule: EERE-2010-BT-STD-0011
Mobile Home	Miscellaneous	Well Pump	1 units	Existing	0.00	5	\$0.00	42%	at stock turnover	\$0.00	0.00	0.00	N/A
Mobile Home	Miscellaneous	Miscellaneous	1 units	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Mobile Home	Cooling	Central AC	12 kBtu/hr	New	0.00	15	\$647.54	46%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Mobile Home	Cooling	Room AC	10.5 kBtu/hr	New	28.04	12	\$247.96	3%	at stock turnover	\$1.08	26.55	26.55	AEG-BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Mobile Home	Cooling	Evaporative AC	1 sqft	New	0.11	15	\$0.11	0%	at stock turnover	\$0.10	36.98	36.98	New Buildings Institute Study, 2006
Mobile Home	Cooling	Air-Source Heat Pump	36 kBtu/hr	New	84.50	15	\$218.37	5%	at stock turnover	\$0.05	2.25	2.25	AEG-BEST
Mobile Home	Heating	Air-Source Heat Pump	36 kBtu/hr	New	377.62	15	\$218.37	5%	at stock turnover	\$0.05	10.05	10.05	AEG-BEST
Mobile Home	Cooling	Geothermal Heat Pump	36 kBtu/hr	New	0.00	20	\$2,531.24	0%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Mobile Home	Heating	Geothermal Heat Pump	36 kBtu/hr	New	0.00	20	\$2,531.24	0%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Mobile Home	Heating	Electric Furnace	36 kBtu/hr	New	0.00	18	\$0.00	3%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Mobile Home	Heating	Electric Room Heat	3.5 kBtu/hr	New	0.00	18	\$0.00	4%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Mobile Home	Water Heating	Water Heater (<= 55 Gal)	50 gallons	New	1,193.21	13	\$743.91	11%	50%	\$0.07	513.39	513.39	7th Power Plan
Mobile Home	Water Heating	Water Heater (<= 55 Gal)	50 gallons	New	1,303.99	13	\$1,215.07	6%	30%	\$0.11	369.47	369.47	7th Power Plan
Mobile Home	Water Heating	Water Heater (<= 55 Gal)	50 gallons	New	1,888.91	13	\$1,573.80	4%	20%	\$0.10	357.15	357.15	Annual Energy Outlook, 2015
Mobile Home	Water Heating	Water Heater (> 55 Gal)	50 gallons	New	1,043.94	13	\$0.00	2%	50%	\$0.00	0.00	0.00	7th Power Plan
Mobile Home	Water Heating	Water Heater (> 55 Gal)	50 gallons	New	213.74	13	\$471.15	1%	30%	\$0.33	0.88	0.88	7th Power Plan
Mobile Home	Water Heating	Water Heater (> 55 Gal)	50 gallons	New	675.13	13	\$829.89	1%	20%	\$0.15	2.18	2.18	Annual Energy Outlook, 2015
Mobile Home	Interior Lighting	General Service Screw-In	1 lamps	New	10.62	12	\$6.13	100%	at stock turnover	\$0.05	385.65	449.41	EIA 2011-2012 Ref. Case
Mobile Home	Interior Lighting	Linear Lighting	1 lamps	New	0.68	17	\$12.72	100%	at stock turnover	\$1.89	9.22	9.22	7th Power Plan
Mobile Home	Interior Lighting	Exempted Screw-In	1 lamps	New	37.78	10	\$12.32	100%	at stock turnover	-\$0.01	319.77	314.23	EIA 2011-2012 Ref. Case
Mobile Home	Exterior Lighting	Screw-in	1 lamps	New	27.45	10	\$6.13	100%	at stock turnover	\$0.02	92.72	107.90	EIA 2011-2012 Ref. Case
Mobile Home	Appliances	Refrigerator	1 units	New	107.77	15	\$240.28	100%	at stock turnover	\$0.24	159.48	159.48	7th Power Plan
Mobile Home	Appliances	Second Refrigerator	1 units	New	150.47	15	\$240.28	29%	at stock turnover	\$0.17	74.08	74.08	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Mobile Home	Appliances	Freezer	1 units	New	122.94	22	\$83.03	60%	at stock turnover	\$0.06	106.73	106.73	RTF Workbook
Mobile Home	Appliances	Clothes Washer	1 units	New	9.19	14	\$194.20	100%	at stock turnover	-\$0.28	17.87	17.87	7th Power Plan
Mobile Home	Appliances	Clothes Dryer	1 units	New	134.94	16	\$308.00	82%	at stock turnover	\$0.24	127.31	127.31	7th Power Plan
Mobile Home	Appliances	Dishwasher	1 units	New	2.15	15	\$6.36	91%	at stock turnover	\$0.17	2.62	2.62	7th Power Plan
Mobile Home	Appliances	Stove/Oven	1 units	New	118.64	20	\$307.09	62%	at stock turnover	\$0.24	132.64	132.64	7th Power Plan
Mobile Home	Appliances	Microwave	1 units	New	8.12	11	\$4.63	99%	at stock turnover	\$0.07	15.43	15.43	7th Power Plan
Mobile Home	Electronics	Personal Computers	1 units	New	57.37	5	\$14.17	61%	at stock turnover	\$0.05	13.76	13.76	7th Power Plan
Mobile Home	Electronics	Monitor	1 units	New	56.18	8	\$8.21	73%	at stock turnover	\$0.02	8.73	8.73	7th Power Plan
Mobile Home	Electronics	Laptops	1 units	New	13.88	4	\$57.18	188%	at stock turnover	\$1.08	5.20	5.20	7th Power Plan
Mobile Home	Electronics	Printer/Fax/Copier	1 units	New	19.33	5	\$0.01	148%	at stock turnover	\$0.00	1.37	1.37	ENERGY STAR
Mobile Home	Electronics	TVs	1 units	New	21.92	6	\$0.01	293%	at stock turnover	\$0.00	19.14	19.14	ENERGY STAR
Mobile Home	Electronics	Set-top Boxes/DVRs	1 units	New	64.81	5	\$0.00	239%	at stock turnover	\$0.00	0.00	0.00	Voluntary Agreement
Mobile Home	Electronics	Devices and Gadgets	1 units	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Mobile Home	Miscellaneous	Electric Vehicles	1 units	New	116.75	10	\$770.00	0%	at stock turnover	\$0.88	2.99	2.99	7th Power Plan
Mobile Home	Miscellaneous	Pool Heater	1 units	New	0.00	15	\$3,546.07	0%	at stock turnover	\$0.00	0.00	0.00	AEG Research
Mobile Home	Miscellaneous	Pool Pump	1 units	New	702.98	15	\$872.94	2%	at stock turnover	\$0.13	20.76	20.76	Southern California Edison
Mobile Home	Miscellaneous	Hot Tub/Spa	1 units	New	169.51	15	\$350.00	8%	at stock turnover	\$0.22	14.36	14.36	AEG Research
Mobile Home	Miscellaneous	Furnace Fan	1 units	New	124.29	20	\$97.00	67%	at stock turnover	\$0.07	-6.43	4.47	DOE Rule: EERE-2010-BT-STD-0011
Mobile Home	Miscellaneous	Well Pump	1 units	New	0.00	5	\$0.00	68%	at stock turnover	\$0.00	0.00	0.00	N/A

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Mobile Home	Miscellaneous	Miscellaneous	1 units	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Single Family	Cooling	Insulation - Ceiling Installation	sqft roof	Existing	0.21	45	\$1.15	22%	38%	\$0.05	718.57	776.12	7th Power Plan
Single Family	Heating	Insulation - Ceiling Installation	sqft roof	Existing	1.63	45	\$1.15	22%	38%	\$0.05	2,455.58	2,476.43	7th Power Plan
Single Family	Cooling	Insulation - Ceiling Upgrade	sqft roof	Existing	0.03	45	\$1.01	22%	38%	\$0.19	101.77	115.09	7th Power Plan
Single Family	Heating	Insulation - Ceiling Upgrade	sqft roof	Existing	0.37	45	\$1.01	22%	38%	\$0.19	557.29	570.11	7th Power Plan
Single Family	Cooling	Insulation - Radiant Barrier	sqft roof	Existing	0.16	15	\$0.67	4%	19%	\$0.03	485.18	545.20	AEG Research
Single Family	Heating	Insulation - Radiant Barrier	sqft roof	Existing	2.02	15	\$0.67	4%	19%	\$0.03	2,815.43	2,856.97	AEG Research
Single Family	Cooling	Insulation - Wall Cavity Installation	sqft wall	Existing	0.03	45	\$1.42	40%	40%	\$0.07	0.00	0.00	7th Power Plan
Single Family	Heating	Insulation - Wall Cavity Installation	sqft wall	Existing	1.50	45	\$1.42	40%	40%	\$0.07	0.00	0.00	7th Power Plan
Single Family	Cooling	Insulation - Wall Sheathing	sqft wall	Existing	0.03	20	\$0.93	3%	3%	\$0.10	0.00	0.00	AEG-BEST
Single Family	Heating	Insulation - Wall Sheathing	sqft wall	Existing	0.77	20	\$0.93	3%	3%	\$0.10	0.00	0.00	AEG-BEST
Single Family	Cooling	Insulation - Floor Installation	sqft floor cs	Existing	-0.03	45	\$1.35	49%	60%	\$0.17	-35.92	-40.64	7th Power Plan
Single Family	Heating	Insulation - Floor Installation	sqft floor cs	Existing	0.66	45	\$1.35	49%	60%	\$0.17	334.20	341.59	7th Power Plan
Single Family	Cooling	Insulation - Floor Upgrade	sqft floor cs	Existing	0.00	25	\$3.39	0%	0%	\$1.59	0.00	0.00	7th Power Plan
Single Family	Heating	Insulation - Floor Upgrade	sqft floor cs	Existing	0.17	25	\$3.39	0%	0%	\$1.59	0.00	0.00	7th Power Plan
Single Family	Cooling	Insulation - Foundation	household	Existing	-24.97	70	\$1,241.19	2%	2%	\$0.16	0.00	0.00	RTF Workbook
Single Family	Heating	Insulation - Foundation	household	Existing	622.64	70	\$1,241.19	2%	2%	\$0.16	0.00	0.00	RTF Workbook
Single Family	Cooling	Insulation - Ducting	household	Existing	46.20	18	\$528.00	52%	60%	\$0.10	54.78	65.33	AEG-BEST
Single Family	Heating	Insulation - Ducting	household	Existing	456.84	18	\$528.00	52%	60%	\$0.10	103.87	110.36	AEG-BEST
Single Family	Cooling	Ducting - Repair and Sealing	household	Existing	48.19	20	\$769.57	31%	75%	\$0.10	331.57	393.56	7th Power Plan
Single Family	Heating	Ducting - Repair and Sealing	household	Existing	647.41	20	\$769.57	31%	75%	\$0.10	852.94	904.17	7th Power Plan
Single Family	Cooling	Building Shell - Infiltration Control	sqft home	Existing	0.00	15	\$0.68	35%	75%	\$0.19	64.55	76.82	7th Power Plan
Single Family	Heating	Building Shell - Infiltration Control	sqft home	Existing	0.34	15	\$0.68	35%	75%	\$0.19	2,493.98	2,758.68	7th Power Plan

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Single Family	Cooling	Windows - High Efficiency/ENERGY STAR	sqft window	Existing	0.54	45	\$19.01	34%	75%	\$0.20	778.79	882.06	7th Power Plan
Single Family	Heating	Windows - High Efficiency/ENERGY STAR	sqft window	Existing	6.63	45	\$19.01	34%	75%	\$0.20	4,251.60	4,358.97	7th Power Plan
Single Family	Cooling	Windows - Install Reflective Film	sqft window	Existing	0.04	45	\$3.38	16%	75%	\$0.32	74.64	86.00	7th Power Plan
Single Family	Heating	Windows - Install Reflective Film	sqft window	Existing	0.76	45	\$3.38	16%	75%	\$0.32	690.98	718.23	7th Power Plan
Single Family	Cooling	Doors - Storm and Thermal	household	Existing	8.42	20	\$682.67	60%	80%	\$0.25	36.93	43.92	AEG-BEST
Single Family	Heating	Doors - Storm and Thermal	household	Existing	217.22	20	\$682.67	60%	80%	\$0.25	419.91	463.88	AEG-BEST
Single Family	Cooling	Ductless Mini Split Heat Pump (Zonal)	household	Existing	98.26	15	\$3,448.86	1%	75%	\$0.16	349.05	399.75	7th Power Plan
Single Family	Heating	Ductless Mini Split Heat Pump (Zonal)	household	Existing	2,079.22	15	\$3,448.86	1%	75%	\$0.16	10,967.78	11,418.04	7th Power Plan
Single Family	Cooling	Ductless Mini Split Heat Pump (Ducted Forced Air)	household	Existing	94.93	15	\$3,517.21	1%	45%	\$0.10	571.56	668.29	7th Power Plan
Single Family	Heating	Ductless Mini Split Heat Pump (Ducted Forced Air)	household	Existing	3,352.45	15	\$3,517.21	1%	45%	\$0.10	1,310.50	1,361.24	7th Power Plan
Single Family	Cooling	Space Heating - Heat Recovery Ventilator	household	Existing	6.76	20	\$1,303.92	0%	0%	\$0.18	0.00	0.00	7th Power Plan
Single Family	Heating	Space Heating - Heat Recovery Ventilator	household	Existing	606.51	20	\$1,303.92	0%	0%	\$0.18	0.00	0.00	7th Power Plan
Single Family	Cooling	Furnace - Conversion to Air-Source Heat Pump	household	Existing	0.00	15	\$2,955.28	0%	0%	\$0.12	0.00	0.00	7th Power Plan
Single Family	Heating	Furnace - Conversion to Air-Source Heat Pump	household	Existing	2,428.12	15	\$2,955.28	0%	0%	\$0.12	0.00	0.00	7th Power Plan
Single Family	Cooling	Room AC - Removal of Second Unit	household	Existing	674.94	3	\$18.00	0%	50%	\$0.01	1,689.24	1,819.45	CA DEER
Single Family	Cooling	Central AC - Maintenance and Tune-Up	household	Existing	61.55	6	\$275.74	7%	75%	\$0.73	579.77	657.60	Illinois TRM
Single Family	Cooling	Central Heat Pump - Controls and Commissioning	household	Existing	0.63	15	\$581.99	65%	75%	\$0.06	0.12	0.14	7th Power Plan
Single Family	Heating	Central Heat Pump - Controls and Commissioning	household	Existing	1,064.97	15	\$581.99	65%	75%	\$0.06	225.53	231.11	7th Power Plan
Single Family	Cooling	Ceiling Fan - ENERGY STAR	ceiling fans	Existing	9.16	10	\$47.23	40%	75%	\$0.59	144.66	160.10	ENERGY STAR

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Single Family	Cooling	Whole-House Fan - Installation	household	Existing	36.94	20	\$714.44	15%	40%	\$1.54	140.70	174.27	California Public Utilities Commission
Single Family	Cooling	Thermostat - WiFi/Interactive	household	Existing	36.40	10	\$256.67	5%	75%	\$0.06	580.59	652.49	7th Power Plan
Single Family	Heating	Thermostat - WiFi/Interactive	household	Existing	472.68	10	\$256.67	5%	75%	\$0.06	3,367.00	3,471.44	7th Power Plan
Single Family	Water Heating	Water Heater - Drainwater Heat Recovery	household	Existing	198.84	40	\$837.67	0%	0%	\$0.30	0.00	0.00	7th Power Plan
Single Family	Water Heating	Water Heater - Faucet Aerators	aerators	Existing	100.08	15	\$5.13	34%	50%	\$0.01	633.45	775.89	7th Power Plan
Single Family	Water Heating	Water Heater - Low-Flow Showerheads	showerheads	Existing	217.56	10	\$26.56	51%	75%	\$0.01	1,244.67	1,656.24	7th Power Plan
Single Family	Water Heating	Water Heater - Pipe Insulation	feet pipe	Existing	22.52	15	\$3.26	12%	75%	\$0.01	951.00	1,250.53	Mid-Atlantic TRM
Single Family	Water Heating	Water Heater - Desuperheater	household	Existing	1,340.63	20	\$1,136.89	0%	0%	\$0.07	50.83	62.82	RTF Workbook
Single Family	Water Heating	Water Heater - Temperature Setback	household	Existing	67.68	2	\$5.00	41%	75%	\$0.03	307.01	416.53	Illinois TRM
Single Family	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	showerheads	Existing	26.02	10	\$19.30	16%	45%	\$0.09	181.37	245.49	RTF Workbook
Single Family	Water Heating	Water Heater - Solar System	household	Existing	993.50	20	\$8,847.45	2%	30%	\$0.73	2,361.81	2,957.35	7th Power Plan
Single Family	Interior Lighting	Interior Lighting - Occupancy Sensors	occ sens	Existing	78.71	8	\$99.16	0%	5%	\$0.14	229.72	414.38	Pacific Gas and Electric Research
Single Family	Exterior Lighting	Exterior Lighting - Photosensor Control	ext fixt	Existing	19.33	15	\$10.19	8%	50%	\$0.04	631.44	1,462.99	Michigan Energy Measures Database
Single Family	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	ext fixt pv	Existing	19.98	3	\$28.00	1%	30%	\$0.34	211.66	539.49	AEG Research
Single Family	Exterior Lighting	Exterior Lighting - Timeclock Installation	ext fixt	Existing	10.51	10	\$19.15	2%	50%	\$0.18	381.65	936.56	Ontario Power TRM
Single Family	Appliances	Refrigerator - Decommissioning and Recycling	household	Existing	298.38	6	\$143.58	0%	75%	\$0.09	3,326.04	3,700.78	PacifiCorp '13-'14 Evaluation
Single Family	Appliances	Freezer - Decommissioning and Recycling	household	Existing	286.40	5	\$143.58	0%	50%	\$0.10	4,162.82	4,728.61	PacifiCorp '13-'14 Evaluation
Single Family	Electronics	Advanced Power Strips - Tier 1	smart strip	Existing	28.85	5	\$15.83	8%	25%	\$0.12	434.17	424.17	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Single Family	Electronics	Advanced Power Strips - Tier 2	smart strip	Existing	182.69	5	\$50.49	8%	25%	\$0.06	2,810.41	2,683.38	7th Power Plan
Single Family	Miscellaneous	Pool Pump - Timer	household	Existing	450.32	10	\$85.22	1%	75%	\$0.03	243.46	250.31	Ontario Power TRM
Single Family	Miscellaneous	Pool Heater - Solar Water Heating System	household	Existing	1,916.25	20	\$3,767.92	0%	30%	\$0.18	41.62	42.87	AEG Research
Single Family	Cooling	ENERGY STAR Home Design	household	Existing	68.92	20	\$4,253.40	0%	0%	\$0.22	0.00	0.00	RTF Workbook
Single Family	Heating	ENERGY STAR Home Design	household	Existing	722.89	20	\$4,253.40	0%	0%	\$0.22	0.00	0.00	RTF Workbook
Single Family	Water Heating	ENERGY STAR Home Design	household	Existing	414.42	20	\$4,253.40	0%	0%	\$0.22	0.00	0.00	RTF Workbook
Single Family	Interior Lighting	ENERGY STAR Home Design	household	Existing	291.47	20	\$4,253.40	0%	0%	\$0.22	0.00	0.00	RTF Workbook
Single Family	Cooling	Behavioral Programs	household	Existing	0.46	1	\$5.00	14%	35%	\$0.52	3.80	4.72	AEG Research
Single Family	Heating	Behavioral Programs	household	Existing	2.42	1	\$5.00	14%	35%	\$0.52	20.85	23.92	AEG Research
Single Family	Water Heating	Behavioral Programs	household	Existing	0.74	1	\$5.00	14%	35%	\$0.52	4.95	8.20	AEG Research
Single Family	Interior Lighting	Behavioral Programs	household	Existing	0.61	1	\$5.00	14%	35%	\$0.52	3.83	8.92	AEG Research
Single Family	Exterior Lighting	Behavioral Programs	household	Existing	0.15	1	\$5.00	14%	35%	\$0.52	0.73	2.68	AEG Research
Single Family	Appliances	Behavioral Programs	household	Existing	1.66	1	\$5.00	14%	35%	\$0.52	13.24	16.65	AEG Research
Single Family	Electronics	Behavioral Programs	household	Existing	0.85	1	\$5.00	14%	35%	\$0.52	7.69	7.91	AEG Research
Single Family	Miscellaneous	Behavioral Programs	household	Existing	0.91	1	\$5.00	14%	35%	\$0.52	8.43	8.02	AEG Research
Single Family	Interior Lighting	Interior Lighting - General Service CFLs	GSL lamp	Existing	9.00	9	-\$0.13	0%	51%	\$0.00	672.75	2,146.89	RTF Workbook
Single Family	Interior Lighting	Interior Lighting - Exempted CFLs	Exempt lamp	Existing	15.65	5	-\$2.74	0%	51%	-\$0.02	1,156.69	1,540.14	RTF Workbook
Single Family	Cooling	Insulation - Ceiling Installation	sqft roof	New	0.22	45	\$1.15	16%	38%	\$0.07	135.11	143.61	7th Power Plan
Single Family	Heating	Insulation - Ceiling Installation	sqft roof	New	1.07	45	\$1.15	16%	38%	\$0.07	136.61	139.72	7th Power Plan
Single Family	Cooling	Insulation - Ceiling Upgrade	sqft roof	New	0.03	45	\$1.01	16%	38%	\$0.27	20.74	22.01	7th Power Plan
Single Family	Heating	Insulation - Ceiling Upgrade	sqft roof	New	0.24	45	\$1.01	16%	38%	\$0.27	31.25	31.89	7th Power Plan
Single Family	Cooling	Insulation - Radiant Barrier	sqft roof	New	0.17	15	\$0.67	1%	5%	\$0.05	17.18	18.27	AEG Research
Single Family	Heating	Insulation - Radiant Barrier	sqft roof	New	1.31	15	\$0.67	1%	5%	\$0.05	27.40	27.98	AEG Research
Single Family	Cooling	Insulation - Wall Cavity Installation	sqft wall	New	0.03	45	\$1.42	80%	80%	\$0.11	0.00	0.00	7th Power Plan

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Single Family	Heating	Insulation - Wall Cavity Installation	sqft wall	New	0.97	45	\$1.42	80%	80%	\$0.11	0.00	0.00	7th Power Plan
Single Family	Cooling	Insulation - Wall Sheathing	sqft wall	New	0.03	20	\$0.93	2%	20%	\$0.15	26.35	27.91	AEG-BEST
Single Family	Heating	Insulation - Wall Sheathing	sqft wall	New	0.51	20	\$0.93	2%	20%	\$0.15	94.32	96.21	AEG-BEST
Single Family	Cooling	Insulation - Floor Installation	sqft floor cs	New	-0.04	45	\$1.35	76%	76%	\$0.26	-0.19	-0.20	7th Power Plan
Single Family	Heating	Insulation - Floor Installation	sqft floor cs	New	0.43	45	\$1.35	76%	76%	\$0.26	0.49	0.50	7th Power Plan
Single Family	Cooling	Insulation - Floor Upgrade	sqft floor cs	New	0.00	25	\$3.39	0%	0%	\$2.40	0.00	0.00	7th Power Plan
Single Family	Heating	Insulation - Floor Upgrade	sqft floor cs	New	0.12	25	\$3.39	0%	0%	\$2.40	0.00	0.00	7th Power Plan
Single Family	Cooling	Insulation - Foundation	household	New	-30.41	70	\$1,241.19	9%	75%	\$0.13	-60.97	-64.68	RTF Workbook
Single Family	Heating	Insulation - Foundation	household	New	745.99	70	\$1,241.19	9%	75%	\$0.13	314.81	321.78	RTF Workbook
Single Family	Cooling	Insulation - Ducting	household	New	44.78	18	\$528.00	79%	80%	\$0.14	0.98	1.04	AEG-BEST
Single Family	Heating	Insulation - Ducting	household	New	305.03	18	\$528.00	79%	80%	\$0.14	1.02	1.05	AEG-BEST
Single Family	Cooling	Ducting - Repair and Sealing	household	New	47.33	20	\$769.57	31%	75%	\$0.14	59.89	63.76	7th Power Plan
Single Family	Heating	Ducting - Repair and Sealing	household	New	441.04	20	\$769.57	31%	75%	\$0.14	84.89	87.79	7th Power Plan
Single Family	Cooling	Building Shell - Infiltration Control	sqft home	New	0.00	15	\$0.68	71%	75%	\$0.28	1.07	1.14	7th Power Plan
Single Family	Heating	Building Shell - Infiltration Control	sqft home	New	0.23	15	\$0.68	71%	75%	\$0.28	11.64	11.93	7th Power Plan
Single Family	Cooling	Windows - High Efficiency/ENERGY STAR	sqft window	New	0.61	45	\$19.01	47%	75%	\$0.29	77.54	82.28	7th Power Plan
Single Family	Heating	Windows - High Efficiency/ENERGY STAR	sqft window	New	4.35	45	\$19.01	47%	75%	\$0.29	116.63	118.98	7th Power Plan
Single Family	Cooling	Windows - Install Reflective Film	sqft window	New	0.04	45	\$3.38	16%	75%	\$0.46	11.33	11.99	7th Power Plan
Single Family	Heating	Windows - Install Reflective Film	sqft window	New	0.50	45	\$3.38	16%	75%	\$0.46	28.41	28.96	7th Power Plan
Single Family	Cooling	Doors - Storm and Thermal	household	New	3.84	20	\$682.67	70%	80%	\$0.69	1.13	1.21	AEG-BEST
Single Family	Heating	Doors - Storm and Thermal	household	New	79.25	20	\$682.67	70%	80%	\$0.69	4.90	5.07	AEG-BEST
Single Family	Cooling	Ductless Mini Split Heat Pump (Zonal)	household	New	133.66	15	\$3,448.86	1%	75%	\$0.20	16.94	17.87	7th Power Plan

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Single Family	Heating	Ductless Mini Split Heat Pump (Zonal)	household	New	1,537.22	15	\$3,448.86	1%	75%	\$0.20	274.13	274.72	7th Power Plan
Single Family	Cooling	Ductless Mini Split Heat Pump (Ducted Forced Air)	household	New	96.05	15	\$3,517.21	1%	45%	\$0.14	133.92	141.31	7th Power Plan
Single Family	Heating	Ductless Mini Split Heat Pump (Ducted Forced Air)	household	New	2,505.17	15	\$3,517.21	1%	45%	\$0.14	190.63	191.38	7th Power Plan
Single Family	Cooling	Space Heating - Heat Recovery Ventilator	household	New	6.73	20	\$1,303.92	0%	0%	\$0.27	0.00	0.00	7th Power Plan
Single Family	Heating	Space Heating - Heat Recovery Ventilator	household	New	412.75	20	\$1,303.92	0%	0%	\$0.27	0.00	0.00	7th Power Plan
Single Family	Cooling	Furnace - Conversion to Air-Source Heat Pump	household	New	0.00	15	\$2,955.28	0%	0%	\$0.20	0.00	0.00	7th Power Plan
Single Family	Heating	Furnace - Conversion to Air-Source Heat Pump	household	New	1,489.34	15	\$2,955.28	0%	0%	\$0.20	0.00	0.00	7th Power Plan
Single Family	Cooling	Room AC - Removal of Second Unit	household	New	859.40	3	\$18.00	25%	50%	\$0.01	6.31	6.88	CA DEER
Single Family	Cooling	Central AC - Maintenance and Tune-Up	household	New	62.24	6	\$275.74	45%	75%	\$0.76	14.08	15.45	Illinois TRM
Single Family	Cooling	Central Heat Pump - Controls and Commissioning	household	New	0.61	15	\$581.99	25%	75%	\$0.09	0.11	0.11	7th Power Plan
Single Family	Heating	Central Heat Pump - Controls and Commissioning	household	New	658.80	15	\$581.99	25%	75%	\$0.09	120.86	121.26	7th Power Plan
Single Family	Cooling	Ceiling Fan - ENERGY STAR	ceiling fans	New	11.63	10	\$47.23	50%	75%	\$0.49	13.62	14.38	ENERGY STAR
Single Family	Cooling	Whole-House Fan - Installation	household	New	41.15	20	\$714.44	15%	40%	\$1.45	29.30	31.50	California Public Utilities Commission
Single Family	Cooling	Thermostat - WiFi/Interactive	household	New	41.20	10	\$256.67	5%	75%	\$0.09	90.92	96.03	7th Power Plan
Single Family	Heating	Thermostat - WiFi/Interactive	household	New	308.35	10	\$256.67	5%	75%	\$0.09	142.33	144.51	7th Power Plan
Single Family	Water Heating	Water Heater - Drainwater Heat Recovery	household	New	210.90	40	\$837.67	1%	10%	\$0.29	38.11	42.81	7th Power Plan
Single Family	Water Heating	Water Heater - Faucet Aerators	aerators	New	102.91	15	\$5.13	43%	50%	\$0.00	34.17	39.86	7th Power Plan
Single Family	Water Heating	Water Heater - Low-Flow Showerheads	showerheads	New	226.63	10	\$26.56	65%	75%	\$0.01	33.51	41.75	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Single Family	Water Heating	Water Heater - Pipe Insulation	feet pipe	New	23.28	15	\$3.26	12%	75%	\$0.01	78.72	96.15	Mid-Atlantic TRM
Single Family	Water Heating	Water Heater - Desuperheater	household	New	1,210.91	20	\$1,136.89	0%	0%	\$0.08	6.43	7.18	RTF Workbook
Single Family	Water Heating	Water Heater - Temperature Setback	household	New	71.77	2	\$5.00	51%	75%	\$0.03	1.69	2.22	Illinois TRM
Single Family	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	showerheads	New	27.55	10	\$19.30	16%	45%	\$0.08	12.20	15.24	RTF Workbook
Single Family	Water Heating	Water Heater - Solar System	household	New	963.34	20	\$8,847.45	2%	30%	\$0.76	312.29	354.85	7th Power Plan
Single Family	Interior Lighting	Interior Lighting - Occupancy Sensors	occ sens	New	86.57	8	\$99.16	0%	5%	\$0.12	21.31	34.32	Pacific Gas and Electric Research
Single Family	Exterior Lighting	Exterior Lighting - Photosensor Control	ext fixt	New	18.05	15	\$10.19	3%	50%	\$0.04	96.59	175.10	Michigan Energy Measures Database
Single Family	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	ext fixt pv	New	11.39	3	\$28.00	1%	30%	\$0.57	3.15	9.97	AEG Research
Single Family	Exterior Lighting	Exterior Lighting - Timeclock Installation	ext fixt	New	13.86	10	\$19.15	0%	50%	\$0.13	60.96	123.55	Ontario Power TRM
Single Family	Appliances	Refrigerator - Decommissioning and Recycling	household	New	280.71	6	\$143.58	0%	75%	\$0.09	192.32	206.69	PacificCorp '13-'14 Evaluation
Single Family	Appliances	Freezer - Decommissioning and Recycling	household	New	273.01	5	\$143.58	0%	50%	\$0.11	194.54	209.35	PacificCorp '13-'14 Evaluation
Single Family	Electronics	Advanced Power Strips - Tier 1	smart strip	New	31.64	5	\$15.83	8%	25%	\$0.11	37.82	34.49	7th Power Plan
Single Family	Electronics	Advanced Power Strips - Tier 2	smart strip	New	196.87	5	\$50.49	8%	25%	\$0.06	235.32	214.90	7th Power Plan
Single Family	Miscellaneous	Pool Pump - Timer	household	New	483.21	10	\$85.22	1%	75%	\$0.02	34.42	34.81	Ontario Power TRM
Single Family	Miscellaneous	Pool Heater - Solar Water Heating System	household	New	1,877.32	20	\$3,767.92	0%	30%	\$0.19	6.35	6.42	AEG Research
Single Family	Cooling	ENERGY STAR Home Design	household	New	80.31	20	\$4,253.40	15%	75%	\$0.25	253.63	259.41	RTF Workbook
Single Family	Heating	ENERGY STAR Home Design	household	New	499.95	20	\$4,253.40	15%	75%	\$0.25	316.07	316.84	RTF Workbook
Single Family	Water Heating	ENERGY STAR Home Design	household	New	406.52	20	\$4,253.40	15%	75%	\$0.25	432.97	489.33	RTF Workbook
Single Family	Interior Lighting	ENERGY STAR Home Design	household	New	321.55	20	\$4,253.40	15%	75%	\$0.25	1,312.91	1,490.82	RTF Workbook
Single Family	Cooling	Behavioral Programs	household	New	0.71	1	\$5.00	14%	35%	\$0.51	0.37	0.37	AEG Research

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Single Family	Heating	Behavioral Programs	household	New	1.06	1	\$5.00	14%	35%	\$0.51	0.52	0.59	AEG Research
Single Family	Water Heating	Behavioral Programs	household	New	0.58	1	\$5.00	14%	35%	\$0.51	0.24	0.36	AEG Research
Single Family	Interior Lighting	Behavioral Programs	household	New	0.83	1	\$5.00	14%	35%	\$0.51	0.30	0.71	AEG Research
Single Family	Exterior Lighting	Behavioral Programs	household	New	0.22	1	\$5.00	14%	35%	\$0.51	0.07	0.23	AEG Research
Single Family	Appliances	Behavioral Programs	household	New	1.95	1	\$5.00	14%	35%	\$0.51	0.94	1.06	AEG Research
Single Family	Electronics	Behavioral Programs	household	New	1.30	1	\$5.00	14%	35%	\$0.51	0.71	0.66	AEG Research
Single Family	Miscellaneous	Behavioral Programs	household	New	1.27	1	\$5.00	14%	35%	\$0.51	0.68	0.64	AEG Research
Single Family	Interior Lighting	Interior Lighting - General Service CFLs	GSL lamp	New	8.58	9	-\$0.13	0%	51%	\$0.00	111.55	333.38	RTF Workbook
Single Family	Interior Lighting	Interior Lighting - Exempted CFLs	Exempt lamp	New	15.13	5	-\$2.74	0%	51%	-\$0.02	133.16	176.76	RTF Workbook
Multifamily	Cooling	Insulation - Ceiling Installation	sqft roof - mf	Existing	0.14	45	\$0.75	14%	38%	\$0.08	60.74	68.13	7th Power Plan
Multifamily	Heating	Insulation - Ceiling Installation	sqft roof - mf	Existing	0.63	45	\$0.75	14%	38%	\$0.08	339.10	342.57	7th Power Plan
Multifamily	Cooling	Insulation - Ceiling Upgrade	sqft roof - mf	Existing	0.02	45	\$1.01	14%	38%	\$0.54	7.54	9.68	7th Power Plan
Multifamily	Heating	Insulation - Ceiling Upgrade	sqft roof - mf	Existing	0.11	45	\$1.01	14%	38%	\$0.54	58.05	62.75	7th Power Plan
Multifamily	Cooling	Insulation - Radiant Barrier	sqft roof - mf	Existing	0.10	15	\$0.67	4%	19%	\$0.09	23.92	30.45	AEG Research
Multifamily	Heating	Insulation - Radiant Barrier	sqft roof - mf	Existing	0.60	15	\$0.67	4%	19%	\$0.09	194.55	208.50	AEG Research
Multifamily	Cooling	Insulation - Wall Cavity Installation	sqft wall	Existing	0.02	45	\$1.06	40%	40%	\$0.06	0.00	0.00	7th Power Plan
Multifamily	Heating	Insulation - Wall Cavity Installation	sqft wall	Existing	1.28	45	\$1.06	40%	40%	\$0.06	0.00	0.00	7th Power Plan
Multifamily	Cooling	Insulation - Wall Sheathing	sqft wall	Existing	0.01	20	\$0.93	15%	15%	\$0.40	0.00	0.00	AEG-BEST
Multifamily	Heating	Insulation - Wall Sheathing	sqft wall	Existing	0.18	20	\$0.93	15%	15%	\$0.40	0.00	0.00	AEG-BEST
Multifamily	Cooling	Insulation - Floor Installation	sqft floor cs - mh	Existing	-0.01	45	\$1.01	14%	60%	\$0.11	-9.20	-10.50	7th Power Plan
Multifamily	Heating	Insulation - Floor Installation	sqft floor cs - mh	Existing	0.73	45	\$1.01	14%	60%	\$0.11	763.24	781.18	7th Power Plan
Multifamily	Cooling	Insulation - Floor Upgrade	sqft floor cs - mh	Existing	0.00	25	\$3.39	0%	0%	\$9.90	0.00	0.00	7th Power Plan

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Multifamily	Heating	Insulation - Floor Upgrade	sqft floor cs - mh	Existing	0.03	25	\$3.39	0%	0%	\$9.90	0.00	0.00	7th Power Plan
Multifamily	Cooling	Insulation - Foundation	household	Existing	-8.43	70	\$1,241.19	0%	0%	\$0.55	0.00	0.00	RTF Workbook
Multifamily	Heating	Insulation - Foundation	household	Existing	165.60	70	\$1,241.19	0%	0%	\$0.55	0.00	0.00	RTF Workbook
Multifamily	Cooling	Insulation - Ducting	household	Existing	5.60	18	\$528.00	3%	60%	\$1.08	6.76	9.52	AEG-BEST
Multifamily	Heating	Insulation - Ducting	household	Existing	34.38	18	\$528.00	3%	60%	\$1.08	33.62	38.83	AEG-BEST
Multifamily	Cooling	Ducting - Repair and Sealing	household	Existing	13.27	20	\$384.79	31%	75%	\$0.26	12.73	17.03	7th Power Plan
Multifamily	Heating	Ducting - Repair and Sealing	household	Existing	111.85	20	\$384.79	31%	75%	\$0.26	86.69	95.05	7th Power Plan
Multifamily	Cooling	Building Shell - Infiltration Control	sqft home	Existing	0.00	15	\$0.68	50%	75%	\$0.57	2.00	2.65	7th Power Plan
Multifamily	Heating	Building Shell - Infiltration Control	sqft home	Existing	0.11	15	\$0.68	50%	75%	\$0.57	115.02	127.12	7th Power Plan
Multifamily	Cooling	Windows - High Efficiency/ENERGY STAR	sqft window	Existing	0.26	45	\$18.29	27%	75%	\$0.72	44.50	57.50	7th Power Plan
Multifamily	Heating	Windows - High Efficiency/ENERGY STAR	sqft window	Existing	1.52	45	\$18.29	27%	75%	\$0.72	342.37	372.40	7th Power Plan
Multifamily	Cooling	Windows - Install Reflective Film	sqft window	Existing	0.02	45	\$5.61	34%	75%	\$0.23	2.73	3.47	7th Power Plan
Multifamily	Heating	Windows - Install Reflective Film	sqft window	Existing	1.78	45	\$5.61	34%	75%	\$0.23	348.19	367.65	7th Power Plan
Multifamily	Cooling	Doors - Storm and Thermal	household	Existing	2.56	20	\$682.67	70%	80%	\$1.50	0.87	1.21	AEG-BEST
Multifamily	Heating	Doors - Storm and Thermal	household	Existing	31.70	20	\$682.67	70%	80%	\$1.50	14.13	16.81	AEG-BEST
Multifamily	Cooling	Ductless Mini Split Heat Pump (Zonal)	household	Existing	53.58	15	\$3,448.86	1%	75%	\$0.91	49.37	59.52	7th Power Plan
Multifamily	Heating	Ductless Mini Split Heat Pump (Zonal)	household	Existing	284.89	15	\$3,448.86	1%	75%	\$0.91	625.78	686.97	7th Power Plan
Multifamily	Cooling	Ductless Mini Split Heat Pump (Ducted Forced Air)	household	Existing	25.71	15	\$3,517.21	1%	45%	\$0.66	21.16	27.98	7th Power Plan
Multifamily	Heating	Ductless Mini Split Heat Pump (Ducted Forced Air)	household	Existing	466.17	15	\$3,517.21	1%	45%	\$0.66	285.93	310.15	7th Power Plan
Multifamily	Cooling	Space Heating - Heat Recovery Ventilator	household	Existing	1.83	20	\$1,303.92	0%	0%	\$1.00	0.00	0.00	7th Power Plan
Multifamily	Heating	Space Heating - Heat Recovery Ventilator	household	Existing	101.05	20	\$1,303.92	0%	0%	\$1.00	0.00	0.00	7th Power Plan
Multifamily	Cooling	Furnace - Conversion to Air-Source Heat Pump	household	Existing	0.00	15	\$2,955.28	0%	0%	\$0.93	0.00	0.00	7th Power Plan

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Multifamily	Heating	Furnace - Conversion to Air-Source Heat Pump	household	Existing	298.47	15	\$2,955.28	0%	0%	\$0.93	0.00	0.00	7th Power Plan
Multifamily	Cooling	Room AC - Removal of Second Unit	household	Existing	399.93	3	\$18.00	0%	50%	\$0.01	272.93	285.45	CA DEER
Multifamily	Cooling	Central AC - Maintenance and Tune-Up	household	Existing	16.53	6	\$275.74	1%	75%	\$2.43	22.39	28.08	Illinois TRM
Multifamily	Cooling	Central Heat Pump - Controls and Commissioning	household	Existing	0.16	15	\$581.99	65%	75%	\$0.40	0.00	0.01	7th Power Plan
Multifamily	Heating	Central Heat Pump - Controls and Commissioning	household	Existing	135.84	15	\$581.99	65%	75%	\$0.40	4.43	4.87	7th Power Plan
Multifamily	Cooling	Ceiling Fan - ENERGY STAR	ceiling fans	Existing	8.95	10	\$47.23	40%	75%	\$0.57	22.17	26.32	ENERGY STAR
Multifamily	Cooling	Whole-House Fan - Installation	household	Existing	11.00	20	\$714.44	2%	10%	\$4.62	1.94	2.81	California Public Utilities Commission
Multifamily	Cooling	Thermostat - WiFi/Interactive	household	Existing	11.18	10	\$256.67	5%	50%	\$0.37	17.84	22.74	7th Power Plan
Multifamily	Heating	Thermostat - WiFi/Interactive	household	Existing	69.24	10	\$256.67	5%	50%	\$0.37	145.99	158.17	7th Power Plan
Multifamily	Water Heating	Water Heater - Drainwater Heat Recovery	household	Existing	145.77	40	\$837.67	0%	0%	\$0.40	0.00	0.00	7th Power Plan
Multifamily	Water Heating	Water Heater - Faucet Aerators	aerators	Existing	49.30	15	\$5.13	13%	50%	\$0.01	118.05	145.00	7th Power Plan
Multifamily	Water Heating	Water Heater - Low-Flow Showerheads	showerheads	Existing	153.90	10	\$26.56	19%	75%	\$0.02	365.68	488.97	7th Power Plan
Multifamily	Water Heating	Water Heater - Pipe Insulation	feet pipe	Existing	16.84	15	\$3.26	12%	75%	\$0.02	173.90	229.31	Mid-Atlantic TRM
Multifamily	Water Heating	Water Heater - Desuperheater	household	Existing	893.50	20	\$1,136.89	0%	0%	\$0.10	0.00	0.00	RTF Workbook
Multifamily	Water Heating	Water Heater - Temperature Setback	household	Existing	49.61	2	\$5.00	41%	75%	\$0.04	54.51	75.38	Illinois TRM
Multifamily	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	showerheads	Existing	25.63	10	\$19.30	16%	45%	\$0.09	31.43	43.34	RTF Workbook
Multifamily	Water Heating	Water Heater - Solar System	household	Existing	661.94	20	\$8,847.45	1%	10%	\$1.07	117.03	148.65	7th Power Plan
Multifamily	Interior Lighting	Interior Lighting - Occupancy Sensors	occ sens	Existing	74.73	8	\$99.16	0%	10%	\$0.16	39.05	77.80	Pacific Gas and Electric Research

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Multifamily	Exterior Lighting	Exterior Lighting - Photosensor Control	ext fixt	Existing	15.64	15	\$10.19	1%	50%	\$0.06	38.98	89.29	Michigan Energy Measures Database
Multifamily	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	ext fixt pv	Existing	21.14	3	\$28.00	1%	30%	\$0.32	14.73	36.83	AEG Research
Multifamily	Exterior Lighting	Exterior Lighting - Timeclock Installation	ext fixt	Existing	11.11	10	\$19.15	1%	50%	\$0.17	26.92	64.84	Ontario Power TRM
Multifamily	Appliances	Refrigerator - Decommissioning and Recycling	household	Existing	297.35	6	\$143.58	0%	75%	\$0.09	82.37	92.00	PacifiCorp '13-'14 Evaluation
Multifamily	Appliances	Freezer - Decommissioning and Recycling	household	Existing	290.39	5	\$143.58	0%	50%	\$0.10	145.37	163.68	PacifiCorp '13-'14 Evaluation
Multifamily	Electronics	Advanced Power Strips - Tier 1	smart strip	Existing	28.40	5	\$15.83	8%	25%	\$0.12	79.42	78.59	7th Power Plan
Multifamily	Electronics	Advanced Power Strips - Tier 2	smart strip	Existing	182.81	5	\$50.49	8%	25%	\$0.06	530.62	504.97	7th Power Plan
Multifamily	Miscellaneous	Pool Pump - Timer	household	Existing	0.00	10	\$85.22	1%	75%	\$0.00	0.00	0.00	Ontario Power TRM
Multifamily	Miscellaneous	Pool Heater - Solar Water Heating System	household	Existing	0.00	20	\$3,767.92	0%	30%	\$0.00	0.00	0.00	AEG Research
Multifamily	Cooling	ENERGY STAR Home Design	household	Existing	21.57	20	\$4,253.40	0%	0%	\$0.62	0.00	0.00	RTF Workbook
Multifamily	Heating	ENERGY STAR Home Design	household	Existing	111.59	20	\$4,253.40	0%	0%	\$0.62	0.00	0.00	RTF Workbook
Multifamily	Water Heating	ENERGY STAR Home Design	household	Existing	282.07	20	\$4,253.40	0%	0%	\$0.62	0.00	0.00	RTF Workbook
Multifamily	Interior Lighting	ENERGY STAR Home Design	household	Existing	107.93	20	\$4,253.40	0%	0%	\$0.62	0.00	0.00	RTF Workbook
Multifamily	Cooling	Behavioral Programs	household	Existing	0.25	1	\$5.00	14%	35%	\$0.53	0.35	0.55	AEG Research
Multifamily	Heating	Behavioral Programs	household	Existing	1.79	1	\$5.00	14%	35%	\$0.53	2.76	3.68	AEG Research
Multifamily	Water Heating	Behavioral Programs	household	Existing	1.29	1	\$5.00	14%	35%	\$0.53	1.68	2.74	AEG Research
Multifamily	Interior Lighting	Behavioral Programs	household	Existing	0.45	1	\$5.00	14%	35%	\$0.53	0.51	1.33	AEG Research
Multifamily	Exterior Lighting	Behavioral Programs	household	Existing	0.12	1	\$5.00	14%	35%	\$0.53	0.11	0.39	AEG Research
Multifamily	Appliances	Behavioral Programs	household	Existing	2.34	1	\$5.00	14%	35%	\$0.53	3.67	4.38	AEG Research
Multifamily	Electronics	Behavioral Programs	household	Existing	1.05	1	\$5.00	14%	35%	\$0.53	1.80	1.91	AEG Research
Multifamily	Miscellaneous	Behavioral Programs	household	Existing	0.23	1	\$5.00	14%	35%	\$0.53	0.39	0.41	AEG Research
Multifamily	Interior Lighting	Interior Lighting - General Service CFLs	GSL lamp	Existing	6.36	9	-\$0.13	0%	44%	\$0.00	56.46	168.89	RTF Workbook

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Multifamily	Interior Lighting	Interior Lighting - Exempted CFLs	Exempt lamp	Existing	16.19	5	-\$2.74	0%	44%	-\$0.02	21.31	27.40	RTF Workbook
Multifamily	Cooling	Insulation - Ceiling Installation	sqft roof - mf	New	0.11	45	\$0.75	9%	38%	\$0.12	14.41	16.37	7th Power Plan
Multifamily	Heating	Insulation - Ceiling Installation	sqft roof - mf	New	0.38	45	\$0.75	9%	38%	\$0.12	51.77	52.10	7th Power Plan
Multifamily	Cooling	Insulation - Ceiling Upgrade	sqft roof - mf	New	0.02	45	\$1.01	9%	38%	\$0.86	2.19	2.48	7th Power Plan
Multifamily	Heating	Insulation - Ceiling Upgrade	sqft roof - mf	New	0.07	45	\$1.01	9%	38%	\$0.86	9.77	9.81	7th Power Plan
Multifamily	Cooling	Insulation - Radiant Barrier	sqft roof - mf	New	0.08	15	\$0.67	1%	5%	\$0.15	1.40	1.58	AEG Research
Multifamily	Heating	Insulation - Radiant Barrier	sqft roof - mf	New	0.38	15	\$0.67	1%	5%	\$0.15	6.59	6.62	AEG Research
Multifamily	Cooling	Insulation - Wall Cavity Installation	sqft wall	New	0.01	45	\$1.06	80%	80%	\$0.11	0.00	0.00	7th Power Plan
Multifamily	Heating	Insulation - Wall Cavity Installation	sqft wall	New	0.78	45	\$1.06	80%	80%	\$0.11	0.00	0.00	7th Power Plan
Multifamily	Cooling	Insulation - Wall Sheathing	sqft wall	New	0.01	20	\$0.93	15%	20%	\$0.65	0.58	0.65	AEG-BEST
Multifamily	Heating	Insulation - Wall Sheathing	sqft wall	New	0.11	20	\$0.93	15%	20%	\$0.65	6.14	6.16	AEG-BEST
Multifamily	Cooling	Insulation - Floor Installation	sqft floor cs - mh	New	-0.01	45	\$1.01	31%	75%	\$0.18	-1.77	-2.00	7th Power Plan
Multifamily	Heating	Insulation - Floor Installation	sqft floor cs - mh	New	0.44	45	\$1.01	31%	75%	\$0.18	93.83	94.36	7th Power Plan
Multifamily	Cooling	Insulation - Floor Upgrade	sqft floor cs - mh	New	0.00	25	\$3.39	0%	0%	\$16.38	0.00	0.00	7th Power Plan
Multifamily	Heating	Insulation - Floor Upgrade	sqft floor cs - mh	New	0.02	25	\$3.39	0%	0%	\$16.38	0.00	0.00	7th Power Plan
Multifamily	Cooling	Insulation - Foundation	household	New	-7.12	70	\$1,241.19	0%	0%	\$0.92	0.00	0.00	RTF Workbook
Multifamily	Heating	Insulation - Foundation	household	New	106.28	70	\$1,241.19	0%	0%	\$0.92	0.00	0.00	RTF Workbook
Multifamily	Cooling	Insulation - Ducting	household	New	4.12	18	\$528.00	15%	80%	\$1.89	2.31	2.62	AEG-BEST
Multifamily	Heating	Insulation - Ducting	household	New	20.35	18	\$528.00	15%	80%	\$1.89	8.05	8.17	AEG-BEST
Multifamily	Cooling	Ducting - Repair and Sealing	household	New	10.76	20	\$384.79	31%	75%	\$0.40	4.10	4.60	7th Power Plan
Multifamily	Heating	Ducting - Repair and Sealing	household	New	73.63	20	\$384.79	31%	75%	\$0.40	19.88	19.84	7th Power Plan
Multifamily	Cooling	Building Shell - Infiltration Control	sqft home	New	0.00	15	\$0.68	73%	75%	\$0.94	0.04	0.05	7th Power Plan

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Multifamily	Heating	Building Shell - Infiltration Control	sqft home	New	0.07	15	\$0.68	73%	75%	\$0.94	1.42	1.44	7th Power Plan
Multifamily	Cooling	Windows - High Efficiency/ENERGY STAR	sqft window	New	0.22	45	\$18.29	37%	75%	\$1.13	8.48	9.58	7th Power Plan
Multifamily	Heating	Windows - High Efficiency/ENERGY STAR	sqft window	New	0.98	45	\$18.29	37%	75%	\$1.13	37.68	37.82	7th Power Plan
Multifamily	Cooling	Windows - Install Reflective Film	sqft window	New	0.02	45	\$5.61	53%	75%	\$0.38	0.35	0.40	7th Power Plan
Multifamily	Heating	Windows - Install Reflective Film	sqft window	New	1.11	45	\$5.61	53%	75%	\$0.38	25.19	25.31	7th Power Plan
Multifamily	Cooling	Doors - Storm and Thermal	household	New	0.89	20	\$682.67	80%	80%	\$4.62	0.00	0.00	AEG-BEST
Multifamily	Heating	Doors - Storm and Thermal	household	New	11.49	20	\$682.67	80%	80%	\$4.62	0.00	0.00	AEG-BEST
Multifamily	Cooling	Ductless Mini Split Heat Pump (Zonal)	household	New	51.87	15	\$3,448.86	6%	75%	\$1.46	7.01	7.86	7th Power Plan
Multifamily	Heating	Ductless Mini Split Heat Pump (Zonal)	household	New	176.86	15	\$3,448.86	6%	75%	\$1.46	65.44	65.48	7th Power Plan
Multifamily	Cooling	Ductless Mini Split Heat Pump (Ducted Forced Air)	household	New	21.15	15	\$3,517.21	6%	45%	\$1.13	8.51	9.52	7th Power Plan
Multifamily	Heating	Ductless Mini Split Heat Pump (Ducted Forced Air)	household	New	288.38	15	\$3,517.21	6%	45%	\$1.13	81.10	81.16	7th Power Plan
Multifamily	Cooling	Space Heating - Heat Recovery Ventilator	household	New	1.51	20	\$1,303.92	0%	0%	\$1.61	0.00	0.00	7th Power Plan
Multifamily	Heating	Space Heating - Heat Recovery Ventilator	household	New	67.67	20	\$1,303.92	0%	0%	\$1.61	0.00	0.00	7th Power Plan
Multifamily	Cooling	Furnace - Conversion to Air-Source Heat Pump	household	New	0.00	15	\$2,955.28	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Multifamily	Heating	Furnace - Conversion to Air-Source Heat Pump	household	New	0.00	15	\$2,955.28	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Multifamily	Cooling	Room AC - Removal of Second Unit	household	New	334.78	3	\$18.00	25%	50%	\$0.02	2.83	3.31	CA DEER
Multifamily	Cooling	Central AC - Maintenance and Tune-Up	household	New	13.90	6	\$275.74	45%	75%	\$3.22	1.03	1.21	Illinois TRM
Multifamily	Cooling	Central Heat Pump - Controls and Commissioning	household	New	0.13	15	\$581.99	25%	75%	\$0.00	0.00	0.00	7th Power Plan
Multifamily	Heating	Central Heat Pump - Controls and Commissioning	household	New	0.00	15	\$581.99	25%	75%	\$0.00	0.00	0.00	7th Power Plan

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Multifamily	Cooling	Ceiling Fan - ENERGY STAR	ceiling fans	New	7.49	10	\$47.23	50%	75%	\$0.74	2.98	3.30	ENERGY STAR
Multifamily	Cooling	Whole-House Fan - Installation	household	New	9.26	20	\$714.44	2%	10%	\$6.10	0.67	0.77	California Public Utilities Commission
Multifamily	Cooling	Thermostat - WiFi/Interactive	household	New	9.59	10	\$256.67	5%	50%	\$0.58	4.66	5.30	7th Power Plan
Multifamily	Heating	Thermostat - WiFi/Interactive	household	New	45.06	10	\$256.67	5%	50%	\$0.58	21.78	21.96	7th Power Plan
Multifamily	Water Heating	Water Heater - Drainwater Heat Recovery	household	New	142.20	40	\$837.67	0%	0%	\$0.42	0.00	0.00	7th Power Plan
Multifamily	Water Heating	Water Heater - Faucet Aerators	aerators	New	42.11	15	\$5.13	9%	50%	\$0.01	16.13	18.92	7th Power Plan
Multifamily	Water Heating	Water Heater - Low-Flow Showerheads	showerheads	New	133.11	10	\$26.56	14%	75%	\$0.02	24.93	31.37	7th Power Plan
Multifamily	Water Heating	Water Heater - Pipe Insulation	feet pipe	New	15.90	15	\$3.26	12%	75%	\$0.02	14.97	18.45	Mid-Atlantic TRM
Multifamily	Water Heating	Water Heater - Desuperheater	household	New	816.17	20	\$1,136.89	0%	0%	\$0.11	0.00	0.00	RTF Workbook
Multifamily	Water Heating	Water Heater - Temperature Setback	household	New	48.49	2	\$5.00	51%	75%	\$0.04	0.33	0.43	Illinois TRM
Multifamily	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	showerheads	New	22.68	10	\$19.30	16%	45%	\$0.10	2.05	2.56	RTF Workbook
Multifamily	Water Heating	Water Heater - Solar System	household	New	650.88	20	\$8,847.45	1%	10%	\$1.11	18.23	20.71	7th Power Plan
Multifamily	Interior Lighting	Interior Lighting - Occupancy Sensors	occ sens	New	66.12	8	\$99.16	2%	10%	\$0.17	2.71	5.24	Pacific Gas and Electric Research
Multifamily	Exterior Lighting	Exterior Lighting - Photosensor Control	ext fixt	New	20.73	15	\$10.19	0%	50%	\$0.04	9.97	18.18	Michigan Energy Measures Database
Multifamily	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	ext fixt pv	New	11.40	3	\$28.00	1%	30%	\$0.57	0.27	0.86	AEG Research
Multifamily	Exterior Lighting	Exterior Lighting - Timeclock Installation	ext fixt	New	14.93	10	\$19.15	0%	50%	\$0.12	5.59	11.39	Ontario Power TRM
Multifamily	Appliances	Refrigerator - Decommissioning and Recycling	household	New	280.09	6	\$143.58	0%	75%	\$0.09	22.13	23.78	PacificCorp '13-'14 Evaluation
Multifamily	Appliances	Freezer - Decommissioning and Recycling	household	New	273.13	5	\$143.58	0%	50%	\$0.11	1.29	1.39	PacificCorp '13-'14 Evaluation

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Multifamily	Electronics	Advanced Power Strips - Tier 1	smart strip	New	27.03	5	\$15.83	8%	25%	\$0.12	7.09	6.48	7th Power Plan
Multifamily	Electronics	Advanced Power Strips - Tier 2	smart strip	New	168.66	5	\$50.49	8%	25%	\$0.06	44.24	40.49	7th Power Plan
Multifamily	Miscellaneous	Pool Pump - Timer	household	New	0.00	10	\$85.22	1%	75%	\$0.00	0.00	0.00	Ontario Power TRM
Multifamily	Miscellaneous	Pool Heater - Solar Water Heating System	household	New	0.00	20	\$3,767.92	0%	30%	\$0.00	0.00	0.00	AEG Research
Multifamily	Cooling	ENERGY STAR Home Design	household	New	19.03	20	\$4,253.40	15%	75%	\$0.66	20.58	21.81	RTF Workbook
Multifamily	Heating	ENERGY STAR Home Design	household	New	75.26	20	\$4,253.40	15%	75%	\$0.66	76.44	76.20	RTF Workbook
Multifamily	Water Heating	ENERGY STAR Home Design	household	New	278.36	20	\$4,253.40	15%	75%	\$0.66	83.38	93.61	RTF Workbook
Multifamily	Interior Lighting	ENERGY STAR Home Design	household	New	122.60	20	\$4,253.40	15%	75%	\$0.66	98.70	119.31	RTF Workbook
Multifamily	Cooling	Behavioral Programs	household	New	0.42	1	\$5.00	14%	35%	\$0.53	0.05	0.05	AEG Research
Multifamily	Heating	Behavioral Programs	household	New	1.74	1	\$5.00	14%	35%	\$0.53	0.19	0.23	AEG Research
Multifamily	Water Heating	Behavioral Programs	household	New	0.78	1	\$5.00	14%	35%	\$0.53	0.07	0.11	AEG Research
Multifamily	Interior Lighting	Behavioral Programs	household	New	0.49	1	\$5.00	14%	35%	\$0.53	0.04	0.11	AEG Research
Multifamily	Exterior Lighting	Behavioral Programs	household	New	0.15	1	\$5.00	14%	35%	\$0.53	0.01	0.03	AEG Research
Multifamily	Appliances	Behavioral Programs	household	New	2.68	1	\$5.00	14%	35%	\$0.53	0.29	0.33	AEG Research
Multifamily	Electronics	Behavioral Programs	household	New	1.32	1	\$5.00	14%	35%	\$0.53	0.16	0.15	AEG Research
Multifamily	Miscellaneous	Behavioral Programs	household	New	0.22	1	\$5.00	14%	35%	\$0.53	0.03	0.03	AEG Research
Multifamily	Interior Lighting	Interior Lighting - General Service CFLs	GSL lamp	New	6.01	9	-\$0.13	0%	44%	\$0.00	11.52	35.30	RTF Workbook
Multifamily	Interior Lighting	Interior Lighting - Exempted CFLs	Exempt lamp	New	15.37	5	-\$2.74	0%	44%	-\$0.02	3.10	4.20	RTF Workbook
Mobile Home	Cooling	Insulation - Ceiling Installation	sqft roof	Existing	0.15	25	\$2.16	10%	38%	\$0.40	84.77	109.03	7th Power Plan
Mobile Home	Heating	Insulation - Ceiling Installation	sqft roof	Existing	0.25	25	\$2.16	10%	38%	\$0.40	121.83	142.89	7th Power Plan
Mobile Home	Cooling	Insulation - Ceiling Upgrade	sqft roof	Existing	0.02	25	\$2.16	10%	38%	\$1.39	11.88	16.20	7th Power Plan
Mobile Home	Heating	Insulation - Ceiling Upgrade	sqft roof	Existing	0.09	25	\$2.16	10%	38%	\$1.39	43.65	53.13	7th Power Plan
Mobile Home	Cooling	Insulation - Radiant Barrier	sqft roof	Existing	0.13	15	\$0.67	4%	19%	\$0.04	39.16	47.58	AEG Research
Mobile Home	Heating	Insulation - Radiant Barrier	sqft roof	Existing	1.77	15	\$0.67	4%	19%	\$0.04	502.06	515.50	AEG Research

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Mobile Home	Cooling	Insulation - Wall Cavity Installation	sqft wall	Existing	0.02	25	\$1.42	40%	40%	\$0.11	0.00	0.00	7th Power Plan
Mobile Home	Heating	Insulation - Wall Cavity Installation	sqft wall	Existing	1.12	25	\$1.42	40%	40%	\$0.11	0.00	0.00	7th Power Plan
Mobile Home	Cooling	Insulation - Wall Sheathing	sqft wall	Existing	0.01	20	\$0.93	15%	15%	\$0.17	0.00	0.00	AEG-BEST
Mobile Home	Heating	Insulation - Wall Sheathing	sqft wall	Existing	0.43	20	\$0.93	15%	15%	\$0.17	0.00	0.00	AEG-BEST
Mobile Home	Cooling	Insulation - Floor Installation	sqft floor cs	Existing	-0.02	25	\$3.39	7%	30%	\$0.84	-5.23	-7.13	7th Power Plan
Mobile Home	Heating	Insulation - Floor Installation	sqft floor cs	Existing	0.33	25	\$3.39	7%	30%	\$0.84	66.56	80.83	7th Power Plan
Mobile Home	Cooling	Insulation - Floor Upgrade	sqft floor cs	Existing	0.00	25	\$3.39	7%	30%	\$1.80	0.00	0.00	7th Power Plan
Mobile Home	Heating	Insulation - Floor Upgrade	sqft floor cs	Existing	0.14	25	\$3.39	7%	30%	\$1.80	28.44	34.60	7th Power Plan
Mobile Home	Cooling	Insulation - Foundation	household	Existing	-20.03	70	\$1,241.19	0%	0%	\$0.12	0.00	0.00	RTF Workbook
Mobile Home	Heating	Insulation - Foundation	household	Existing	786.39	70	\$1,241.19	0%	0%	\$0.12	0.00	0.00	RTF Workbook
Mobile Home	Cooling	Insulation - Ducting	household	Existing	44.85	18	\$528.00	48%	60%	\$0.11	3.96	5.19	AEG-BEST
Mobile Home	Heating	Insulation - Ducting	household	Existing	371.33	18	\$528.00	48%	60%	\$0.11	62.13	70.07	AEG-BEST
Mobile Home	Cooling	Ducting - Repair and Sealing	household	Existing	59.95	20	\$769.57	30%	75%	\$0.05	20.36	26.14	7th Power Plan
Mobile Home	Heating	Ducting - Repair and Sealing	household	Existing	1,442.93	20	\$769.57	30%	75%	\$0.05	977.88	980.90	7th Power Plan
Mobile Home	Cooling	Building Shell - Infiltration Control	sqft home	Existing	0.00	25	\$3.18	66%	75%	\$1.41	1.02	1.40	7th Power Plan
Mobile Home	Heating	Building Shell - Infiltration Control	sqft home	Existing	0.16	25	\$3.18	66%	75%	\$1.41	49.77	60.65	7th Power Plan
Mobile Home	Cooling	Windows - High Efficiency/ENERGY STAR	sqft window	Existing	0.44	25	\$21.16	9%	75%	\$0.37	97.44	122.35	7th Power Plan
Mobile Home	Heating	Windows - High Efficiency/ENERGY STAR	sqft window	Existing	4.08	25	\$21.16	9%	75%	\$0.37	809.63	932.18	7th Power Plan
Mobile Home	Cooling	Windows - Install Reflective Film	sqft window	Existing	0.03	25	\$1.40	16%	75%	\$0.08	6.26	7.67	7th Power Plan
Mobile Home	Heating	Windows - Install Reflective Film	sqft window	Existing	1.56	25	\$1.40	16%	75%	\$0.08	291.65	302.24	7th Power Plan
Mobile Home	Cooling	Doors - Storm and Thermal	household	Existing	7.50	20	\$682.67	60%	80%	\$0.31	4.10	5.40	AEG-BEST
Mobile Home	Heating	Doors - Storm and Thermal	household	Existing	163.66	20	\$682.67	60%	80%	\$0.31	80.81	95.05	AEG-BEST

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Mobile Home	Cooling	Ductless Mini Split Heat Pump (Zonal)	household	Existing	87.11	15	\$3,448.86	0%	75%	\$0.25	86.19	108.42	7th Power Plan
Mobile Home	Heating	Ductless Mini Split Heat Pump (Zonal)	household	Existing	1,160.65	15	\$3,448.86	0%	75%	\$0.25	988.72	1,116.32	7th Power Plan
Mobile Home	Cooling	Ductless Mini Split Heat Pump (Ducted Forced Air)	household	Existing	87.29	15	\$3,517.21	0%	45%	\$0.07	26.56	33.17	7th Power Plan
Mobile Home	Heating	Ductless Mini Split Heat Pump (Ducted Forced Air)	household	Existing	5,400.08	15	\$3,517.21	0%	45%	\$0.07	3,303.42	3,390.53	7th Power Plan
Mobile Home	Cooling	Space Heating - Heat Recovery Ventilator	household	Existing	6.13	20	\$1,303.92	0%	0%	\$0.23	0.00	0.00	7th Power Plan
Mobile Home	Heating	Space Heating - Heat Recovery Ventilator	household	Existing	456.81	20	\$1,303.92	0%	0%	\$0.23	0.00	0.00	7th Power Plan
Mobile Home	Cooling	Furnace - Conversion to Air-Source Heat Pump	household	Existing	0.00	15	\$2,955.28	0%	0%	\$0.15	0.00	0.00	7th Power Plan
Mobile Home	Heating	Furnace - Conversion to Air-Source Heat Pump	household	Existing	1,896.09	15	\$2,955.28	0%	0%	\$0.15	0.00	0.00	7th Power Plan
Mobile Home	Cooling	Room AC - Removal of Second Unit	household	Existing	680.15	3	\$18.00	0%	50%	\$0.01	504.87	536.20	CA DEER
Mobile Home	Cooling	Central AC - Maintenance and Tune-Up	household	Existing	51.70	6	\$275.74	7%	75%	\$0.76	22.71	28.40	Illinois TRM
Mobile Home	Cooling	Central Heat Pump - Controls and Commissioning	household	Existing	-6.12	15	\$581.99	65%	75%	\$0.08	-0.05	-0.06	7th Power Plan
Mobile Home	Heating	Central Heat Pump - Controls and Commissioning	household	Existing	719.40	15	\$581.99	65%	75%	\$0.08	6.51	7.24	7th Power Plan
Mobile Home	Cooling	Ceiling Fan - ENERGY STAR	ceiling fans	Existing	8.37	10	\$47.23	40%	75%	\$0.57	15.55	18.73	ENERGY STAR
Mobile Home	Cooling	Whole-House Fan - Installation	household	Existing	34.63	20	\$714.44	15%	40%	\$1.44	6.14	8.86	California Public Utilities Commission
Mobile Home	Cooling	Thermostat - WiFi/Interactive	household	Existing	23.69	10	\$256.67	5%	75%	\$0.09	47.35	56.61	7th Power Plan
Mobile Home	Heating	Thermostat - WiFi/Interactive	household	Existing	301.02	10	\$256.67	5%	75%	\$0.09	534.21	590.81	7th Power Plan
Mobile Home	Water Heating	Water Heater - Drainwater Heat Recovery	household	Existing	224.72	40	\$837.67	0%	0%	\$0.26	0.00	0.00	7th Power Plan
Mobile Home	Water Heating	Water Heater - Faucet Aerators	aerators	Existing	93.62	15	\$5.13	28%	50%	\$0.01	106.10	130.28	7th Power Plan

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Mobile Home	Water Heating	Water Heater - Low-Flow Showerheads	showerheads	Existing	203.32	10	\$26.56	42%	75%	\$0.02	229.19	304.30	7th Power Plan
Mobile Home	Water Heating	Water Heater - Pipe Insulation	feet pipe	Existing	25.45	15	\$3.26	12%	75%	\$0.01	210.96	276.23	Mid-Atlantic TRM
Mobile Home	Water Heating	Water Heater - Desuperheater	household	Existing	1,377.41	20	\$1,136.89	0%	0%	\$0.07	0.00	0.00	RTF Workbook
Mobile Home	Water Heating	Water Heater - Temperature Setback	household	Existing	76.56	2	\$5.00	41%	75%	\$0.03	68.17	92.09	Illinois TRM
Mobile Home	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	showerheads	Existing	26.41	10	\$19.30	16%	45%	\$0.09	26.23	35.38	RTF Workbook
Mobile Home	Water Heating	Water Heater - Solar System	household	Existing	1,021.61	20	\$8,847.45	0%	20%	\$0.71	325.23	407.76	7th Power Plan
Mobile Home	Interior Lighting	Interior Lighting - Occupancy Sensors	occ sens	Existing	90.77	8	\$99.16	0%	10%	\$0.13	37.18	65.03	Pacific Gas and Electric Research
Mobile Home	Exterior Lighting	Exterior Lighting - Photosensor Control	ext fixt	Existing	16.59	15	\$10.19	7%	50%	\$0.05	28.70	66.25	Michigan Energy Measures Database
Mobile Home	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	ext fixt pv	Existing	20.15	3	\$28.00	1%	30%	\$0.33	10.90	28.16	AEG Research
Mobile Home	Exterior Lighting	Exterior Lighting - Timeclock Installation	ext fixt	Existing	10.71	10	\$19.15	0%	50%	\$0.18	20.53	50.46	Ontario Power TRM
Mobile Home	Appliances	Refrigerator - Decommissioning and Recycling	household	Existing	298.68	6	\$143.58	0%	75%	\$0.09	257.35	286.02	PacifiCorp '13-'14 Evaluation
Mobile Home	Appliances	Freezer - Decommissioning and Recycling	household	Existing	288.71	5	\$143.58	0%	50%	\$0.10	463.08	522.91	PacifiCorp '13-'14 Evaluation
Mobile Home	Electronics	Advanced Power Strips - Tier 1	smart strip	Existing	28.20	5	\$15.83	8%	25%	\$0.12	55.82	55.17	7th Power Plan
Mobile Home	Electronics	Advanced Power Strips - Tier 2	smart strip	Existing	179.58	5	\$50.49	8%	25%	\$0.06	365.46	350.87	7th Power Plan
Mobile Home	Miscellaneous	Pool Pump - Timer	household	Existing	450.24	10	\$85.22	1%	75%	\$0.03	28.87	29.70	Ontario Power TRM
Mobile Home	Miscellaneous	Pool Heater - Solar Water Heating System	household	Existing	0.00	20	\$3,767.92	0%	30%	\$0.00	0.00	0.00	AEG Research
Mobile Home	Cooling	ENERGY STAR Home Design	household	Existing	41.94	20	\$4,253.40	0%	0%	\$0.29	0.00	0.00	RTF Workbook
Mobile Home	Heating	ENERGY STAR Home Design	household	Existing	463.52	20	\$4,253.40	0%	0%	\$0.29	0.00	0.00	RTF Workbook
Mobile Home	Water Heating	ENERGY STAR Home Design	household	Existing	430.14	20	\$4,253.40	0%	0%	\$0.29	0.00	0.00	RTF Workbook

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Mobile Home	Interior Lighting	ENERGY STAR Home Design	household	Existing	167.06	20	\$4,253.40	0%	0%	\$0.29	0.00	0.00	RTF Workbook
Mobile Home	Cooling	Behavioral Programs	household	Existing	0.27	1	\$5.00	14%	35%	\$0.53	0.27	0.44	AEG Research
Mobile Home	Heating	Behavioral Programs	household	Existing	3.00	1	\$5.00	14%	35%	\$0.53	3.11	4.51	AEG Research
Mobile Home	Water Heating	Behavioral Programs	household	Existing	1.13	1	\$5.00	14%	35%	\$0.53	1.04	1.67	AEG Research
Mobile Home	Interior Lighting	Behavioral Programs	household	Existing	0.35	1	\$5.00	14%	35%	\$0.53	0.31	0.68	AEG Research
Mobile Home	Exterior Lighting	Behavioral Programs	household	Existing	0.05	1	\$5.00	14%	35%	\$0.53	0.03	0.12	AEG Research
Mobile Home	Appliances	Behavioral Programs	household	Existing	1.47	1	\$5.00	14%	35%	\$0.53	1.60	1.99	AEG Research
Mobile Home	Electronics	Behavioral Programs	household	Existing	0.70	1	\$5.00	14%	35%	\$0.53	0.85	0.90	AEG Research
Mobile Home	Miscellaneous	Behavioral Programs	household	Existing	0.45	1	\$5.00	14%	35%	\$0.53	0.57	0.53	AEG Research
Mobile Home	Interior Lighting	Interior Lighting - General Service CFLs	GSL lamp	Existing	8.38	9	-\$0.13	0%	35%	\$0.00	38.78	112.89	RTF Workbook
Mobile Home	Interior Lighting	Interior Lighting - Exempted CFLs	Exempt lamp	Existing	24.56	5	-\$2.74	0%	35%	-\$0.02	53.86	68.69	RTF Workbook
Mobile Home	Cooling	Insulation - Ceiling Installation	sqft roof	New	0.16	25	\$2.16	29%	38%	\$0.51	4.12	4.32	7th Power Plan
Mobile Home	Heating	Insulation - Ceiling Installation	sqft roof	New	0.19	25	\$2.16	29%	38%	\$0.51	4.66	4.74	7th Power Plan
Mobile Home	Cooling	Insulation - Ceiling Upgrade	sqft roof	New	0.02	25	\$2.16	29%	38%	\$1.85	0.61	0.65	7th Power Plan
Mobile Home	Heating	Insulation - Ceiling Upgrade	sqft roof	New	0.07	25	\$2.16	29%	38%	\$1.85	1.71	1.76	7th Power Plan
Mobile Home	Cooling	Insulation - Radiant Barrier	sqft roof	New	0.13	15	\$0.67	1%	5%	\$0.05	1.32	1.38	AEG Research
Mobile Home	Heating	Insulation - Radiant Barrier	sqft roof	New	1.28	15	\$0.67	1%	5%	\$0.05	12.58	12.67	AEG Research
Mobile Home	Cooling	Insulation - Wall Cavity Installation	sqft wall	New	0.02	25	\$1.42	68%	80%	\$0.15	1.37	1.44	7th Power Plan
Mobile Home	Heating	Insulation - Wall Cavity Installation	sqft wall	New	0.82	25	\$1.42	68%	80%	\$0.15	53.58	53.92	7th Power Plan
Mobile Home	Cooling	Insulation - Wall Sheathing	sqft wall	New	0.01	20	\$0.93	15%	20%	\$0.24	0.37	0.39	AEG-BEST
Mobile Home	Heating	Insulation - Wall Sheathing	sqft wall	New	0.32	20	\$0.93	15%	20%	\$0.24	8.67	8.81	AEG-BEST
Mobile Home	Cooling	Insulation - Floor Installation	sqft floor cs	New	-0.02	25	\$3.39	33%	38%	\$1.19	-0.15	-0.16	7th Power Plan
Mobile Home	Heating	Insulation - Floor Installation	sqft floor cs	New	0.25	25	\$3.39	33%	38%	\$1.19	1.45	1.49	7th Power Plan
Mobile Home	Cooling	Insulation - Floor Upgrade	sqft floor cs	New	0.00	25	\$3.39	33%	38%	\$2.51	0.00	0.00	7th Power Plan

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Mobile Home	Heating	Insulation - Floor Upgrade	sqft floors	New	0.11	25	\$3.39	33%	38%	\$2.51	0.62	0.64	7th Power Plan
Mobile Home	Cooling	Insulation - Foundation	household	New	-17.51	70	\$1,241.19	0%	0%	\$0.17	0.00	0.00	RTF Workbook
Mobile Home	Heating	Insulation - Foundation	household	New	563.59	70	\$1,241.19	0%	0%	\$0.17	0.00	0.00	RTF Workbook
Mobile Home	Cooling	Insulation - Ducting	household	New	36.09	18	\$528.00	49%	80%	\$0.15	1.49	1.57	AEG-BEST
Mobile Home	Heating	Insulation - Ducting	household	New	293.56	18	\$528.00	49%	80%	\$0.15	20.91	21.18	AEG-BEST
Mobile Home	Cooling	Ducting - Repair and Sealing	household	New	44.88	20	\$769.57	29%	75%	\$0.07	2.71	2.84	7th Power Plan
Mobile Home	Heating	Ducting - Repair and Sealing	household	New	1,022.29	20	\$769.57	29%	75%	\$0.07	106.60	107.02	7th Power Plan
Mobile Home	Cooling	Building Shell - Infiltration Control	sqft home	New	0.00	25	\$3.18	75%	75%	\$1.96	0.00	0.00	7th Power Plan
Mobile Home	Heating	Building Shell - Infiltration Control	sqft home	New	0.13	25	\$3.18	75%	75%	\$1.96	0.00	0.00	7th Power Plan
Mobile Home	Cooling	Windows - High Efficiency/ENERGY STAR	sqft window	New	0.44	25	\$21.16	56%	75%	\$0.50	4.07	4.27	7th Power Plan
Mobile Home	Heating	Windows - High Efficiency/ENERGY STAR	sqft window	New	3.09	25	\$21.16	56%	75%	\$0.50	26.94	27.39	7th Power Plan
Mobile Home	Cooling	Windows - Install Reflective Film	sqft window	New	0.03	25	\$1.40	16%	75%	\$0.11	0.88	0.92	7th Power Plan
Mobile Home	Heating	Windows - Install Reflective Film	sqft window	New	1.15	25	\$1.40	16%	75%	\$0.11	30.47	30.67	7th Power Plan
Mobile Home	Cooling	Doors - Storm and Thermal	household	New	2.75	20	\$682.67	70%	80%	\$0.88	0.11	0.11	AEG-BEST
Mobile Home	Heating	Doors - Storm and Thermal	household	New	62.10	20	\$682.67	70%	80%	\$0.88	2.31	2.38	AEG-BEST
Mobile Home	Cooling	Ductless Mini Split Heat Pump (Zonal)	household	New	114.25	15	\$3,448.86	0%	75%	\$0.33	16.94	17.66	7th Power Plan
Mobile Home	Heating	Ductless Mini Split Heat Pump (Zonal)	household	New	908.34	15	\$3,448.86	0%	75%	\$0.33	130.72	130.18	7th Power Plan
Mobile Home	Cooling	Ductless Mini Split Heat Pump (Ducted Forced Air)	household	New	81.30	15	\$3,517.21	0%	45%	\$0.09	5.29	5.52	7th Power Plan
Mobile Home	Heating	Ductless Mini Split Heat Pump (Ducted Forced Air)	household	New	3,964.45	15	\$3,517.21	0%	45%	\$0.09	458.15	456.70	7th Power Plan
Mobile Home	Cooling	Space Heating - Heat Recovery Ventilator	household	New	4.69	20	\$1,303.92	0%	0%	\$0.32	0.00	0.00	7th Power Plan
Mobile Home	Heating	Space Heating - Heat Recovery Ventilator	household	New	342.95	20	\$1,303.92	0%	0%	\$0.32	0.00	0.00	7th Power Plan
Mobile Home	Cooling	Furnace - Conversion to Air-Source Heat Pump	household	New	0.00	15	\$2,955.28	0%	0%	\$0.25	0.00	0.00	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Mobile Home	Heating	Furnace - Conversion to Air-Source Heat Pump	household	New	1,161.02	15	\$2,955.28	0%	0%	\$0.25	0.00	0.00	7th Power Plan
Mobile Home	Cooling	Room AC - Removal of Second Unit	household	New	734.56	3	\$18.00	25%	50%	\$0.01	6.17	6.55	CA DEER
Mobile Home	Cooling	Central AC - Maintenance and Tune-Up	household	New	51.52	6	\$275.74	45%	75%	\$0.93	0.53	0.57	Illinois TRM
Mobile Home	Cooling	Central Heat Pump - Controls and Commissioning	household	New	-5.44	15	\$581.99	25%	75%	\$0.14	-0.05	-0.05	7th Power Plan
Mobile Home	Heating	Central Heat Pump - Controls and Commissioning	household	New	417.45	15	\$581.99	25%	75%	\$0.14	3.68	3.67	7th Power Plan
Mobile Home	Cooling	Ceiling Fan - ENERGY STAR	ceiling fans	New	6.07	10	\$47.23	50%	75%	\$0.95	0.86	0.91	ENERGY STAR
Mobile Home	Cooling	Whole-House Fan - Installation	household	New	27.97	20	\$714.44	15%	40%	\$2.17	0.91	0.97	California Public Utilities Commission
Mobile Home	Cooling	Thermostat - WiFi/Interactive	household	New	23.90	10	\$256.67	5%	75%	\$0.13	6.97	7.31	7th Power Plan
Mobile Home	Heating	Thermostat - WiFi/Interactive	household	New	227.04	10	\$256.67	5%	75%	\$0.13	62.53	63.05	7th Power Plan
Mobile Home	Water Heating	Water Heater - Drainwater Heat Recovery	household	New	219.04	40	\$837.67	1%	10%	\$0.27	15.04	17.04	7th Power Plan
Mobile Home	Water Heating	Water Heater - Faucet Aerators	aerators	New	122.30	15	\$5.13	29%	50%	\$0.00	33.63	39.79	7th Power Plan
Mobile Home	Water Heating	Water Heater - Low-Flow Showerheads	showerheads	New	268.41	10	\$26.56	43%	75%	\$0.01	36.09	45.88	7th Power Plan
Mobile Home	Water Heating	Water Heater - Pipe Insulation	feet pipe	New	24.36	15	\$3.26	12%	75%	\$0.01	31.47	39.17	Mid-Atlantic TRM
Mobile Home	Water Heating	Water Heater - Desuperheater	household	New	1,257.21	20	\$1,136.89	0%	0%	\$0.07	0.00	0.00	RTF Workbook
Mobile Home	Water Heating	Water Heater - Temperature Setback	household	New	74.56	2	\$5.00	51%	75%	\$0.03	0.69	0.92	Illinois TRM
Mobile Home	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	showerheads	New	35.10	10	\$19.30	16%	45%	\$0.06	4.33	5.51	RTF Workbook
Mobile Home	Water Heating	Water Heater - Solar System	household	New	1,000.69	20	\$8,847.45	0%	20%	\$0.72	85.17	97.78	7th Power Plan
Mobile Home	Interior Lighting	Interior Lighting - Occupancy Sensors	occ sens	New	93.80	8	\$99.16	0%	10%	\$0.12	3.57	6.19	Pacific Gas and Electric Research

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Mobile Home	Exterior Lighting	Exterior Lighting - Photosensor Control	ext fixt	New	15.66	15	\$10.19	11%	50%	\$0.05	4.11	7.50	Michigan Energy Measures Database
Mobile Home	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	ext fixt pv	New	11.51	3	\$28.00	1%	30%	\$0.57	0.19	0.61	AEG Research
Mobile Home	Exterior Lighting	Exterior Lighting - Timeclock Installation	ext fixt	New	11.50	10	\$19.15	3%	50%	\$0.16	2.86	5.82	Ontario Power TRM
Mobile Home	Appliances	Refrigerator - Decommissioning and Recycling	household	New	281.59	6	\$143.58	0%	75%	\$0.09	35.52	38.21	PacifiCorp '13-'14 Evaluation
Mobile Home	Appliances	Freezer - Decommissioning and Recycling	household	New	273.69	5	\$143.58	0%	50%	\$0.11	50.35	54.23	PacifiCorp '13-'14 Evaluation
Mobile Home	Electronics	Advanced Power Strips - Tier 1	smart strip	New	29.31	5	\$15.83	8%	25%	\$0.12	5.41	4.97	7th Power Plan
Mobile Home	Electronics	Advanced Power Strips - Tier 2	smart strip	New	182.54	5	\$50.49	8%	25%	\$0.06	33.68	31.03	7th Power Plan
Mobile Home	Miscellaneous	Pool Pump - Timer	household	New	482.75	10	\$85.22	1%	75%	\$0.02	4.75	4.81	Ontario Power TRM
Mobile Home	Miscellaneous	Pool Heater - Solar Water Heating System	household	New	0.00	20	\$3,767.92	0%	30%	\$0.00	0.00	0.00	AEG Research
Mobile Home	Cooling	ENERGY STAR Home Design	household	New	45.43	20	\$4,253.40	15%	75%	\$0.33	18.21	18.63	RTF Workbook
Mobile Home	Heating	ENERGY STAR Home Design	household	New	366.29	20	\$4,253.40	15%	75%	\$0.33	135.17	134.64	RTF Workbook
Mobile Home	Water Heating	ENERGY STAR Home Design	household	New	424.84	20	\$4,253.40	15%	75%	\$0.33	173.08	196.81	RTF Workbook
Mobile Home	Interior Lighting	ENERGY STAR Home Design	household	New	173.78	20	\$4,253.40	15%	75%	\$0.33	106.17	123.44	RTF Workbook
Mobile Home	Cooling	Behavioral Programs	household	New	0.29	1	\$5.00	14%	35%	\$0.52	0.02	0.03	AEG Research
Mobile Home	Heating	Behavioral Programs	household	New	2.51	1	\$5.00	14%	35%	\$0.52	0.19	0.23	AEG Research
Mobile Home	Water Heating	Behavioral Programs	household	New	1.29	1	\$5.00	14%	35%	\$0.52	0.08	0.13	AEG Research
Mobile Home	Interior Lighting	Behavioral Programs	household	New	0.38	1	\$5.00	14%	35%	\$0.52	0.02	0.06	AEG Research
Mobile Home	Exterior Lighting	Behavioral Programs	household	New	0.06	1	\$5.00	14%	35%	\$0.52	0.00	0.01	AEG Research
Mobile Home	Appliances	Behavioral Programs	household	New	1.83	1	\$5.00	14%	35%	\$0.52	0.14	0.16	AEG Research
Mobile Home	Electronics	Behavioral Programs	household	New	0.93	1	\$5.00	14%	35%	\$0.52	0.08	0.08	AEG Research
Mobile Home	Miscellaneous	Behavioral Programs	household	New	0.57	1	\$5.00	14%	35%	\$0.52	0.05	0.05	AEG Research
Mobile Home	Interior Lighting	Interior Lighting - General Service CFLs	GSL lamp	New	8.22	9	-\$0.13	0%	35%	\$0.00	7.15	21.89	RTF Workbook

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Mobile Home	Interior Lighting	Interior Lighting - Exempted CFLs	Exempt lamp	New	23.56	5	-\$2.74	0%	35%	-\$0.02	6.98	9.45	RTF Workbook

Utah Residential Measures Assumptions

Table H-3 Comparison of 7th Plan and RTF Residential Measures in Utah

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Single Family	Cooling	Central AC	12 kBtu/hr	Existing	112.85	15	\$647.54	74%	at stock turnover	\$0.48	84,709.89	84,709.89	AEG-BEST
Single Family	Cooling	Room AC	10.5 kBtu/hr	Existing	30.56	12	\$247.96	3%	at stock turnover	\$0.78	396.87	396.87	AEG-BEST
Single Family	Cooling	Evaporative AC	1 sqft	Existing	0.10	15	\$0.11	14%	at stock turnover	\$0.09	7,078.04	7,078.04	New Buildings Institute Study, 2006
Single Family	Cooling	Air-Source Heat Pump	36 kBtu/hr	Existing	164.63	15	\$218.37	2%	at stock turnover	\$0.04	1,778.71	1,778.71	AEG-BEST
Single Family	Heating	Air-Source Heat Pump	36 kBtu/hr	Existing	347.12	15	\$218.37	2%	at stock turnover	\$0.04	3,750.57	3,750.57	AEG-BEST
Single Family	Cooling	Geothermal Heat Pump	36 kBtu/hr	Existing	1,078.12	20	\$2,531.24	0%	at stock turnover	\$0.08	1.92	1.92	AEG-BEST
Single Family	Heating	Geothermal Heat Pump	36 kBtu/hr	Existing	1,163.58	20	\$2,531.24	0%	at stock turnover	\$0.08	2.08	2.08	AEG-BEST
Single Family	Heating	Electric Furnace	36 kBtu/hr	Existing	0.00	18	\$0.00	4%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Single Family	Heating	Electric Room Heat	3.5 kBtu/hr	Existing	0.00	18	\$0.00	5%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Single Family	Water Heating	Water Heater (<= 55 Gal)	50 gallons	Existing	1,170.88	13	\$743.91	4%	50%	\$0.06	13,454.23	13,454.23	7th Power Plan
Single Family	Water Heating	Water Heater (<= 55 Gal)	50 gallons	Existing	1,284.22	13	\$1,215.07	3%	30%	\$0.09	9,675.50	9,675.50	7th Power Plan
Single Family	Water Heating	Water Heater (<= 55 Gal)	50 gallons	Existing	1,858.17	13	\$1,573.80	2%	20%	\$0.08	9,342.52	9,342.52	Annual Energy Outlook, 2015
Single Family	Water Heating	Water Heater (> 55 Gal)	50 gallons	Existing	1,024.56	13	\$0.00	1%	50%	\$0.00	0.00	0.00	7th Power Plan
Single Family	Water Heating	Water Heater (> 55 Gal)	50 gallons	Existing	209.95	13	\$471.15	0%	30%	\$0.26	223.43	223.43	7th Power Plan
Single Family	Water Heating	Water Heater (> 55 Gal)	50 gallons	Existing	662.78	13	\$829.89	0%	20%	\$0.12	552.08	552.08	Annual Energy Outlook, 2015
Single Family	Interior Lighting	General Service Screw-In	1 lamps	Existing	10.36	12	\$6.13	100%	at stock turnover	\$0.06	89,968.83	134,292.22	EIA 2011-2012 Ref. Case
Single Family	Interior Lighting	Linear Lighting	1 lamps	Existing	3.44	17	\$24.51	100%	at stock turnover	\$0.56	4,670.36	4,670.36	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Single Family	Interior Lighting	Exempted Screw-In	1 lamps	Existing	31.87	10	\$12.32	100%	at stock turnover	\$0.04	94,688.71	91,271.26	EIA 2011-2012 Ref. Case
Single Family	Exterior Lighting	Screw-in	1 lamps	Existing	23.33	10	\$6.13	100%	at stock turnover	\$0.03	41,307.51	60,979.79	EIA 2011-2012 Ref. Case
Single Family	Appliances	Refrigerator	1 units	Existing	107.76	15	\$240.28	100%	at stock turnover	\$0.19	25,635.06	25,635.06	7th Power Plan
Single Family	Appliances	Second Refrigerator	1 units	Existing	150.46	15	\$240.28	35%	at stock turnover	\$0.13	12,530.37	12,530.37	7th Power Plan
Single Family	Appliances	Freezer	1 units	Existing	122.95	22	\$83.03	53%	at stock turnover	\$0.05	10,230.10	10,230.10	RTF Workbook
Single Family	Appliances	Clothes Washer	1 units	Existing	9.20	14	\$194.20	98%	at stock turnover	\$1.84	3,407.80	3,407.80	7th Power Plan
Single Family	Appliances	Clothes Dryer	1 units	Existing	151.75	16	\$308.00	75%	at stock turnover	\$0.16	21,795.39	21,795.39	7th Power Plan
Single Family	Appliances	Dishwasher	1 units	Existing	2.15	15	\$6.36	92%	at stock turnover	\$0.25	533.50	533.50	7th Power Plan
Single Family	Appliances	Stove/Oven	1 units	Existing	166.70	20	\$307.09	62%	at stock turnover	\$0.13	27,847.95	27,847.95	7th Power Plan
Single Family	Appliances	Microwave	1 units	Existing	8.12	11	\$4.63	98%	at stock turnover	\$0.06	3,290.99	3,290.99	7th Power Plan
Single Family	Electronics	Personal Computers	1 units	Existing	57.37	5	\$14.17	97%	at stock turnover	\$0.05	6,598.04	6,598.04	7th Power Plan
Single Family	Electronics	Monitor	1 units	Existing	56.18	8	\$8.21	116%	at stock turnover	\$0.02	3,703.85	3,703.85	7th Power Plan
Single Family	Electronics	Laptops	1 units	Existing	13.88	4	\$57.18	141%	at stock turnover	\$0.94	2,467.21	2,467.21	7th Power Plan
Single Family	Electronics	Printer/Fax/Copier	1 units	Existing	19.33	5	\$0.01	130%	at stock turnover	\$0.00	542.90	542.90	ENERGY STAR
Single Family	Electronics	TVs	1 units	Existing	23.82	6	\$0.01	247%	at stock turnover	\$0.00	3,006.04	3,006.04	ENERGY STAR
Single Family	Electronics	Set-top Boxes/DVRs	1 units	Existing	64.81	5	\$0.00	71%	at stock turnover	\$0.00	0.00	0.00	Voluntary Agreement
Single Family	Electronics	Devices and Gadgets	1 units	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Single Family	Miscellaneous	Electric Vehicles	1 units	Existing	116.75	10	\$770.00	0%	at stock turnover	\$0.72	1,469.45	1,469.45	7th Power Plan
Single Family	Miscellaneous	Pool Heater	1 units	Existing	3,864.38	15	\$3,546.07	1%	at stock turnover	\$0.08	10,819.23	10,819.23	AEG Research

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Single Family	Miscellaneous	Pool Pump	1 units	Existing	702.98	15	\$872.94	2%	at stock turnover	\$0.10	4,985.01	4,985.01	Southern California Edison
Single Family	Miscellaneous	Hot Tub/Spa	1 units	Existing	169.51	15	\$350.00	6%	at stock turnover	\$0.17	3,308.22	3,308.22	AEG Research
Single Family	Miscellaneous	Furnace Fan	1 units	Existing	219.05	20	\$97.00	90%	at stock turnover	\$0.03	-2,844.15	1,976.44	DOE Rule: EERE-2010-BT-STD-0011
Single Family	Miscellaneous	Well Pump	1 units	Existing	0.00	5	\$0.00	5%	at stock turnover	\$0.00	0.00	0.00	N/A
Single Family	Miscellaneous	Miscellaneous	1 units	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Single Family	Cooling	Central AC	12 kBtu/hr	New	160.42	15	\$647.54	74%	at stock turnover	\$0.34	59,411.24	59,411.24	AEG-BEST
Single Family	Cooling	Room AC	10.5 kBtu/hr	New	15.60	12	\$247.96	3%	at stock turnover	\$1.53	160.09	160.09	AEG-BEST
Single Family	Cooling	Evaporative AC	1 sqft	New	0.00	15	\$0.11	0%	at stock turnover	\$0.00	0.00	0.00	New Buildings Institute Study, 2006
Single Family	Cooling	Air-Source Heat Pump	36 kBtu/hr	New	263.42	15	\$218.37	2%	at stock turnover	\$0.03	1,430.73	1,430.73	AEG-BEST
Single Family	Heating	Air-Source Heat Pump	36 kBtu/hr	New	432.41	15	\$218.37	2%	at stock turnover	\$0.03	2,348.60	2,348.60	AEG-BEST
Single Family	Cooling	Geothermal Heat Pump	36 kBtu/hr	New	1,078.12	20	\$2,531.24	0%	at stock turnover	\$0.08	1.02	1.02	AEG-BEST
Single Family	Heating	Geothermal Heat Pump	36 kBtu/hr	New	1,149.38	20	\$2,531.24	0%	at stock turnover	\$0.08	1.09	1.09	AEG-BEST
Single Family	Heating	Electric Furnace	36 kBtu/hr	New	0.00	18	\$0.00	4%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Single Family	Heating	Electric Room Heat	3.5 kBtu/hr	New	0.00	18	\$0.00	5%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Single Family	Water Heating	Water Heater (<= 55 Gal)	50 gallons	New	1,171.07	13	\$743.91	3%	50%	\$0.06	3,267.40	3,267.40	7th Power Plan
Single Family	Water Heating	Water Heater (<= 55 Gal)	50 gallons	New	1,279.21	13	\$1,215.07	2%	30%	\$0.09	2,351.63	2,351.63	7th Power Plan
Single Family	Water Heating	Water Heater (<= 55 Gal)	50 gallons	New	1,853.27	13	\$1,573.80	1%	20%	\$0.08	2,273.57	2,273.57	Annual Energy Outlook, 2015
Single Family	Water Heating	Water Heater (> 55 Gal)	50 gallons	New	1,024.56	13	\$0.00	0%	50%	\$0.00	0.00	0.00	7th Power Plan
Single Family	Water Heating	Water Heater (> 55 Gal)	50 gallons	New	209.75	13	\$471.15	0%	30%	\$0.26	78.87	78.87	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Single Family	Water Heating	Water Heater (> 55 Gal)	50 gallons	New	662.57	13	\$829.89	0%	20%	\$0.12	194.88	194.88	Annual Energy Outlook, 2015
Single Family	Interior Lighting	General Service Screw-In	1 lamps	New	10.63	12	\$6.13	100%	at stock turnover	\$0.06	39,944.00	45,563.74	EIA 2011-2012 Ref. Case
Single Family	Interior Lighting	Linear Lighting	1 lamps	New	3.81	17	\$25.80	100%	at stock turnover	\$0.53	2,509.54	2,509.54	7th Power Plan
Single Family	Interior Lighting	Exempted Screw-In	1 lamps	New	31.87	10	\$12.32	100%	at stock turnover	\$0.04	41,638.13	41,021.88	EIA 2011-2012 Ref. Case
Single Family	Exterior Lighting	Screw-in	1 lamps	New	23.89	10	\$6.13	100%	at stock turnover	\$0.03	18,334.54	20,908.02	EIA 2011-2012 Ref. Case
Single Family	Appliances	Refrigerator	1 units	New	107.76	15	\$240.28	100%	at stock turnover	\$0.19	12,909.01	12,909.01	7th Power Plan
Single Family	Appliances	Second Refrigerator	1 units	New	150.46	15	\$240.28	27%	at stock turnover	\$0.13	4,725.61	4,725.61	7th Power Plan
Single Family	Appliances	Freezer	1 units	New	122.95	22	\$83.03	41%	at stock turnover	\$0.05	3,829.72	3,829.72	RTF Workbook
Single Family	Appliances	Clothes Washer	1 units	New	9.20	14	\$194.20	99%	at stock turnover	\$1.84	1,459.42	1,459.42	7th Power Plan
Single Family	Appliances	Clothes Dryer	1 units	New	151.75	16	\$308.00	74%	at stock turnover	\$0.16	10,101.79	10,101.79	7th Power Plan
Single Family	Appliances	Dishwasher	1 units	New	2.15	15	\$6.36	110%	at stock turnover	\$0.25	215.67	215.67	7th Power Plan
Single Family	Appliances	Stove/Oven	1 units	New	166.70	20	\$307.09	51%	at stock turnover	\$0.13	11,612.70	11,612.70	7th Power Plan
Single Family	Appliances	Microwave	1 units	New	8.12	11	\$4.63	98%	at stock turnover	\$0.06	1,341.19	1,341.19	7th Power Plan
Single Family	Electronics	Personal Computers	1 units	New	57.37	5	\$14.17	79%	at stock turnover	\$0.05	1,704.73	1,704.73	7th Power Plan
Single Family	Electronics	Monitor	1 units	New	56.18	8	\$8.21	94%	at stock turnover	\$0.02	1,148.37	1,148.37	7th Power Plan
Single Family	Electronics	Laptops	1 units	New	13.88	4	\$57.18	234%	at stock turnover	\$0.94	1,019.74	1,019.74	7th Power Plan
Single Family	Electronics	Printer/Fax/Copier	1 units	New	19.33	5	\$0.01	191%	at stock turnover	\$0.00	286.67	286.67	ENERGY STAR
Single Family	Electronics	TVs	1 units	New	23.82	6	\$0.01	309%	at stock turnover	\$0.00	1,422.10	1,422.10	ENERGY STAR
Single Family	Electronics	Set-top Boxes/DVRs	1 units	New	64.81	5	\$0.00	88%	at stock turnover	\$0.00	0.00	0.00	Voluntary Agreement

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Single Family	Electronics	Devices and Gadgets	1 units	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Single Family	Miscellaneous	Electric Vehicles	1 units	New	116.75	10	\$770.00	0%	at stock turnover	\$0.72	627.67	627.67	7th Power Plan
Single Family	Miscellaneous	Pool Heater	1 units	New	3,864.38	15	\$3,546.07	1%	at stock turnover	\$0.08	5,102.23	5,102.23	AEG Research
Single Family	Miscellaneous	Pool Pump	1 units	New	702.98	15	\$872.94	2%	at stock turnover	\$0.10	2,350.88	2,350.88	Southern California Edison
Single Family	Miscellaneous	Hot Tub/Spa	1 units	New	169.51	15	\$350.00	6%	at stock turnover	\$0.17	1,585.82	1,585.82	AEG Research
Single Family	Miscellaneous	Furnace Fan	1 units	New	219.05	20	\$97.00	90%	at stock turnover	\$0.03	-1,242.84	863.67	DOE Rule: EERE-2010-BT-STD-0011
Single Family	Miscellaneous	Well Pump	1 units	New	0.00	5	\$0.00	8%	at stock turnover	\$0.00	0.00	0.00	N/A
Single Family	Miscellaneous	Miscellaneous	1 units	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Multifamily	Cooling	Central AC	12 kBtu/hr	Existing	132.94	15	\$647.54	74%	at stock turnover	\$0.41	14,571.77	14,571.77	AEG-BEST
Multifamily	Cooling	Room AC	10.5 kBtu/hr	Existing	81.68	12	\$247.96	3%	at stock turnover	\$0.29	1,017.50	1,017.50	AEG-BEST
Multifamily	Cooling	Evaporative AC	1 sqft	Existing	0.09	15	\$0.11	14%	at stock turnover	\$0.11	563.89	563.89	New Buildings Institute Study, 2006
Multifamily	Cooling	Air-Source Heat Pump	36 kBtu/hr	Existing	156.43	15	\$218.37	2%	at stock turnover	\$0.07	661.99	661.99	AEG-BEST
Multifamily	Heating	Air-Source Heat Pump	36 kBtu/hr	Existing	100.77	15	\$218.37	2%	at stock turnover	\$0.07	426.46	426.46	AEG-BEST
Multifamily	Cooling	Geothermal Heat Pump	36 kBtu/hr	Existing	533.37	20	\$2,531.24	0%	at stock turnover	\$0.21	0.16	0.16	AEG-BEST
Multifamily	Heating	Geothermal Heat Pump	36 kBtu/hr	Existing	341.29	20	\$2,531.24	0%	at stock turnover	\$0.21	0.10	0.10	AEG-BEST
Multifamily	Heating	Electric Furnace	36 kBtu/hr	Existing	0.00	18	\$0.00	4%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Multifamily	Heating	Electric Room Heat	3.5 kBtu/hr	Existing	0.00	18	\$0.00	5%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Multifamily	Water Heating	Water Heater (<= 55 Gal)	50 gallons	Existing	725.99	13	\$743.91	4%	50%	\$0.09	7,299.79	7,299.79	7th Power Plan
Multifamily	Water Heating	Water Heater (<= 55 Gal)	50 gallons	Existing	792.82	13	\$1,215.07	3%	30%	\$0.14	5,254.11	5,254.11	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Multifamily	Water Heating	Water Heater (<= 55 Gal)	50 gallons	Existing	1,148.68	13	\$1,573.80	2%	20%	\$0.13	5,080.10	5,080.10	Annual Energy Outlook, 2015
Multifamily	Water Heating	Water Heater (> 55 Gal)	50 gallons	Existing	635.12	13	\$0.00	1%	50%	\$0.00	0.00	0.00	7th Power Plan
Multifamily	Water Heating	Water Heater (> 55 Gal)	50 gallons	Existing	130.01	13	\$471.15	0%	30%	\$0.42	72.18	72.18	7th Power Plan
Multifamily	Water Heating	Water Heater (> 55 Gal)	50 gallons	Existing	410.72	13	\$829.89	0%	20%	\$0.20	178.34	178.34	Annual Energy Outlook, 2015
Multifamily	Interior Lighting	General Service Screw-In	1 lamps	Existing	10.09	12	\$6.13	100%	at stock turnover	\$0.07	17,034.81	25,794.74	EIA 2011-2012 Ref. Case
Multifamily	Interior Lighting	Linear Lighting	1 lamps	Existing	3.44	17	\$24.51	100%	at stock turnover	\$0.56	846.38	846.38	7th Power Plan
Multifamily	Interior Lighting	Exempted Screw-In	1 lamps	Existing	32.76	10	\$12.32	100%	at stock turnover	\$0.04	3,918.28	3,772.95	EIA 2011-2012 Ref. Case
Multifamily	Exterior Lighting	Screw-in	1 lamps	Existing	28.13	10	\$6.13	100%	at stock turnover	\$0.03	6,705.42	10,046.45	EIA 2011-2012 Ref. Case
Multifamily	Appliances	Refrigerator	1 units	Existing	106.04	15	\$240.28	100%	at stock turnover	\$0.19	7,366.03	7,366.03	7th Power Plan
Multifamily	Appliances	Second Refrigerator	1 units	Existing	150.46	15	\$240.28	35%	at stock turnover	\$0.13	625.53	625.53	7th Power Plan
Multifamily	Appliances	Freezer	1 units	Existing	120.73	22	\$83.03	53%	at stock turnover	\$0.05	611.53	611.53	RTF Workbook
Multifamily	Appliances	Clothes Washer	1 units	Existing	8.74	14	\$194.20	98%	at stock turnover	\$1.94	678.76	678.76	7th Power Plan
Multifamily	Appliances	Clothes Dryer	1 units	Existing	122.42	16	\$308.00	75%	at stock turnover	\$0.20	4,581.00	4,581.00	7th Power Plan
Multifamily	Appliances	Dishwasher	1 units	Existing	2.15	15	\$6.36	92%	at stock turnover	\$0.25	155.71	155.71	7th Power Plan
Multifamily	Appliances	Stove/Oven	1 units	Existing	120.42	20	\$307.09	62%	at stock turnover	\$0.18	8,131.75	8,131.75	7th Power Plan
Multifamily	Appliances	Microwave	1 units	Existing	8.12	11	\$4.63	98%	at stock turnover	\$0.06	934.06	934.06	7th Power Plan
Multifamily	Electronics	Personal Computers	1 units	Existing	57.37	5	\$14.17	97%	at stock turnover	\$0.05	1,278.87	1,278.87	7th Power Plan
Multifamily	Electronics	Monitor	1 units	Existing	56.18	8	\$8.21	116%	at stock turnover	\$0.02	712.05	712.05	7th Power Plan
Multifamily	Electronics	Laptops	1 units	Existing	13.88	4	\$57.18	141%	at stock turnover	\$0.94	623.06	623.06	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Multifamily	Electronics	Printer/Fax/Copier	1 units	Existing	19.33	5	\$0.01	130%	at stock turnover	\$0.00	110.58	110.58	ENERGY STAR
Multifamily	Electronics	TVs	1 units	Existing	23.82	6	\$0.01	247%	at stock turnover	\$0.00	676.64	676.64	ENERGY STAR
Multifamily	Electronics	Set-top Boxes/DVRs	1 units	Existing	64.81	5	\$0.00	71%	at stock turnover	\$0.00	0.00	0.00	Voluntary Agreement
Multifamily	Electronics	Devices and Gadgets	1 units	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Multifamily	Miscellaneous	Electric Vehicles	1 units	Existing	0.00	10	\$770.00	0%	at stock turnover	\$0.00	0.00	0.00	7th Power Plan
Multifamily	Miscellaneous	Pool Heater	1 units	Existing	3,864.38	15	\$3,546.07	1%	at stock turnover	\$0.08	365.98	365.98	AEG Research
Multifamily	Miscellaneous	Pool Pump	1 units	Existing	702.98	15	\$872.94	2%	at stock turnover	\$0.10	120.07	120.07	Southern California Edison
Multifamily	Miscellaneous	Hot Tub/Spa	1 units	Existing	169.51	15	\$350.00	6%	at stock turnover	\$0.17	117.00	117.00	AEG Research
Multifamily	Miscellaneous	Furnace Fan	1 units	Existing	78.82	20	\$97.00	90%	at stock turnover	\$0.09	-226.14	157.15	DOE Rule: EERE-2010-BT-STD-0011
Multifamily	Miscellaneous	Well Pump	1 units	Existing	0.00	5	\$0.00	5%	at stock turnover	\$0.00	0.00	0.00	N/A
Multifamily	Miscellaneous	Miscellaneous	1 units	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Multifamily	Cooling	Central AC	12 kBtu/hr	New	155.93	15	\$647.54	74%	at stock turnover	\$0.35	10,317.89	10,317.89	AEG-BEST
Multifamily	Cooling	Room AC	10.5 kBtu/hr	New	37.24	12	\$247.96	3%	at stock turnover	\$0.64	436.35	436.35	AEG-BEST
Multifamily	Cooling	Evaporative AC	1 sqft	New	0.09	15	\$0.11	0%	at stock turnover	\$0.11	346.62	346.62	New Buildings Institute Study, 2006
Multifamily	Cooling	Air-Source Heat Pump	36 kBtu/hr	New	197.40	15	\$218.37	2%	at stock turnover	\$0.06	468.61	468.61	AEG-BEST
Multifamily	Heating	Air-Source Heat Pump	36 kBtu/hr	New	116.50	15	\$218.37	2%	at stock turnover	\$0.06	276.57	276.57	AEG-BEST
Multifamily	Cooling	Geothermal Heat Pump	36 kBtu/hr	New	533.37	20	\$2,531.24	0%	at stock turnover	\$0.21	0.10	0.10	AEG-BEST
Multifamily	Heating	Geothermal Heat Pump	36 kBtu/hr	New	337.13	20	\$2,531.24	0%	at stock turnover	\$0.21	0.06	0.06	AEG-BEST
Multifamily	Heating	Electric Furnace	36 kBtu/hr	New	0.00	18	\$0.00	4%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Multifamily	Heating	Electric Room Heat	3.5 kBtu/hr	New	0.00	18	\$0.00	5%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Multifamily	Water Heating	Water Heater (<= 55 Gal)	50 gallons	New	725.99	13	\$743.91	3%	50%	\$0.09	2,076.28	2,076.28	7th Power Plan
Multifamily	Water Heating	Water Heater (<= 55 Gal)	50 gallons	New	792.83	13	\$1,215.07	2%	30%	\$0.14	1,494.42	1,494.42	7th Power Plan
Multifamily	Water Heating	Water Heater (<= 55 Gal)	50 gallons	New	1,148.69	13	\$1,573.80	1%	20%	\$0.13	1,444.92	1,444.92	Annual Energy Outlook, 2015
Multifamily	Water Heating	Water Heater (> 55 Gal)	50 gallons	New	635.12	13	\$0.00	0%	50%	\$0.00	0.00	0.00	7th Power Plan
Multifamily	Water Heating	Water Heater (> 55 Gal)	50 gallons	New	130.02	13	\$471.15	0%	30%	\$0.42	34.64	34.64	7th Power Plan
Multifamily	Water Heating	Water Heater (> 55 Gal)	50 gallons	New	410.72	13	\$829.89	0%	20%	\$0.20	85.58	85.58	Annual Energy Outlook, 2015
Multifamily	Interior Lighting	General Service Screw-In	1 lamps	New	10.33	12	\$6.13	100%	at stock turnover	\$0.06	10,148.58	11,620.09	EIA 2011-2012 Ref. Case
Multifamily	Interior Lighting	Linear Lighting	1 lamps	New	2.78	17	\$25.80	100%	at stock turnover	\$0.72	438.34	438.34	7th Power Plan
Multifamily	Interior Lighting	Exempted Screw-In	1 lamps	New	32.76	10	\$12.32	100%	at stock turnover	\$0.04	2,318.43	2,283.43	EIA 2011-2012 Ref. Case
Multifamily	Exterior Lighting	Screw-in	1 lamps	New	28.76	10	\$6.13	100%	at stock turnover	\$0.03	4,001.56	4,579.35	EIA 2011-2012 Ref. Case
Multifamily	Appliances	Refrigerator	1 units	New	106.04	15	\$240.28	100%	at stock turnover	\$0.19	4,385.27	4,385.27	7th Power Plan
Multifamily	Appliances	Second Refrigerator	1 units	New	150.46	15	\$240.28	27%	at stock turnover	\$0.13	1,110.39	1,110.39	7th Power Plan
Multifamily	Appliances	Freezer	1 units	New	120.74	22	\$83.03	41%	at stock turnover	\$0.05	44.73	44.73	RTF Workbook
Multifamily	Appliances	Clothes Washer	1 units	New	8.74	14	\$194.20	99%	at stock turnover	\$1.94	349.31	349.31	7th Power Plan
Multifamily	Appliances	Clothes Dryer	1 units	New	122.42	16	\$308.00	74%	at stock turnover	\$0.20	3,511.86	3,511.86	7th Power Plan
Multifamily	Appliances	Dishwasher	1 units	New	2.15	15	\$6.36	110%	at stock turnover	\$0.25	74.66	74.66	7th Power Plan
Multifamily	Appliances	Stove/Oven	1 units	New	120.42	20	\$307.09	51%	at stock turnover	\$0.18	4,201.04	4,201.04	7th Power Plan
Multifamily	Appliances	Microwave	1 units	New	8.12	11	\$4.63	98%	at stock turnover	\$0.06	457.25	457.25	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Multifamily	Electronics	Personal Computers	1 units	New	57.37	5	\$14.17	79%	at stock turnover	\$0.05	627.99	627.99	7th Power Plan
Multifamily	Electronics	Monitor	1 units	New	56.18	8	\$8.21	94%	at stock turnover	\$0.02	461.40	461.40	7th Power Plan
Multifamily	Electronics	Laptops	1 units	New	13.88	4	\$57.18	234%	at stock turnover	\$0.94	267.34	267.34	7th Power Plan
Multifamily	Electronics	Printer/Fax/Copier	1 units	New	19.33	5	\$0.01	191%	at stock turnover	\$0.00	62.31	62.31	ENERGY STAR
Multifamily	Electronics	TVs	1 units	New	23.82	6	\$0.01	309%	at stock turnover	\$0.00	379.86	379.86	ENERGY STAR
Multifamily	Electronics	Set-top Boxes/DVRs	1 units	New	64.81	5	\$0.00	88%	at stock turnover	\$0.00	0.00	0.00	Voluntary Agreement
Multifamily	Electronics	Devices and Gadgets	1 units	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Multifamily	Miscellaneous	Electric Vehicles	1 units	New	0.00	10	\$770.00	0%	at stock turnover	\$0.00	0.00	0.00	7th Power Plan
Multifamily	Miscellaneous	Pool Heater	1 units	New	3,864.38	15	\$3,546.07	1%	at stock turnover	\$0.08	203.27	203.27	AEG Research
Multifamily	Miscellaneous	Pool Pump	1 units	New	702.98	15	\$872.94	2%	at stock turnover	\$0.10	66.69	66.69	Southern California Edison
Multifamily	Miscellaneous	Hot Tub/Spa	1 units	New	169.51	15	\$350.00	6%	at stock turnover	\$0.17	64.99	64.99	AEG Research
Multifamily	Miscellaneous	Furnace Fan	1 units	New	78.82	20	\$97.00	90%	at stock turnover	\$0.09	-115.45	80.23	DOE Rule: EERE-2010-BT-STD-0011
Multifamily	Miscellaneous	Well Pump	1 units	New	0.00	5	\$0.00	8%	at stock turnover	\$0.00	0.00	0.00	N/A
Multifamily	Miscellaneous	Miscellaneous	1 units	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Mobile Home	Cooling	Central AC	12 kBtu/hr	Existing	82.37	15	\$647.54	74%	at stock turnover	\$0.66	979.77	979.77	AEG-BEST
Mobile Home	Cooling	Room AC	10.5 kBtu/hr	Existing	105.10	12	\$247.96	3%	at stock turnover	\$0.23	156.19	156.19	AEG-BEST
Mobile Home	Cooling	Evaporative AC	1 sqft	Existing	0.11	15	\$0.11	14%	at stock turnover	\$0.08	587.72	587.72	New Buildings Institute Study, 2006
Mobile Home	Cooling	Air-Source Heat Pump	36 kBtu/hr	Existing	113.67	15	\$218.37	2%	at stock turnover	\$0.04	59.62	59.62	AEG-BEST
Mobile Home	Heating	Air-Source Heat Pump	36 kBtu/hr	Existing	298.17	15	\$218.37	2%	at stock turnover	\$0.04	156.39	156.39	AEG-BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Mobile Home	Cooling	Geothermal Heat Pump	36 kBtu/hr	Existing	776.77	20	\$2,531.24	0%	at stock turnover	\$0.11	0.04	0.04	AEG-BEST
Mobile Home	Heating	Geothermal Heat Pump	36 kBtu/hr	Existing	871.61	20	\$2,531.24	0%	at stock turnover	\$0.11	0.05	0.05	AEG-BEST
Mobile Home	Heating	Electric Furnace	36 kBtu/hr	Existing	0.00	18	\$0.00	4%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Mobile Home	Heating	Electric Room Heat	3.5 kBtu/hr	Existing	0.00	18	\$0.00	5%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Mobile Home	Water Heating	Water Heater (<= 55 Gal)	50 gallons	Existing	914.87	13	\$743.91	4%	50%	\$0.07	779.09	779.09	7th Power Plan
Mobile Home	Water Heating	Water Heater (<= 55 Gal)	50 gallons	Existing	999.37	13	\$1,215.07	3%	30%	\$0.11	560.73	560.73	7th Power Plan
Mobile Home	Water Heating	Water Heater (<= 55 Gal)	50 gallons	Existing	1,447.84	13	\$1,573.80	2%	20%	\$0.10	542.11	542.11	Annual Energy Outlook, 2015
Mobile Home	Water Heating	Water Heater (> 55 Gal)	50 gallons	Existing	800.40	13	\$0.00	1%	50%	\$0.00	0.00	0.00	7th Power Plan
Mobile Home	Water Heating	Water Heater (> 55 Gal)	50 gallons	Existing	163.86	13	\$471.15	0%	30%	\$0.33	1.44	1.44	7th Power Plan
Mobile Home	Water Heating	Water Heater (> 55 Gal)	50 gallons	Existing	517.61	13	\$829.89	0%	20%	\$0.16	3.56	3.56	Annual Energy Outlook, 2015
Mobile Home	Interior Lighting	General Service Screw-In	1 lamps	Existing	9.84	12	\$6.13	100%	at stock turnover	\$0.07	1,467.64	2,214.36	EIA 2011-2012 Ref. Case
Mobile Home	Interior Lighting	Linear Lighting	1 lamps	Existing	3.44	17	\$24.51	100%	at stock turnover	\$0.56	101.18	101.18	7th Power Plan
Mobile Home	Interior Lighting	Exempted Screw-In	1 lamps	Existing	32.99	10	\$12.32	100%	at stock turnover	\$0.04	1,282.17	1,234.61	EIA 2011-2012 Ref. Case
Mobile Home	Exterior Lighting	Screw-in	1 lamps	Existing	27.02	10	\$6.13	100%	at stock turnover	\$0.03	783.77	1,169.97	EIA 2011-2012 Ref. Case
Mobile Home	Appliances	Refrigerator	1 units	Existing	107.76	15	\$240.28	100%	at stock turnover	\$0.19	871.41	871.41	7th Power Plan
Mobile Home	Appliances	Second Refrigerator	1 units	Existing	150.46	15	\$240.28	35%	at stock turnover	\$0.13	235.22	235.22	7th Power Plan
Mobile Home	Appliances	Freezer	1 units	Existing	122.95	22	\$83.03	53%	at stock turnover	\$0.05	311.59	311.59	RTF Workbook
Mobile Home	Appliances	Clothes Washer	1 units	Existing	9.19	14	\$194.20	98%	at stock turnover	\$1.85	113.70	113.70	7th Power Plan
Mobile Home	Appliances	Clothes Dryer	1 units	Existing	171.58	16	\$308.00	75%	at stock turnover	\$0.14	885.92	885.92	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Mobile Home	Appliances	Dishwasher	1 units	Existing	2.15	15	\$6.36	92%	at stock turnover	\$0.25	15.57	15.57	7th Power Plan
Mobile Home	Appliances	Stove/Oven	1 units	Existing	118.64	20	\$307.09	62%	at stock turnover	\$0.19	367.79	367.79	7th Power Plan
Mobile Home	Appliances	Microwave	1 units	Existing	8.12	11	\$4.63	98%	at stock turnover	\$0.06	110.41	110.41	7th Power Plan
Mobile Home	Electronics	Personal Computers	1 units	Existing	57.37	5	\$14.17	97%	at stock turnover	\$0.05	187.17	187.17	7th Power Plan
Mobile Home	Electronics	Monitor	1 units	Existing	56.18	8	\$8.21	116%	at stock turnover	\$0.02	104.21	104.21	7th Power Plan
Mobile Home	Electronics	Laptops	1 units	Existing	13.88	4	\$57.18	141%	at stock turnover	\$0.94	63.46	63.46	7th Power Plan
Mobile Home	Electronics	Printer/Fax/Copier	1 units	Existing	19.33	5	\$0.01	130%	at stock turnover	\$0.00	15.16	15.16	ENERGY STAR
Mobile Home	Electronics	TVs	1 units	Existing	32.74	6	\$0.01	247%	at stock turnover	\$0.00	123.48	123.48	ENERGY STAR
Mobile Home	Electronics	Set-top Boxes/DVRs	1 units	Existing	64.81	5	\$0.00	71%	at stock turnover	\$0.00	0.00	0.00	Voluntary Agreement
Mobile Home	Electronics	Devices and Gadgets	1 units	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Mobile Home	Miscellaneous	Electric Vehicles	1 units	Existing	116.75	10	\$770.00	0%	at stock turnover	\$0.72	38.14	38.14	7th Power Plan
Mobile Home	Miscellaneous	Pool Heater	1 units	Existing	3,864.38	15	\$3,546.07	1%	at stock turnover	\$0.08	746.82	746.82	AEG Research
Mobile Home	Miscellaneous	Pool Pump	1 units	Existing	702.98	15	\$872.94	2%	at stock turnover	\$0.10	213.18	213.18	Southern California Edison
Mobile Home	Miscellaneous	Hot Tub/Spa	1 units	Existing	169.51	15	\$350.00	6%	at stock turnover	\$0.17	76.53	76.53	AEG Research
Mobile Home	Miscellaneous	Furnace Fan	1 units	Existing	124.29	20	\$97.00	90%	at stock turnover	\$0.06	-43.05	29.92	DOE Rule: EERE-2010-BT-STD-0011
Mobile Home	Miscellaneous	Well Pump	1 units	Existing	0.00	5	\$0.00	5%	at stock turnover	\$0.00	0.00	0.00	N/A
Mobile Home	Miscellaneous	Miscellaneous	1 units	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Mobile Home	Cooling	Central AC	12 kBtu/hr	New	0.00	15	\$647.54	74%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Mobile Home	Cooling	Room AC	10.5 kBtu/hr	New	50.43	12	\$247.96	3%	at stock turnover	\$0.47	70.50	70.50	AEG-BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Mobile Home	Cooling	Evaporative AC	1 sqft	New	0.11	15	\$0.11	0%	at stock turnover	\$0.08	341.90	341.90	New Buildings Institute Study, 2006
Mobile Home	Cooling	Air-Source Heat Pump	36 kBtu/hr	New	182.40	15	\$218.37	2%	at stock turnover	\$0.03	30.42	30.42	AEG-BEST
Mobile Home	Heating	Air-Source Heat Pump	36 kBtu/hr	New	367.94	15	\$218.37	2%	at stock turnover	\$0.03	61.37	61.37	AEG-BEST
Mobile Home	Cooling	Geothermal Heat Pump	36 kBtu/hr	New	776.77	20	\$2,531.24	0%	at stock turnover	\$0.11	0.02	0.02	AEG-BEST
Mobile Home	Heating	Geothermal Heat Pump	36 kBtu/hr	New	852.90	20	\$2,531.24	0%	at stock turnover	\$0.11	0.03	0.03	AEG-BEST
Mobile Home	Heating	Electric Furnace	36 kBtu/hr	New	0.00	18	\$0.00	4%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Mobile Home	Heating	Electric Room Heat	3.5 kBtu/hr	New	0.00	18	\$0.00	5%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Mobile Home	Water Heating	Water Heater (<= 55 Gal)	50 gallons	New	914.85	13	\$743.91	3%	50%	\$0.07	402.99	402.99	7th Power Plan
Mobile Home	Water Heating	Water Heater (<= 55 Gal)	50 gallons	New	999.79	13	\$1,215.07	2%	30%	\$0.11	290.01	290.01	7th Power Plan
Mobile Home	Water Heating	Water Heater (<= 55 Gal)	50 gallons	New	1,448.25	13	\$1,573.80	1%	20%	\$0.10	280.35	280.35	Annual Energy Outlook, 2015
Mobile Home	Water Heating	Water Heater (> 55 Gal)	50 gallons	New	800.40	13	\$0.00	0%	50%	\$0.00	0.00	0.00	7th Power Plan
Mobile Home	Water Heating	Water Heater (> 55 Gal)	50 gallons	New	163.88	13	\$471.15	0%	30%	\$0.33	0.69	0.69	7th Power Plan
Mobile Home	Water Heating	Water Heater (> 55 Gal)	50 gallons	New	517.63	13	\$829.89	0%	20%	\$0.16	1.71	1.71	Annual Energy Outlook, 2015
Mobile Home	Interior Lighting	General Service Screw-In	1 lamps	New	10.12	12	\$6.13	100%	at stock turnover	\$0.07	775.24	887.64	EIA 2011-2012 Ref. Case
Mobile Home	Interior Lighting	Linear Lighting	1 lamps	New	2.78	17	\$25.80	100%	at stock turnover	\$0.72	46.36	46.36	7th Power Plan
Mobile Home	Interior Lighting	Exempted Screw-In	1 lamps	New	32.99	10	\$12.32	100%	at stock turnover	\$0.04	671.17	661.04	EIA 2011-2012 Ref. Case
Mobile Home	Exterior Lighting	Screw-in	1 lamps	New	27.76	10	\$6.13	100%	at stock turnover	\$0.03	414.71	474.58	EIA 2011-2012 Ref. Case
Mobile Home	Appliances	Refrigerator	1 units	New	107.77	15	\$240.28	100%	at stock turnover	\$0.19	518.82	518.82	7th Power Plan
Mobile Home	Appliances	Second Refrigerator	1 units	New	150.47	15	\$240.28	27%	at stock turnover	\$0.13	215.22	215.22	7th Power Plan

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Mobile Home	Appliances	Freezer	1 units	New	122.94	22	\$83.03	41%	at stock turnover	\$0.05	277.18	277.18	RTF Workbook
Mobile Home	Appliances	Clothes Washer	1 units	New	9.19	14	\$194.20	99%	at stock turnover	\$1.85	58.26	58.26	7th Power Plan
Mobile Home	Appliances	Clothes Dryer	1 units	New	171.58	16	\$308.00	74%	at stock turnover	\$0.14	542.71	542.71	7th Power Plan
Mobile Home	Appliances	Dishwasher	1 units	New	2.15	15	\$6.36	110%	at stock turnover	\$0.25	8.70	8.70	7th Power Plan
Mobile Home	Appliances	Stove/Oven	1 units	New	118.64	20	\$307.09	51%	at stock turnover	\$0.19	221.71	221.71	7th Power Plan
Mobile Home	Appliances	Microwave	1 units	New	8.12	11	\$4.63	98%	at stock turnover	\$0.06	54.05	54.05	7th Power Plan
Mobile Home	Electronics	Personal Computers	1 units	New	57.37	5	\$14.17	79%	at stock turnover	\$0.05	76.82	76.82	7th Power Plan
Mobile Home	Electronics	Monitor	1 units	New	56.18	8	\$8.21	94%	at stock turnover	\$0.02	51.12	51.12	7th Power Plan
Mobile Home	Electronics	Laptops	1 units	New	13.88	4	\$57.18	234%	at stock turnover	\$0.94	27.14	27.14	7th Power Plan
Mobile Home	Electronics	Printer/Fax/Copier	1 units	New	19.33	5	\$0.01	191%	at stock turnover	\$0.00	7.14	7.14	ENERGY STAR
Mobile Home	Electronics	TVs	1 units	New	32.74	6	\$0.01	309%	at stock turnover	\$0.00	69.96	69.96	ENERGY STAR
Mobile Home	Electronics	Set-top Boxes/DVRs	1 units	New	64.81	5	\$0.00	88%	at stock turnover	\$0.00	0.00	0.00	Voluntary Agreement
Mobile Home	Electronics	Devices and Gadgets	1 units	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Mobile Home	Miscellaneous	Electric Vehicles	1 units	New	116.75	10	\$770.00	0%	at stock turnover	\$0.72	18.91	18.91	7th Power Plan
Mobile Home	Miscellaneous	Pool Heater	1 units	New	3,864.38	15	\$3,546.07	1%	at stock turnover	\$0.08	414.80	414.80	AEG Research
Mobile Home	Miscellaneous	Pool Pump	1 units	New	702.98	15	\$872.94	2%	at stock turnover	\$0.10	118.40	118.40	Southern California Edison
Mobile Home	Miscellaneous	Hot Tub/Spa	1 units	New	169.51	15	\$350.00	6%	at stock turnover	\$0.17	63.76	63.76	AEG Research
Mobile Home	Miscellaneous	Furnace Fan	1 units	New	124.29	20	\$97.00	90%	at stock turnover	\$0.06	-21.98	15.27	DOE Rule: EERE-2010-BT-STD-0011
Mobile Home	Miscellaneous	Well Pump	1 units	New	0.00	5	\$0.00	8%	at stock turnover	\$0.00	0.00	0.00	N/A

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Mobile Home	Miscellaneous	Miscellaneous	1 units	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Single Family	Cooling	Insulation - Ceiling Installation	sqft roof	Existing	0.39	45	\$1.15	22%	38%	\$0.03	21,387.69	23,769.28	7th Power Plan
Single Family	Heating	Insulation - Ceiling Installation	sqft roof	Existing	1.62	45	\$1.15	22%	38%	\$0.03	11,219.37	11,411.51	7th Power Plan
Single Family	Cooling	Insulation - Ceiling Upgrade	sqft roof	Existing	0.06	45	\$1.01	22%	38%	\$0.12	3,192.53	3,603.72	7th Power Plan
Single Family	Heating	Insulation - Ceiling Upgrade	sqft roof	Existing	0.37	45	\$1.01	22%	38%	\$0.12	2,544.32	2,627.20	7th Power Plan
Single Family	Cooling	Insulation - Radiant Barrier	sqft roof	Existing	0.37	15	\$0.67	4%	19%	\$0.02	18,782.16	21,035.10	AEG Research
Single Family	Heating	Insulation - Radiant Barrier	sqft roof	Existing	1.94	15	\$0.67	4%	19%	\$0.02	12,477.77	12,778.63	AEG Research
Single Family	Cooling	Insulation - Wall Cavity Installation	sqft wall	Existing	0.05	45	\$1.42	40%	40%	\$0.05	0.00	0.00	7th Power Plan
Single Family	Heating	Insulation - Wall Cavity Installation	sqft wall	Existing	1.48	45	\$1.42	40%	40%	\$0.05	0.00	0.00	7th Power Plan
Single Family	Cooling	Insulation - Wall Sheathing	sqft wall	Existing	0.03	20	\$0.93	3%	3%	\$0.13	0.00	0.00	AEG-BEST
Single Family	Heating	Insulation - Wall Sheathing	sqft wall	Existing	0.45	20	\$0.93	3%	3%	\$0.13	0.00	0.00	AEG-BEST
Single Family	Cooling	Insulation - Floor Installation	sqft floor cs	Existing	-0.06	45	\$1.35	25%	30%	\$0.12	-563.72	-636.46	7th Power Plan
Single Family	Heating	Insulation - Floor Installation	sqft floor cs	Existing	0.65	45	\$1.35	25%	30%	\$0.12	762.24	786.69	7th Power Plan
Single Family	Cooling	Insulation - Floor Upgrade	sqft floor cs	Existing	0.00	25	\$3.39	25%	30%	\$0.95	0.00	0.00	7th Power Plan
Single Family	Heating	Insulation - Floor Upgrade	sqft floor cs	Existing	0.20	25	\$3.39	25%	30%	\$0.95	222.36	251.27	7th Power Plan
Single Family	Cooling	Insulation - Foundation	household	Existing	-25.30	70	\$1,241.19	2%	2%	\$0.11	0.00	0.00	RTF Workbook
Single Family	Heating	Insulation - Foundation	household	Existing	616.98	70	\$1,241.19	2%	2%	\$0.11	0.00	0.00	RTF Workbook
Single Family	Cooling	Insulation - Ducting	household	Existing	69.74	18	\$528.00	52%	60%	\$0.10	1,967.04	2,345.50	AEG-BEST
Single Family	Heating	Insulation - Ducting	household	Existing	297.52	18	\$528.00	52%	60%	\$0.10	708.69	796.06	AEG-BEST
Single Family	Cooling	Ducting - Repair and Sealing	household	Existing	92.19	20	\$769.57	30%	75%	\$0.07	15,322.25	17,667.79	7th Power Plan
Single Family	Heating	Ducting - Repair and Sealing	household	Existing	642.56	20	\$769.57	30%	75%	\$0.07	9,068.80	9,745.58	7th Power Plan
Single Family	Cooling	Building Shell - Infiltration Control	sqft home	Existing	0.01	15	\$0.68	16%	75%	\$0.14	3,662.35	4,333.56	7th Power Plan
Single Family	Heating	Building Shell - Infiltration Control	sqft home	Existing	0.34	15	\$0.68	16%	75%	\$0.14	16,637.56	18,535.18	7th Power Plan

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Single Family	Cooling	Windows - High Efficiency/ENERGY STAR	sqft window	Existing	1.28	45	\$19.01	33%	75%	\$0.13	30,185.22	34,113.41	7th Power Plan
Single Family	Heating	Windows - High Efficiency/ENERGY STAR	sqft window	Existing	6.58	45	\$19.01	33%	75%	\$0.13	19,431.03	20,096.06	7th Power Plan
Single Family	Cooling	Windows - Install Reflective Film	sqft window	Existing	0.09	45	\$3.38	16%	75%	\$0.21	2,891.50	3,324.81	7th Power Plan
Single Family	Heating	Windows - Install Reflective Film	sqft window	Existing	0.75	45	\$3.38	16%	75%	\$0.21	3,130.75	3,297.23	7th Power Plan
Single Family	Cooling	Doors - Storm and Thermal	household	Existing	9.62	20	\$682.67	43%	80%	\$0.33	1,584.70	1,877.96	AEG-BEST
Single Family	Heating	Doors - Storm and Thermal	household	Existing	119.78	20	\$682.67	43%	80%	\$0.33	2,424.91	2,735.18	AEG-BEST
Single Family	Cooling	Ductless Mini Split Heat Pump (Zonal)	household	Existing	76.23	15	\$3,448.86	1%	38%	\$0.12	367.89	430.66	7th Power Plan
Single Family	Heating	Ductless Mini Split Heat Pump (Zonal)	household	Existing	2,024.99	15	\$3,448.86	1%	38%	\$0.12	18,737.79	19,849.67	7th Power Plan
Single Family	Cooling	Ductless Mini Split Heat Pump (Ducted Forced Air)	household	Existing	187.08	15	\$3,517.21	1%	38%	\$0.08	25,020.86	28,395.32	7th Power Plan
Single Family	Heating	Ductless Mini Split Heat Pump (Ducted Forced Air)	household	Existing	3,324.13	15	\$3,517.21	1%	38%	\$0.08	23,259.29	24,288.41	7th Power Plan
Single Family	Cooling	Space Heating - Heat Recovery Ventilator	household	Existing	12.87	20	\$1,303.92	0%	0%	\$0.14	0.00	0.00	7th Power Plan
Single Family	Heating	Space Heating - Heat Recovery Ventilator	household	Existing	586.48	20	\$1,303.92	0%	0%	\$0.14	0.00	0.00	7th Power Plan
Single Family	Cooling	Furnace - Conversion to Air-Source Heat Pump	household	Existing	0.00	15	\$2,955.28	0%	0%	\$0.10	0.00	0.00	7th Power Plan
Single Family	Heating	Furnace - Conversion to Air-Source Heat Pump	household	Existing	2,394.77	15	\$2,955.28	0%	0%	\$0.10	0.00	0.00	7th Power Plan
Single Family	Cooling	Room AC - Removal of Second Unit	household	Existing	373.45	3	\$18.00	0%	50%	\$0.01	2,499.12	2,818.97	CA DEER
Single Family	Cooling	Central AC - Maintenance and Tune-Up	household	Existing	116.70	6	\$275.74	7%	75%	\$0.34	28,510.24	31,804.75	Illinois TRM
Single Family	Cooling	Central Heat Pump - Controls and Commissioning	household	Existing	0.56	15	\$581.99	65%	75%	\$0.07	0.67	0.76	7th Power Plan
Single Family	Heating	Central Heat Pump - Controls and Commissioning	household	Existing	629.90	15	\$581.99	65%	75%	\$0.07	799.71	839.76	7th Power Plan
Single Family	Cooling	Ceiling Fan - ENERGY STAR	ceiling fans	Existing	9.29	10	\$47.23	40%	75%	\$0.49	2,953.41	3,272.64	ENERGY STAR

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Single Family	Cooling	Whole-House Fan - Installation	household	Existing	38.05	20	\$714.44	15%	40%	\$1.17	3,430.10	4,189.59	California Public Utilities Commission
Single Family	Cooling	Thermostat - WiFi/Interactive	household	Existing	78.32	10	\$256.67	5%	75%	\$0.05	24,921.14	28,352.86	7th Power Plan
Single Family	Heating	Thermostat - WiFi/Interactive	household	Existing	419.57	10	\$256.67	5%	75%	\$0.05	16,720.70	17,443.83	7th Power Plan
Single Family	Water Heating	Water Heater - Drainwater Heat Recovery	household	Existing	198.83	40	\$837.67	1%	5%	\$0.21	290.26	348.18	7th Power Plan
Single Family	Water Heating	Water Heater - Faucet Aerators	aerators	Existing	100.08	15	\$5.13	34%	50%	\$0.00	1,846.27	2,261.64	7th Power Plan
Single Family	Water Heating	Water Heater - Low-Flow Showerheads	showerheads	Existing	217.55	10	\$26.56	51%	75%	\$0.01	3,628.67	4,829.16	7th Power Plan
Single Family	Water Heating	Water Heater - Pipe Insulation	feet pipe	Existing	22.52	15	\$3.26	12%	75%	\$0.01	2,772.59	3,646.22	Mid-Atlantic TRM
Single Family	Water Heating	Water Heater - Desuperheater	household	Existing	1,340.58	20	\$1,136.89	0%	0%	\$0.05	148.14	183.11	RTF Workbook
Single Family	Water Heating	Water Heater - Temperature Setback	household	Existing	67.61	2	\$5.00	41%	75%	\$0.03	892.73	1,214.11	Illinois TRM
Single Family	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	showerheads	Existing	26.00	10	\$19.30	16%	45%	\$0.07	527.39	715.54	RTF Workbook
Single Family	Water Heating	Water Heater - Solar System	household	Existing	992.44	20	\$8,847.45	2%	30%	\$0.56	6,865.63	8,612.39	7th Power Plan
Single Family	Interior Lighting	Interior Lighting - Occupancy Sensors	occ sens	Existing	64.64	8	\$99.16	0%	5%	\$0.14	2,291.68	4,076.41	Pacific Gas and Electric Research
Single Family	Exterior Lighting	Exterior Lighting - Photosensor Control	ext fixt	Existing	15.07	15	\$10.19	8%	50%	\$0.05	6,403.15	15,468.47	Michigan Energy Measures Database
Single Family	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	ext fixt pv	Existing	17.90	3	\$28.00	1%	30%	\$0.33	2,453.06	6,564.10	AEG Research
Single Family	Exterior Lighting	Exterior Lighting - Timeclock Installation	ext fixt	Existing	9.48	10	\$19.15	2%	50%	\$0.17	4,471.10	11,444.13	Ontario Power TRM
Single Family	Appliances	Refrigerator - Decommissioning and Recycling	household	Existing	298.59	6	\$143.58	0%	65%	\$0.12	32,398.58	35,969.02	PacifiCorp '13-'14 Evaluation
Single Family	Appliances	Freezer - Decommissioning and Recycling	household	Existing	287.49	5	\$143.58	0%	10%	\$0.14	6,982.12	7,890.18	PacifiCorp '13-'14 Evaluation
Single Family	Electronics	Advanced Power Strips - Tier 1	smart strip	Existing	27.99	5	\$15.83	8%	25%	\$0.10	4,844.79	4,985.30	7th Power Plan

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Single Family	Electronics	Advanced Power Strips - Tier 2	smart strip	Existing	177.20	5	\$50.49	8%	25%	\$0.05	31,381.68	31,543.23	7th Power Plan
Single Family	Miscellaneous	Pool Pump - Timer	household	Existing	447.98	10	\$85.22	1%	75%	\$0.02	3,674.28	3,809.47	Ontario Power TRM
Single Family	Miscellaneous	Pool Heater - Solar Water Heating System	household	Existing	1,905.09	20	\$3,767.92	0%	30%	\$0.14	2,609.66	2,711.45	AEG Research
Single Family	Cooling	ENERGY STAR Home Design	household	Existing	69.92	20	\$4,253.40	0%	0%	\$0.17	0.00	0.00	RTF Workbook
Single Family	Heating	ENERGY STAR Home Design	household	Existing	714.01	20	\$4,253.40	0%	0%	\$0.17	0.00	0.00	RTF Workbook
Single Family	Water Heating	ENERGY STAR Home Design	household	Existing	413.98	20	\$4,253.40	0%	0%	\$0.17	0.00	0.00	RTF Workbook
Single Family	Interior Lighting	ENERGY STAR Home Design	household	Existing	300.60	20	\$4,253.40	0%	0%	\$0.17	0.00	0.00	RTF Workbook
Single Family	Cooling	Behavioral Programs	household	Existing	5.70	1	\$5.00	39%	77%	\$0.20	1,030.69	1,264.14	AEG Research
Single Family	Heating	Behavioral Programs	household	Existing	3.39	1	\$5.00	39%	77%	\$0.20	618.24	761.15	AEG Research
Single Family	Water Heating	Behavioral Programs	household	Existing	0.69	1	\$5.00	39%	77%	\$0.20	101.05	170.44	AEG Research
Single Family	Interior Lighting	Behavioral Programs	household	Existing	1.94	1	\$5.00	39%	77%	\$0.20	268.58	640.32	AEG Research
Single Family	Exterior Lighting	Behavioral Programs	household	Existing	0.49	1	\$5.00	39%	77%	\$0.20	51.06	212.34	AEG Research
Single Family	Appliances	Behavioral Programs	household	Existing	6.17	1	\$5.00	39%	77%	\$0.20	1,119.94	1,300.74	AEG Research
Single Family	Electronics	Behavioral Programs	household	Existing	3.15	1	\$5.00	39%	77%	\$0.20	595.43	658.13	AEG Research
Single Family	Miscellaneous	Behavioral Programs	household	Existing	3.62	1	\$5.00	39%	77%	\$0.20	724.30	697.87	AEG Research
Single Family	Interior Lighting	Interior Lighting - General Service CFLs	GSL lamp	Existing	8.58	9	-\$0.13	0%	48%	\$0.00	6,294.08	19,825.87	RTF Workbook
Single Family	Interior Lighting	Interior Lighting - Exempted CFLs	Exempt lamp	Existing	20.70	5	-\$2.74	0%	48%	-\$0.01	11,082.29	14,624.26	RTF Workbook
Single Family	Cooling	Insulation - Ceiling Installation	sqft roof	New	0.44	45	\$1.15	15%	38%	\$0.03	3,045.84	3,242.66	7th Power Plan
Single Family	Heating	Insulation - Ceiling Installation	sqft roof	New	1.62	45	\$1.15	15%	38%	\$0.03	1,594.57	1,614.36	7th Power Plan
Single Family	Cooling	Insulation - Ceiling Upgrade	sqft roof	New	0.07	45	\$1.01	15%	38%	\$0.12	468.50	498.07	7th Power Plan
Single Family	Heating	Insulation - Ceiling Upgrade	sqft roof	New	0.37	45	\$1.01	15%	38%	\$0.12	366.23	368.93	7th Power Plan
Single Family	Cooling	Insulation - Radiant Barrier	sqft roof	New	0.42	15	\$0.67	1%	5%	\$0.02	476.07	507.17	AEG Research
Single Family	Heating	Insulation - Radiant Barrier	sqft roof	New	1.93	15	\$0.67	1%	5%	\$0.02	310.41	312.89	AEG Research
Single Family	Cooling	Insulation - Wall Cavity Installation	sqft wall	New	0.06	45	\$1.42	80%	80%	\$0.05	0.00	0.00	7th Power Plan

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Single Family	Heating	Insulation - Wall Cavity Installation	sqft wall	New	1.49	45	\$1.42	80%	80%	\$0.05	0.00	0.00	7th Power Plan
Single Family	Cooling	Insulation - Wall Sheathing	sqft wall	New	0.03	20	\$0.93	2%	20%	\$0.12	370.19	391.83	AEG-BEST
Single Family	Heating	Insulation - Wall Sheathing	sqft wall	New	0.47	20	\$0.93	2%	20%	\$0.12	755.85	758.65	AEG-BEST
Single Family	Cooling	Insulation - Floor Installation	sqft floor cs	New	-0.07	45	\$1.35	38%	38%	\$0.12	-2.14	-2.28	7th Power Plan
Single Family	Heating	Insulation - Floor Installation	sqft floor cs	New	0.65	45	\$1.35	38%	38%	\$0.12	2.84	2.86	7th Power Plan
Single Family	Cooling	Insulation - Floor Upgrade	sqft floor cs	New	0.00	25	\$3.39	38%	38%	\$0.95	0.00	0.00	7th Power Plan
Single Family	Heating	Insulation - Floor Upgrade	sqft floor cs	New	0.21	25	\$3.39	38%	38%	\$0.95	0.91	0.92	7th Power Plan
Single Family	Cooling	Insulation - Foundation	household	New	-60.35	70	\$1,241.19	8%	75%	\$0.08	-1,695.96	-1,801.89	RTF Workbook
Single Family	Heating	Insulation - Foundation	household	New	888.29	70	\$1,241.19	8%	75%	\$0.08	3,571.58	3,610.77	RTF Workbook
Single Family	Cooling	Insulation - Ducting	household	New	94.89	18	\$528.00	79%	80%	\$0.08	29.47	31.45	AEG-BEST
Single Family	Heating	Insulation - Ducting	household	New	397.05	18	\$528.00	79%	80%	\$0.08	10.04	10.27	AEG-BEST
Single Family	Cooling	Ducting - Repair and Sealing	household	New	97.01	20	\$769.57	30%	75%	\$0.07	1,742.43	1,861.44	7th Power Plan
Single Family	Heating	Ducting - Repair and Sealing	household	New	656.19	20	\$769.57	30%	75%	\$0.07	959.67	982.87	7th Power Plan
Single Family	Cooling	Building Shell - Infiltration Control	sqft home	New	0.01	15	\$0.68	16%	75%	\$0.14	401.92	426.00	7th Power Plan
Single Family	Heating	Building Shell - Infiltration Control	sqft home	New	0.36	15	\$0.68	16%	75%	\$0.14	1,840.91	1,848.07	7th Power Plan
Single Family	Cooling	Windows - High Efficiency/ENERGY STAR	sqft window	New	1.50	45	\$19.01	47%	75%	\$0.12	2,164.11	2,300.00	7th Power Plan
Single Family	Heating	Windows - High Efficiency/ENERGY STAR	sqft window	New	6.61	45	\$19.01	47%	75%	\$0.12	1,367.07	1,376.71	7th Power Plan
Single Family	Cooling	Windows - Install Reflective Film	sqft window	New	0.10	45	\$3.38	16%	75%	\$0.20	317.09	336.10	7th Power Plan
Single Family	Heating	Windows - Install Reflective Film	sqft window	New	0.77	45	\$3.38	16%	75%	\$0.20	337.12	338.72	7th Power Plan
Single Family	Cooling	Doors - Storm and Thermal	household	New	2.67	20	\$682.67	36%	80%	\$0.65	49.26	52.27	AEG-BEST
Single Family	Heating	Doors - Storm and Thermal	household	New	65.63	20	\$682.67	36%	80%	\$0.65	173.19	175.32	AEG-BEST
Single Family	Cooling	Ductless Mini Split Heat Pump (Zonal)	household	New	75.06	15	\$3,448.86	1%	38%	\$0.12	48.50	51.30	7th Power Plan

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Single Family	Heating	Ductless Mini Split Heat Pump (Zonal)	household	New	2,100.09	15	\$3,448.86	1%	38%	\$0.12	2,645.77	2,613.47	7th Power Plan
Single Family	Cooling	Ductless Mini Split Heat Pump (Ducted Forced Air)	household	New	198.90	15	\$3,517.21	1%	38%	\$0.08	3,606.21	3,815.12	7th Power Plan
Single Family	Heating	Ductless Mini Split Heat Pump (Ducted Forced Air)	household	New	3,417.95	15	\$3,517.21	1%	38%	\$0.08	3,123.31	3,095.90	7th Power Plan
Single Family	Cooling	Space Heating - Heat Recovery Ventilator	household	New	13.82	20	\$1,303.92	0%	0%	\$0.14	0.00	0.00	7th Power Plan
Single Family	Heating	Space Heating - Heat Recovery Ventilator	household	New	612.47	20	\$1,303.92	0%	0%	\$0.14	0.00	0.00	7th Power Plan
Single Family	Cooling	Furnace - Conversion to Air-Source Heat Pump	household	New	0.00	15	\$2,955.28	0%	0%	\$0.09	0.00	0.00	7th Power Plan
Single Family	Heating	Furnace - Conversion to Air-Source Heat Pump	household	New	2,518.18	15	\$2,955.28	0%	0%	\$0.09	0.00	0.00	7th Power Plan
Single Family	Cooling	Room AC - Removal of Second Unit	household	New	354.90	3	\$18.00	0%	50%	\$0.01	56.33	61.74	CA DEER
Single Family	Cooling	Central AC - Maintenance and Tune-Up	household	New	126.22	6	\$275.74	7%	75%	\$0.32	1,141.10	1,237.79	Illinois TRM
Single Family	Cooling	Central Heat Pump - Controls and Commissioning	household	New	0.60	15	\$581.99	25%	75%	\$0.07	0.49	0.52	7th Power Plan
Single Family	Heating	Central Heat Pump - Controls and Commissioning	household	New	661.51	15	\$581.99	25%	75%	\$0.07	563.65	558.65	7th Power Plan
Single Family	Cooling	Ceiling Fan - ENERGY STAR	ceiling fans	New	23.37	10	\$47.23	40%	75%	\$0.20	630.61	655.53	ENERGY STAR
Single Family	Cooling	Whole-House Fan - Installation	household	New	83.71	20	\$714.44	15%	40%	\$0.55	845.61	900.67	California Public Utilities Commission
Single Family	Cooling	Thermostat - WiFi/Interactive	household	New	94.83	10	\$256.67	5%	75%	\$0.05	3,010.34	3,187.52	7th Power Plan
Single Family	Heating	Thermostat - WiFi/Interactive	household	New	429.48	10	\$256.67	5%	75%	\$0.05	1,951.17	1,953.79	7th Power Plan
Single Family	Water Heating	Water Heater - Drainwater Heat Recovery	household	New	209.32	40	\$837.67	1%	10%	\$0.20	100.30	111.90	7th Power Plan
Single Family	Water Heating	Water Heater - Faucet Aerators	aerators	New	101.98	15	\$5.13	43%	50%	\$0.00	87.58	101.40	7th Power Plan
Single Family	Water Heating	Water Heater - Low-Flow Showerheads	showerheads	New	224.83	10	\$26.56	65%	75%	\$0.01	79.27	97.49	7th Power Plan

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Single Family	Water Heating	Water Heater - Pipe Insulation	feet pipe	New	23.07	15	\$3.26	12%	75%	\$0.01	186.97	225.85	Mid-Atlantic TRM
Single Family	Water Heating	Water Heater - Desuperheater	household	New	1,201.82	20	\$1,136.89	0%	0%	\$0.06	16.90	18.69	RTF Workbook
Single Family	Water Heating	Water Heater - Temperature Setback	household	New	71.25	2	\$5.00	51%	75%	\$0.03	3.66	4.71	Illinois TRM
Single Family	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	showerheads	New	27.35	10	\$19.30	16%	45%	\$0.07	28.89	35.60	RTF Workbook
Single Family	Water Heating	Water Heater - Solar System	household	New	956.42	20	\$8,847.45	2%	30%	\$0.59	813.53	914.73	7th Power Plan
Single Family	Interior Lighting	Interior Lighting - Occupancy Sensors	occ sens	New	69.56	8	\$99.16	0%	5%	\$0.12	173.96	261.88	Pacific Gas and Electric Research
Single Family	Exterior Lighting	Exterior Lighting - Photosensor Control	ext fixt	New	13.22	15	\$10.19	3%	50%	\$0.05	794.53	1,362.36	Michigan Energy Measures Database
Single Family	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	ext fixt pv	New	11.13	3	\$28.00	1%	30%	\$0.50	36.54	103.78	AEG Research
Single Family	Exterior Lighting	Exterior Lighting - Timeclock Installation	ext fixt	New	10.18	10	\$19.15	0%	50%	\$0.14	503.27	953.56	Ontario Power TRM
Single Family	Appliances	Refrigerator - Decommissioning and Recycling	household	New	279.47	6	\$143.58	0%	65%	\$0.12	1,623.81	1,744.64	PacificCorp '13-'14 Evaluation
Single Family	Appliances	Freezer - Decommissioning and Recycling	household	New	272.14	5	\$143.58	0%	10%	\$0.15	285.63	307.01	PacificCorp '13-'14 Evaluation
Single Family	Electronics	Advanced Power Strips - Tier 1	smart strip	New	30.08	5	\$15.83	8%	25%	\$0.10	360.17	353.29	7th Power Plan
Single Family	Electronics	Advanced Power Strips - Tier 2	smart strip	New	187.10	5	\$50.49	8%	25%	\$0.05	2,238.84	2,201.82	7th Power Plan
Single Family	Miscellaneous	Pool Pump - Timer	household	New	477.86	10	\$85.22	1%	75%	\$0.02	441.51	450.30	Ontario Power TRM
Single Family	Miscellaneous	Pool Heater - Solar Water Heating System	household	New	1,855.73	20	\$3,767.92	0%	30%	\$0.14	334.77	340.58	AEG Research
Single Family	Cooling	ENERGY STAR Home Design	household	New	84.44	20	\$4,253.40	15%	75%	\$0.16	4,002.54	4,085.04	RTF Workbook
Single Family	Heating	ENERGY STAR Home Design	household	New	757.65	20	\$4,253.40	15%	75%	\$0.16	5,027.73	4,981.52	RTF Workbook
Single Family	Water Heating	ENERGY STAR Home Design	household	New	404.12	20	\$4,253.40	15%	75%	\$0.16	1,143.21	1,275.08	RTF Workbook
Single Family	Interior Lighting	ENERGY STAR Home Design	household	New	324.58	20	\$4,253.40	15%	75%	\$0.16	14,863.82	16,443.55	RTF Workbook
Single Family	Cooling	Behavioral Programs	household	New	5.86	1	\$5.00	39%	77%	\$0.20	28.37	30.05	AEG Research

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Single Family	Heating	Behavioral Programs	household	New	3.54	1	\$5.00	39%	77%	\$0.20	17.06	18.71	AEG Research
Single Family	Water Heating	Behavioral Programs	household	New	0.42	1	\$5.00	39%	77%	\$0.20	1.62	2.42	AEG Research
Single Family	Interior Lighting	Behavioral Programs	household	New	1.95	1	\$5.00	39%	77%	\$0.20	6.99	15.49	AEG Research
Single Family	Exterior Lighting	Behavioral Programs	household	New	0.53	1	\$5.00	39%	77%	\$0.20	1.66	5.16	AEG Research
Single Family	Appliances	Behavioral Programs	household	New	5.45	1	\$5.00	39%	77%	\$0.20	25.46	27.61	AEG Research
Single Family	Electronics	Behavioral Programs	household	New	3.66	1	\$5.00	39%	77%	\$0.20	18.09	18.06	AEG Research
Single Family	Miscellaneous	Behavioral Programs	household	New	3.38	1	\$5.00	39%	77%	\$0.20	17.50	16.33	AEG Research
Single Family	Interior Lighting	Interior Lighting - General Service CFLs	GSL lamp	New	8.03	9	-\$0.13	0%	48%	\$0.00	923.98	2,598.22	RTF Workbook
Single Family	Interior Lighting	Interior Lighting - Exempted CFLs	Exempt lamp	New	19.70	5	-\$2.74	0%	48%	-\$0.01	1,031.58	1,297.59	RTF Workbook
Multifamily	Cooling	Insulation - Ceiling Installation	sqft roof - mf	Existing	0.14	45	\$0.75	13%	38%	\$0.05	2,857.20	3,357.26	7th Power Plan
Multifamily	Heating	Insulation - Ceiling Installation	sqft roof - mf	Existing	0.63	45	\$0.75	13%	38%	\$0.05	5,842.96	5,900.18	7th Power Plan
Multifamily	Cooling	Insulation - Ceiling Upgrade	sqft roof - mf	Existing	0.02	45	\$1.01	13%	38%	\$0.57	392.46	492.56	7th Power Plan
Multifamily	Heating	Insulation - Ceiling Upgrade	sqft roof - mf	Existing	0.06	45	\$1.01	13%	38%	\$0.57	566.45	624.63	7th Power Plan
Multifamily	Cooling	Insulation - Radiant Barrier	sqft roof - mf	Existing	0.13	15	\$0.67	4%	19%	\$0.11	1,550.58	1,919.07	AEG Research
Multifamily	Heating	Insulation - Radiant Barrier	sqft roof - mf	Existing	0.34	15	\$0.67	4%	19%	\$0.11	1,863.38	2,026.94	AEG Research
Multifamily	Cooling	Insulation - Wall Cavity Installation	sqft wall	Existing	0.02	45	\$1.06	40%	40%	\$0.04	0.00	0.00	7th Power Plan
Multifamily	Heating	Insulation - Wall Cavity Installation	sqft wall	Existing	1.28	45	\$1.06	40%	40%	\$0.04	0.00	0.00	7th Power Plan
Multifamily	Cooling	Insulation - Wall Sheathing	sqft wall	Existing	0.01	20	\$0.93	15%	15%	\$0.58	0.00	0.00	AEG-BEST
Multifamily	Heating	Insulation - Wall Sheathing	sqft wall	Existing	0.09	20	\$0.93	15%	15%	\$0.58	0.00	0.00	AEG-BEST
Multifamily	Cooling	Insulation - Floor Installation	sqft floor cs - mh	Existing	-0.01	45	\$1.01	7%	30%	\$0.08	-204.97	-253.72	7th Power Plan
Multifamily	Heating	Insulation - Floor Installation	sqft floor cs - mh	Existing	0.72	45	\$1.01	7%	30%	\$0.08	6,447.97	6,658.98	7th Power Plan
Multifamily	Cooling	Insulation - Floor Upgrade	sqft floor cs - mh	Existing	0.00	25	\$3.39	7%	30%	\$9.93	0.00	0.00	7th Power Plan

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Multifamily	Heating	Insulation - Floor Upgrade	sqft floor cs - mh	Existing	0.02	25	\$3.39	7%	30%	\$9.93	144.29	173.36	7th Power Plan
Multifamily	Cooling	Insulation - Foundation	household	Existing	-16.89	70	\$1,241.19	7%	7%	\$0.46	0.00	0.00	RTF Workbook
Multifamily	Heating	Insulation - Foundation	household	Existing	142.35	70	\$1,241.19	7%	7%	\$0.46	0.00	0.00	RTF Workbook
Multifamily	Cooling	Insulation - Ducting	household	Existing	11.44	18	\$528.00	2%	60%	\$0.89	541.13	729.47	AEG-BEST
Multifamily	Heating	Insulation - Ducting	household	Existing	25.04	18	\$528.00	2%	60%	\$0.89	349.92	423.28	AEG-BEST
Multifamily	Cooling	Ducting - Repair and Sealing	household	Existing	29.83	20	\$384.79	30%	75%	\$0.18	1,125.49	1,430.57	7th Power Plan
Multifamily	Heating	Ducting - Repair and Sealing	household	Existing	107.66	20	\$384.79	30%	75%	\$0.18	1,208.63	1,353.80	7th Power Plan
Multifamily	Cooling	Building Shell - Infiltration Control	sqft home	Existing	0.00	15	\$0.68	16%	75%	\$0.74	296.54	393.69	7th Power Plan
Multifamily	Heating	Building Shell - Infiltration Control	sqft home	Existing	0.06	15	\$0.68	16%	75%	\$0.74	2,487.68	2,948.38	7th Power Plan
Multifamily	Cooling	Windows - High Efficiency/ENERGY STAR	sqft window	Existing	0.34	45	\$18.29	26%	75%	\$0.72	2,887.95	3,632.13	7th Power Plan
Multifamily	Heating	Windows - High Efficiency/ENERGY STAR	sqft window	Existing	0.87	45	\$18.29	26%	75%	\$0.72	3,366.09	3,721.43	7th Power Plan
Multifamily	Cooling	Windows - Install Reflective Film	sqft window	Existing	0.02	45	\$5.61	33%	75%	\$0.16	177.74	219.78	7th Power Plan
Multifamily	Heating	Windows - Install Reflective Film	sqft window	Existing	1.77	45	\$5.61	33%	75%	\$0.16	5,935.17	6,292.54	7th Power Plan
Multifamily	Cooling	Doors - Storm and Thermal	household	Existing	3.03	20	\$682.67	74%	80%	\$1.73	21.90	29.67	AEG-BEST
Multifamily	Heating	Doors - Storm and Thermal	household	Existing	19.37	20	\$682.67	74%	80%	\$1.73	63.42	76.17	AEG-BEST
Multifamily	Cooling	Ductless Mini Split Heat Pump (Zonal)	household	Existing	116.95	15	\$3,448.86	0%	38%	\$0.55	817.10	984.21	7th Power Plan
Multifamily	Heating	Ductless Mini Split Heat Pump (Zonal)	household	Existing	319.40	15	\$3,448.86	0%	38%	\$0.55	3,268.94	3,624.53	7th Power Plan
Multifamily	Cooling	Ductless Mini Split Heat Pump (Ducted Forced Air)	household	Existing	58.53	15	\$3,517.21	0%	38%	\$0.45	1,669.74	2,120.44	7th Power Plan
Multifamily	Heating	Ductless Mini Split Heat Pump (Ducted Forced Air)	household	Existing	489.72	15	\$3,517.21	0%	38%	\$0.45	3,224.14	3,533.11	7th Power Plan
Multifamily	Cooling	Space Heating - Heat Recovery Ventilator	household	Existing	4.06	20	\$1,303.92	0%	0%	\$0.76	0.00	0.00	7th Power Plan
Multifamily	Heating	Space Heating - Heat Recovery Ventilator	household	Existing	94.88	20	\$1,303.92	0%	0%	\$0.76	0.00	0.00	7th Power Plan
Multifamily	Cooling	Furnace - Conversion to Air-Source Heat Pump	household	Existing	0.00	15	\$2,955.28	0%	0%	\$0.51	0.00	0.00	7th Power Plan

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Multifamily	Heating	Furnace - Conversion to Air-Source Heat Pump	household	Existing	415.54	15	\$2,955.28	0%	0%	\$0.51	0.00	0.00	7th Power Plan
Multifamily	Cooling	Room AC - Removal of Second Unit	household	Existing	601.77	3	\$18.00	0%	50%	\$0.01	5,960.45	6,643.01	CA DEER
Multifamily	Cooling	Central AC - Maintenance and Tune-Up	household	Existing	36.84	6	\$275.74	1%	75%	\$0.99	2,052.35	2,484.47	Illinois TRM
Multifamily	Cooling	Central Heat Pump - Controls and Commissioning	household	Existing	0.17	15	\$581.99	65%	75%	\$0.37	0.10	0.13	7th Power Plan
Multifamily	Heating	Central Heat Pump - Controls and Commissioning	household	Existing	112.52	15	\$581.99	65%	75%	\$0.37	77.88	86.62	7th Power Plan
Multifamily	Cooling	Ceiling Fan - ENERGY STAR	ceiling fans	Existing	9.07	10	\$47.23	40%	75%	\$0.48	730.98	856.00	ENERGY STAR
Multifamily	Cooling	Whole-House Fan - Installation	household	Existing	24.68	20	\$714.44	2%	10%	\$1.70	171.73	231.27	California Public Utilities Commission
Multifamily	Cooling	Thermostat - WiFi/Interactive	household	Existing	25.46	10	\$256.67	5%	50%	\$0.26	1,323.95	1,644.94	7th Power Plan
Multifamily	Heating	Thermostat - WiFi/Interactive	household	Existing	67.67	10	\$256.67	5%	50%	\$0.26	1,599.42	1,745.96	7th Power Plan
Multifamily	Water Heating	Water Heater - Drainwater Heat Recovery	household	Existing	131.93	40	\$837.67	1%	5%	\$0.30	159.83	194.16	7th Power Plan
Multifamily	Water Heating	Water Heater - Faucet Aerators	aerators	Existing	49.30	15	\$5.13	13%	50%	\$0.01	1,201.63	1,476.04	7th Power Plan
Multifamily	Water Heating	Water Heater - Low-Flow Showerheads	showerheads	Existing	153.76	10	\$26.56	19%	75%	\$0.02	3,716.79	4,977.33	7th Power Plan
Multifamily	Water Heating	Water Heater - Pipe Insulation	feet pipe	Existing	15.36	15	\$3.26	12%	75%	\$0.02	1,613.75	2,131.09	Mid-Atlantic TRM
Multifamily	Water Heating	Water Heater - Desuperheater	household	Existing	811.83	20	\$1,136.89	0%	0%	\$0.09	0.00	0.00	RTF Workbook
Multifamily	Water Heating	Water Heater - Temperature Setback	household	Existing	45.00	2	\$5.00	41%	75%	\$0.04	501.19	698.27	Illinois TRM
Multifamily	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	showerheads	Existing	25.50	10	\$19.30	16%	45%	\$0.07	317.58	440.02	RTF Workbook
Multifamily	Water Heating	Water Heater - Solar System	household	Existing	600.55	20	\$8,847.45	2%	30%	\$0.90	3,466.30	4,424.62	7th Power Plan
Multifamily	Interior Lighting	Interior Lighting - Occupancy Sensors	occ sens	Existing	73.08	8	\$99.16	0%	10%	\$0.14	711.69	1,448.47	Pacific Gas and Electric Research

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Multifamily	Exterior Lighting	Exterior Lighting - Photosensor Control	ext fixt	Existing	14.50	15	\$10.19	1%	50%	\$0.05	1,018.92	2,400.84	Michigan Energy Measures Database
Multifamily	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	ext fixt pv	Existing	19.35	3	\$28.00	1%	30%	\$0.31	376.15	981.30	AEG Research
Multifamily	Exterior Lighting	Exterior Lighting - Timeclock Installation	ext fixt	Existing	10.22	10	\$19.15	1%	50%	\$0.15	694.41	1,734.35	Ontario Power TRM
Multifamily	Appliances	Refrigerator - Decommissioning and Recycling	household	Existing	297.85	6	\$143.58	0%	65%	\$0.12	1,641.63	1,826.28	PacifiCorp '13-'14 Evaluation
Multifamily	Appliances	Freezer - Decommissioning and Recycling	household	Existing	290.81	5	\$143.58	0%	10%	\$0.14	440.26	493.69	PacifiCorp '13-'14 Evaluation
Multifamily	Electronics	Advanced Power Strips - Tier 1	smart strip	Existing	27.90	5	\$15.83	8%	25%	\$0.10	1,418.55	1,470.39	7th Power Plan
Multifamily	Electronics	Advanced Power Strips - Tier 2	smart strip	Existing	178.28	5	\$50.49	8%	25%	\$0.05	9,353.03	9,382.61	7th Power Plan
Multifamily	Miscellaneous	Pool Pump - Timer	household	Existing	450.68	10	\$85.22	0%	75%	\$0.02	91.24	94.20	Ontario Power TRM
Multifamily	Miscellaneous	Pool Heater - Solar Water Heating System	household	Existing	1,919.03	20	\$3,767.92	0%	30%	\$0.14	90.84	93.96	AEG Research
Multifamily	Cooling	ENERGY STAR Home Design	household	Existing	22.49	20	\$4,253.40	0%	0%	\$0.45	0.00	0.00	RTF Workbook
Multifamily	Heating	ENERGY STAR Home Design	household	Existing	117.97	20	\$4,253.40	0%	0%	\$0.45	0.00	0.00	RTF Workbook
Multifamily	Water Heating	ENERGY STAR Home Design	household	Existing	250.45	20	\$4,253.40	0%	0%	\$0.45	0.00	0.00	RTF Workbook
Multifamily	Interior Lighting	ENERGY STAR Home Design	household	Existing	145.86	20	\$4,253.40	0%	0%	\$0.45	0.00	0.00	RTF Workbook
Multifamily	Cooling	Behavioral Programs	household	Existing	3.02	1	\$5.00	39%	77%	\$0.20	149.22	220.41	AEG Research
Multifamily	Heating	Behavioral Programs	household	Existing	3.21	1	\$5.00	39%	77%	\$0.20	171.67	233.07	AEG Research
Multifamily	Water Heating	Behavioral Programs	household	Existing	2.18	1	\$5.00	39%	77%	\$0.20	94.75	165.73	AEG Research
Multifamily	Interior Lighting	Behavioral Programs	household	Existing	1.71	1	\$5.00	39%	77%	\$0.20	65.14	182.45	AEG Research
Multifamily	Exterior Lighting	Behavioral Programs	household	Existing	0.49	1	\$5.00	39%	77%	\$0.20	15.76	62.53	AEG Research
Multifamily	Appliances	Behavioral Programs	household	Existing	8.25	1	\$5.00	39%	77%	\$0.20	458.33	514.36	AEG Research
Multifamily	Electronics	Behavioral Programs	household	Existing	4.35	1	\$5.00	39%	77%	\$0.20	245.63	275.11	AEG Research
Multifamily	Miscellaneous	Behavioral Programs	household	Existing	0.94	1	\$5.00	39%	77%	\$0.20	49.20	61.19	AEG Research
Multifamily	Interior Lighting	Interior Lighting - General Service CFLs	GSL lamp	Existing	8.73	9	-\$0.13	0%	45%	\$0.00	1,201.75	3,650.50	RTF Workbook

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Multifamily	Interior Lighting	Interior Lighting - Exempted CFLs	Exempt lamp	Existing	22.05	5	-\$2.74	0%	45%	-\$0.01	451.51	587.81	RTF Workbook
Multifamily	Cooling	Insulation - Ceiling Installation	sqft roof - mf	New	0.13	45	\$0.75	9%	38%	\$0.05	401.57	456.50	7th Power Plan
Multifamily	Heating	Insulation - Ceiling Installation	sqft roof - mf	New	0.63	45	\$0.75	9%	38%	\$0.05	861.33	866.68	7th Power Plan
Multifamily	Cooling	Insulation - Ceiling Upgrade	sqft roof - mf	New	0.02	45	\$1.01	9%	38%	\$0.57	61.12	69.05	7th Power Plan
Multifamily	Heating	Insulation - Ceiling Upgrade	sqft roof - mf	New	0.07	45	\$1.01	9%	38%	\$0.57	95.33	94.81	7th Power Plan
Multifamily	Cooling	Insulation - Radiant Barrier	sqft roof - mf	New	0.13	15	\$0.67	1%	5%	\$0.11	47.95	54.38	AEG Research
Multifamily	Heating	Insulation - Radiant Barrier	sqft roof - mf	New	0.36	15	\$0.67	1%	5%	\$0.11	62.30	62.04	AEG Research
Multifamily	Cooling	Insulation - Wall Cavity Installation	sqft wall	New	0.02	45	\$1.06	80%	80%	\$0.04	0.00	0.00	7th Power Plan
Multifamily	Heating	Insulation - Wall Cavity Installation	sqft wall	New	1.28	45	\$1.06	80%	80%	\$0.04	0.00	0.00	7th Power Plan
Multifamily	Cooling	Insulation - Wall Sheathing	sqft wall	New	0.01	20	\$0.93	15%	20%	\$0.58	10.12	11.41	AEG-BEST
Multifamily	Heating	Insulation - Wall Sheathing	sqft wall	New	0.10	20	\$0.93	15%	20%	\$0.58	41.58	41.25	AEG-BEST
Multifamily	Cooling	Insulation - Floor Installation	sqft floor cs - mh	New	-0.01	45	\$1.01	15%	38%	\$0.08	-24.66	-27.88	7th Power Plan
Multifamily	Heating	Insulation - Floor Installation	sqft floor cs - mh	New	0.73	45	\$1.01	15%	38%	\$0.08	777.29	779.19	7th Power Plan
Multifamily	Cooling	Insulation - Floor Upgrade	sqft floor cs - mh	New	0.00	25	\$3.39	15%	38%	\$9.91	0.00	0.00	7th Power Plan
Multifamily	Heating	Insulation - Floor Upgrade	sqft floor cs - mh	New	0.02	25	\$3.39	15%	38%	\$9.91	20.98	21.00	7th Power Plan
Multifamily	Cooling	Insulation - Foundation	household	New	-16.63	70	\$1,241.19	43%	75%	\$0.46	-80.50	-91.00	RTF Workbook
Multifamily	Heating	Insulation - Foundation	household	New	152.57	70	\$1,241.19	43%	75%	\$0.46	335.31	334.36	RTF Workbook
Multifamily	Cooling	Insulation - Ducting	household	New	11.34	18	\$528.00	14%	80%	\$0.93	82.98	94.99	AEG-BEST
Multifamily	Heating	Insulation - Ducting	household	New	26.19	18	\$528.00	14%	80%	\$0.93	55.46	56.32	AEG-BEST
Multifamily	Cooling	Ducting - Repair and Sealing	household	New	30.40	20	\$384.79	30%	75%	\$0.17	150.52	171.96	7th Power Plan
Multifamily	Heating	Ducting - Repair and Sealing	household	New	116.11	20	\$384.79	30%	75%	\$0.17	166.83	168.26	7th Power Plan
Multifamily	Cooling	Building Shell - Infiltration Control	sqft home	New	0.00	15	\$0.68	16%	75%	\$0.74	39.96	45.43	7th Power Plan

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Multifamily	Heating	Building Shell - Infiltration Control	sqft home	New	0.07	15	\$0.68	16%	75%	\$0.74	364.33	365.78	7th Power Plan
Multifamily	Cooling	Windows - High Efficiency/ENERGY STAR	sqft window	New	0.34	45	\$18.29	37%	75%	\$0.71	291.98	329.89	7th Power Plan
Multifamily	Heating	Windows - High Efficiency/ENERGY STAR	sqft window	New	0.95	45	\$18.29	37%	75%	\$0.71	369.37	367.19	7th Power Plan
Multifamily	Cooling	Windows - Install Reflective Film	sqft window	New	0.02	45	\$5.61	53%	75%	\$0.16	12.05	13.62	7th Power Plan
Multifamily	Heating	Windows - Install Reflective Film	sqft window	New	1.84	45	\$5.61	53%	75%	\$0.16	420.05	419.64	7th Power Plan
Multifamily	Cooling	Doors - Storm and Thermal	household	New	0.73	20	\$682.67	80%	80%	\$3.57	0.00	0.00	AEG-BEST
Multifamily	Heating	Doors - Storm and Thermal	household	New	11.40	20	\$682.67	80%	80%	\$3.57	0.00	0.00	AEG-BEST
Multifamily	Cooling	Ductless Mini Split Heat Pump (Zonal)	household	New	101.60	15	\$3,448.86	3%	38%	\$0.57	100.90	114.39	7th Power Plan
Multifamily	Heating	Ductless Mini Split Heat Pump (Zonal)	household	New	351.81	15	\$3,448.86	3%	38%	\$0.57	556.09	550.30	7th Power Plan
Multifamily	Cooling	Ductless Mini Split Heat Pump (Ducted Forced Air)	household	New	61.13	15	\$3,517.21	3%	38%	\$0.45	268.59	302.35	7th Power Plan
Multifamily	Heating	Ductless Mini Split Heat Pump (Ducted Forced Air)	household	New	539.24	15	\$3,517.21	3%	38%	\$0.45	531.13	521.46	7th Power Plan
Multifamily	Cooling	Space Heating - Heat Recovery Ventilator	household	New	4.28	20	\$1,303.92	0%	0%	\$0.76	0.00	0.00	7th Power Plan
Multifamily	Heating	Space Heating - Heat Recovery Ventilator	household	New	107.17	20	\$1,303.92	0%	0%	\$0.76	0.00	0.00	7th Power Plan
Multifamily	Cooling	Furnace - Conversion to Air-Source Heat Pump	household	New	0.00	15	\$2,955.28	0%	0%	\$0.50	0.00	0.00	7th Power Plan
Multifamily	Heating	Furnace - Conversion to Air-Source Heat Pump	household	New	466.16	15	\$2,955.28	0%	0%	\$0.50	0.00	0.00	7th Power Plan
Multifamily	Cooling	Room AC - Removal of Second Unit	household	New	484.28	3	\$18.00	0%	50%	\$0.01	125.73	150.45	CA DEER
Multifamily	Cooling	Central AC - Maintenance and Tune-Up	household	New	38.84	6	\$275.74	1%	75%	\$0.96	95.60	112.09	Illinois TRM
Multifamily	Cooling	Central Heat Pump - Controls and Commissioning	household	New	0.18	15	\$581.99	25%	75%	\$0.36	0.09	0.10	7th Power Plan
Multifamily	Heating	Central Heat Pump - Controls and Commissioning	household	New	126.17	15	\$581.99	25%	75%	\$0.36	73.39	72.08	7th Power Plan

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Multifamily	Cooling	Ceiling Fan - ENERGY STAR	ceiling fans	New	17.68	10	\$47.23	40%	75%	\$0.25	161.29	177.96	ENERGY STAR
Multifamily	Cooling	Whole-House Fan - Installation	household	New	25.94	20	\$714.44	2%	10%	\$1.66	24.45	28.00	California Public Utilities Commission
Multifamily	Cooling	Thermostat - WiFi/Interactive	household	New	25.95	10	\$256.67	5%	50%	\$0.26	191.20	215.34	7th Power Plan
Multifamily	Heating	Thermostat - WiFi/Interactive	household	New	74.33	10	\$256.67	5%	50%	\$0.26	248.79	245.53	7th Power Plan
Multifamily	Water Heating	Water Heater - Drainwater Heat Recovery	household	New	129.29	40	\$837.67	1%	10%	\$0.32	60.67	67.75	7th Power Plan
Multifamily	Water Heating	Water Heater - Faucet Aerators	aerators	New	38.18	15	\$5.13	9%	50%	\$0.01	133.99	156.23	7th Power Plan
Multifamily	Water Heating	Water Heater - Low-Flow Showerheads	showerheads	New	120.84	10	\$26.56	14%	75%	\$0.02	192.38	239.78	7th Power Plan
Multifamily	Water Heating	Water Heater - Pipe Insulation	feet pipe	New	14.42	15	\$3.26	12%	75%	\$0.02	116.71	142.61	Mid-Atlantic TRM
Multifamily	Water Heating	Water Heater - Desuperheater	household	New	742.10	20	\$1,136.89	0%	0%	\$0.10	0.00	0.00	RTF Workbook
Multifamily	Water Heating	Water Heater - Temperature Setback	household	New	44.02	2	\$5.00	51%	75%	\$0.04	2.30	3.02	Illinois TRM
Multifamily	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	showerheads	New	20.58	10	\$19.30	16%	45%	\$0.09	15.77	19.60	RTF Workbook
Multifamily	Water Heating	Water Heater - Solar System	household	New	590.84	20	\$8,847.45	2%	30%	\$0.94	493.95	556.92	7th Power Plan
Multifamily	Interior Lighting	Interior Lighting - Occupancy Sensors	occ sens	New	73.28	8	\$99.16	2%	10%	\$0.12	49.65	88.43	Pacific Gas and Electric Research
Multifamily	Exterior Lighting	Exterior Lighting - Photosensor Control	ext fixt	New	16.05	15	\$10.19	0%	50%	\$0.04	190.08	331.24	Michigan Energy Measures Database
Multifamily	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	ext fixt pv	New	11.21	3	\$28.00	1%	30%	\$0.50	6.76	19.73	AEG Research
Multifamily	Exterior Lighting	Exterior Lighting - Timeclock Installation	ext fixt	New	11.59	10	\$19.15	0%	50%	\$0.13	106.26	205.44	Ontario Power TRM
Multifamily	Appliances	Refrigerator - Decommissioning and Recycling	household	New	279.03	6	\$143.58	0%	65%	\$0.12	388.53	417.20	PacificCorp '13-'14 Evaluation
Multifamily	Appliances	Freezer - Decommissioning and Recycling	household	New	272.03	5	\$143.58	0%	10%	\$0.15	3.46	3.72	PacificCorp '13-'14 Evaluation

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Multifamily	Electronics	Advanced Power Strips - Tier 1	smart strip	New	32.37	5	\$15.83	8%	25%	\$0.09	135.90	133.39	7th Power Plan
Multifamily	Electronics	Advanced Power Strips - Tier 2	smart strip	New	201.85	5	\$50.49	8%	25%	\$0.05	846.96	834.01	7th Power Plan
Multifamily	Miscellaneous	Pool Pump - Timer	household	New	484.14	10	\$85.22	0%	75%	\$0.02	13.06	13.42	Ontario Power TRM
Multifamily	Miscellaneous	Pool Heater - Solar Water Heating System	household	New	1,881.33	20	\$3,767.92	0%	30%	\$0.14	13.92	14.26	AEG Research
Multifamily	Cooling	ENERGY STAR Home Design	household	New	23.34	20	\$4,253.40	15%	75%	\$0.42	390.49	412.03	RTF Workbook
Multifamily	Heating	ENERGY STAR Home Design	household	New	134.35	20	\$4,253.40	15%	75%	\$0.42	1,014.12	1,000.80	RTF Workbook
Multifamily	Water Heating	ENERGY STAR Home Design	household	New	249.60	20	\$4,253.40	15%	75%	\$0.42	692.95	775.16	RTF Workbook
Multifamily	Interior Lighting	ENERGY STAR Home Design	household	New	170.71	20	\$4,253.40	15%	75%	\$0.42	2,470.58	2,882.89	RTF Workbook
Multifamily	Cooling	Behavioral Programs	household	New	2.66	1	\$5.00	39%	77%	\$0.23	4.79	5.88	AEG Research
Multifamily	Heating	Behavioral Programs	household	New	3.07	1	\$5.00	39%	77%	\$0.23	5.99	6.52	AEG Research
Multifamily	Water Heating	Behavioral Programs	household	New	1.12	1	\$5.00	39%	77%	\$0.23	1.74	2.65	AEG Research
Multifamily	Interior Lighting	Behavioral Programs	household	New	1.60	1	\$5.00	39%	77%	\$0.23	2.05	5.81	AEG Research
Multifamily	Exterior Lighting	Behavioral Programs	household	New	0.52	1	\$5.00	39%	77%	\$0.23	0.65	2.09	AEG Research
Multifamily	Appliances	Behavioral Programs	household	New	7.43	1	\$5.00	39%	77%	\$0.23	13.84	15.13	AEG Research
Multifamily	Electronics	Behavioral Programs	household	New	4.67	1	\$5.00	39%	77%	\$0.23	9.22	9.30	AEG Research
Multifamily	Miscellaneous	Behavioral Programs	household	New	0.69	1	\$5.00	39%	77%	\$0.23	1.25	1.54	AEG Research
Multifamily	Interior Lighting	Interior Lighting - General Service CFLs	GSL lamp	New	8.16	9	-\$0.13	0%	45%	\$0.00	225.87	655.86	RTF Workbook
Multifamily	Interior Lighting	Interior Lighting - Exempted CFLs	Exempt lamp	New	20.89	5	-\$2.74	0%	45%	-\$0.01	56.08	72.08	RTF Workbook
Mobile Home	Cooling	Insulation - Ceiling Installation	sqft roof	Existing	0.19	25	\$2.16	10%	38%	\$0.27	571.93	704.22	7th Power Plan
Mobile Home	Heating	Insulation - Ceiling Installation	sqft roof	Existing	0.24	25	\$2.16	10%	38%	\$0.27	126.58	151.90	7th Power Plan
Mobile Home	Cooling	Insulation - Ceiling Upgrade	sqft roof	Existing	0.03	25	\$2.16	10%	38%	\$0.97	82.84	105.87	7th Power Plan
Mobile Home	Heating	Insulation - Ceiling Upgrade	sqft roof	Existing	0.09	25	\$2.16	10%	38%	\$0.97	47.04	57.08	7th Power Plan
Mobile Home	Cooling	Insulation - Radiant Barrier	sqft roof	Existing	0.20	15	\$0.67	4%	19%	\$0.03	327.74	380.29	AEG Research
Mobile Home	Heating	Insulation - Radiant Barrier	sqft roof	Existing	1.38	15	\$0.67	4%	19%	\$0.03	420.86	442.22	AEG Research

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Mobile Home	Cooling	Insulation - Wall Cavity Installation	sqft wall	Existing	0.03	25	\$1.42	40%	40%	\$0.08	0.00	0.00	7th Power Plan
Mobile Home	Heating	Insulation - Wall Cavity Installation	sqft wall	Existing	1.04	25	\$1.42	40%	40%	\$0.08	0.00	0.00	7th Power Plan
Mobile Home	Cooling	Insulation - Wall Sheathing	sqft wall	Existing	0.01	20	\$0.93	15%	15%	\$0.17	0.00	0.00	AEG-BEST
Mobile Home	Heating	Insulation - Wall Sheathing	sqft wall	Existing	0.32	20	\$0.93	15%	15%	\$0.17	0.00	0.00	AEG-BEST
Mobile Home	Cooling	Insulation - Floor Installation	sqft floor cs	Existing	-0.03	25	\$3.39	18%	30%	\$0.61	-18.54	-23.38	7th Power Plan
Mobile Home	Heating	Insulation - Floor Installation	sqft floor cs	Existing	0.32	25	\$3.39	18%	30%	\$0.61	35.80	43.38	7th Power Plan
Mobile Home	Cooling	Insulation - Floor Upgrade	sqft floor cs	Existing	0.00	25	\$3.39	18%	30%	\$1.30	0.00	0.00	7th Power Plan
Mobile Home	Heating	Insulation - Floor Upgrade	sqft floor cs	Existing	0.14	25	\$3.39	18%	30%	\$1.30	15.32	18.58	7th Power Plan
Mobile Home	Cooling	Insulation - Foundation	household	Existing	-28.29	70	\$1,241.19	0%	0%	\$0.10	0.00	0.00	RTF Workbook
Mobile Home	Heating	Insulation - Foundation	household	Existing	659.22	70	\$1,241.19	0%	0%	\$0.10	0.00	0.00	RTF Workbook
Mobile Home	Cooling	Insulation - Ducting	household	Existing	73.90	18	\$528.00	48%	60%	\$0.09	56.97	67.87	AEG-BEST
Mobile Home	Heating	Insulation - Ducting	household	Existing	308.47	18	\$528.00	48%	60%	\$0.09	64.57	74.33	AEG-BEST
Mobile Home	Cooling	Ducting - Repair and Sealing	household	Existing	79.10	20	\$769.57	30%	75%	\$0.04	234.77	272.99	7th Power Plan
Mobile Home	Heating	Ducting - Repair and Sealing	household	Existing	1,408.26	20	\$769.57	30%	75%	\$0.04	1,188.37	1,226.95	7th Power Plan
Mobile Home	Cooling	Building Shell - Infiltration Control	sqft home	Existing	0.00	25	\$3.18	16%	75%	\$1.01	59.47	76.18	7th Power Plan
Mobile Home	Heating	Building Shell - Infiltration Control	sqft home	Existing	0.16	25	\$3.18	16%	75%	\$1.01	362.13	440.00	7th Power Plan
Mobile Home	Cooling	Windows - High Efficiency/ENERGY STAR	sqft window	Existing	0.66	25	\$21.16	8%	75%	\$0.25	816.00	979.04	7th Power Plan
Mobile Home	Heating	Windows - High Efficiency/ENERGY STAR	sqft window	Existing	4.03	25	\$21.16	8%	75%	\$0.25	866.12	1,002.17	7th Power Plan
Mobile Home	Cooling	Windows - Install Reflective Film	sqft window	Existing	0.05	25	\$1.40	16%	75%	\$0.05	53.60	62.12	7th Power Plan
Mobile Home	Heating	Windows - Install Reflective Film	sqft window	Existing	1.55	25	\$1.40	16%	75%	\$0.05	312.94	326.70	7th Power Plan
Mobile Home	Cooling	Doors - Storm and Thermal	household	Existing	7.64	20	\$682.67	3%	80%	\$0.31	85.07	106.38	AEG-BEST
Mobile Home	Heating	Doors - Storm and Thermal	household	Existing	120.62	20	\$682.67	3%	80%	\$0.31	235.37	283.40	AEG-BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Mobile Home	Cooling	Ductless Mini Split Heat Pump (Zonal)	household	Existing	254.63	15	\$3,448.86	0%	38%	\$0.15	144.33	170.82	7th Power Plan
Mobile Home	Heating	Ductless Mini Split Heat Pump (Zonal)	household	Existing	1,342.83	15	\$3,448.86	0%	38%	\$0.15	424.87	477.86	7th Power Plan
Mobile Home	Cooling	Ductless Mini Split Heat Pump (Ducted Forced Air)	household	Existing	140.43	15	\$3,517.21	0%	38%	\$0.05	313.89	361.89	7th Power Plan
Mobile Home	Heating	Ductless Mini Split Heat Pump (Ducted Forced Air)	household	Existing	5,325.61	15	\$3,517.21	0%	38%	\$0.05	2,419.93	2,504.53	7th Power Plan
Mobile Home	Cooling	Space Heating - Heat Recovery Ventilator	household	Existing	9.67	20	\$1,303.92	0%	0%	\$0.18	0.00	0.00	7th Power Plan
Mobile Home	Heating	Space Heating - Heat Recovery Ventilator	household	Existing	430.22	20	\$1,303.92	0%	0%	\$0.18	0.00	0.00	7th Power Plan
Mobile Home	Cooling	Furnace - Conversion to Air-Source Heat Pump	household	Existing	0.00	15	\$2,955.28	0%	0%	\$0.11	0.00	0.00	7th Power Plan
Mobile Home	Heating	Furnace - Conversion to Air-Source Heat Pump	household	Existing	1,895.81	15	\$2,955.28	0%	0%	\$0.11	0.00	0.00	7th Power Plan
Mobile Home	Cooling	Room AC - Removal of Second Unit	household	Existing	1,311.73	3	\$18.00	0%	50%	\$0.00	1,041.70	1,148.03	CA DEER
Mobile Home	Cooling	Central AC - Maintenance and Tune-Up	household	Existing	82.45	6	\$275.74	7%	75%	\$0.45	321.50	372.30	Illinois TRM
Mobile Home	Cooling	Central Heat Pump - Controls and Commissioning	household	Existing	-5.15	15	\$581.99	65%	75%	\$0.10	-0.29	-0.34	7th Power Plan
Mobile Home	Heating	Central Heat Pump - Controls and Commissioning	household	Existing	420.93	15	\$581.99	65%	75%	\$0.10	24.73	27.45	7th Power Plan
Mobile Home	Cooling	Ceiling Fan - ENERGY STAR	ceiling fans	Existing	8.81	10	\$47.23	40%	75%	\$0.49	88.68	102.01	ENERGY STAR
Mobile Home	Cooling	Whole-House Fan - Installation	household	Existing	55.08	20	\$714.44	15%	40%	\$0.78	86.45	109.31	California Public Utilities Commission
Mobile Home	Cooling	Thermostat - WiFi/Interactive	household	Existing	43.34	10	\$256.67	5%	75%	\$0.07	453.15	523.24	7th Power Plan
Mobile Home	Heating	Thermostat - WiFi/Interactive	household	Existing	289.10	10	\$256.67	5%	75%	\$0.07	525.35	582.42	7th Power Plan
Mobile Home	Water Heating	Water Heater - Drainwater Heat Recovery	household	Existing	170.86	40	\$837.67	1%	5%	\$0.24	16.69	20.16	7th Power Plan
Mobile Home	Water Heating	Water Heater - Faucet Aerators	aerators	Existing	93.61	15	\$5.13	28%	50%	\$0.00	107.60	132.13	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Mobile Home	Water Heating	Water Heater - Low-Flow Showerheads	showerheads	Existing	202.91	10	\$26.56	42%	75%	\$0.01	231.54	308.46	7th Power Plan
Mobile Home	Water Heating	Water Heater - Pipe Insulation	feet pipe	Existing	19.47	15	\$3.26	12%	75%	\$0.01	163.41	214.68	Mid-Atlantic TRM
Mobile Home	Water Heating	Water Heater - Desuperheater	household	Existing	1,047.24	20	\$1,136.89	0%	0%	\$0.07	0.00	0.00	RTF Workbook
Mobile Home	Water Heating	Water Heater - Temperature Setback	household	Existing	58.10	2	\$5.00	41%	75%	\$0.03	52.11	71.21	Illinois TRM
Mobile Home	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	showerheads	Existing	26.16	10	\$19.30	16%	45%	\$0.07	26.18	35.69	RTF Workbook
Mobile Home	Water Heating	Water Heater - Solar System	household	Existing	775.28	20	\$8,847.45	1%	30%	\$0.71	372.80	470.88	7th Power Plan
Mobile Home	Interior Lighting	Interior Lighting - Occupancy Sensors	occ sens	Existing	61.13	8	\$99.16	0%	10%	\$0.16	76.92	137.15	Pacific Gas and Electric Research
Mobile Home	Exterior Lighting	Exterior Lighting - Photosensor Control	ext fixt	Existing	16.55	15	\$10.19	7%	50%	\$0.04	127.40	289.19	Michigan Energy Measures Database
Mobile Home	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	ext fixt pv	Existing	21.05	3	\$28.00	1%	30%	\$0.28	50.58	128.77	AEG Research
Mobile Home	Exterior Lighting	Exterior Lighting - Timeclock Installation	ext fixt	Existing	11.22	10	\$19.15	0%	50%	\$0.14	95.68	231.21	Ontario Power TRM
Mobile Home	Appliances	Refrigerator - Decommissioning and Recycling	household	Existing	299.69	6	\$143.58	0%	65%	\$0.12	624.37	689.74	PacifiCorp '13-'14 Evaluation
Mobile Home	Appliances	Freezer - Decommissioning and Recycling	household	Existing	290.57	5	\$143.58	0%	10%	\$0.14	220.47	246.74	PacifiCorp '13-'14 Evaluation
Mobile Home	Electronics	Advanced Power Strips - Tier 1	smart strip	Existing	28.18	5	\$15.83	8%	25%	\$0.10	167.99	172.91	7th Power Plan
Mobile Home	Electronics	Advanced Power Strips - Tier 2	smart strip	Existing	178.41	5	\$50.49	8%	25%	\$0.05	1,088.16	1,093.52	7th Power Plan
Mobile Home	Miscellaneous	Pool Pump - Timer	household	Existing	435.49	10	\$85.22	0%	75%	\$0.02	151.93	163.56	Ontario Power TRM
Mobile Home	Miscellaneous	Pool Heater - Solar Water Heating System	household	Existing	1,842.24	20	\$3,767.92	0%	30%	\$0.14	172.33	186.49	AEG Research
Mobile Home	Cooling	ENERGY STAR Home Design	household	Existing	36.21	20	\$4,253.40	0%	0%	\$0.25	0.00	0.00	RTF Workbook
Mobile Home	Heating	ENERGY STAR Home Design	household	Existing	493.72	20	\$4,253.40	0%	0%	\$0.25	0.00	0.00	RTF Workbook
Mobile Home	Water Heating	ENERGY STAR Home Design	household	Existing	322.89	20	\$4,253.40	0%	0%	\$0.25	0.00	0.00	RTF Workbook

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Mobile Home	Interior Lighting	ENERGY STAR Home Design	household	Existing	141.30	20	\$4,253.40	0%	0%	\$0.25	0.00	0.00	RTF Workbook
Mobile Home	Cooling	Behavioral Programs	household	Existing	3.74	1	\$5.00	39%	77%	\$0.20	22.66	31.01	AEG Research
Mobile Home	Heating	Behavioral Programs	household	Existing	4.18	1	\$5.00	39%	77%	\$0.20	24.93	36.04	AEG Research
Mobile Home	Water Heating	Behavioral Programs	household	Existing	1.40	1	\$5.00	39%	77%	\$0.20	7.14	12.11	AEG Research
Mobile Home	Interior Lighting	Behavioral Programs	household	Existing	1.20	1	\$5.00	39%	77%	\$0.20	5.84	13.94	AEG Research
Mobile Home	Exterior Lighting	Behavioral Programs	household	Existing	0.34	1	\$5.00	39%	77%	\$0.20	1.29	4.99	AEG Research
Mobile Home	Appliances	Behavioral Programs	household	Existing	7.47	1	\$5.00	39%	77%	\$0.20	48.12	54.61	AEG Research
Mobile Home	Electronics	Behavioral Programs	household	Existing	4.31	1	\$5.00	39%	77%	\$0.20	28.58	31.39	AEG Research
Mobile Home	Miscellaneous	Behavioral Programs	household	Existing	2.28	1	\$5.00	39%	77%	\$0.20	16.24	15.40	AEG Research
Mobile Home	Interior Lighting	Interior Lighting - General Service CFLs	GSL lamp	Existing	8.25	9	-\$0.13	0%	46%	\$0.00	103.64	319.12	RTF Workbook
Mobile Home	Interior Lighting	Interior Lighting - Exempted CFLs	Exempt lamp	Existing	21.66	5	-\$2.74	0%	46%	-\$0.01	151.26	194.93	RTF Workbook
Mobile Home	Cooling	Insulation - Ceiling Installation	sqft roof	New	0.19	25	\$2.16	28%	38%	\$0.29	25.00	25.85	7th Power Plan
Mobile Home	Heating	Insulation - Ceiling Installation	sqft roof	New	0.26	25	\$2.16	28%	38%	\$0.29	6.08	6.13	7th Power Plan
Mobile Home	Cooling	Insulation - Ceiling Upgrade	sqft roof	New	0.03	25	\$2.16	28%	38%	\$1.00	3.80	3.94	7th Power Plan
Mobile Home	Heating	Insulation - Ceiling Upgrade	sqft roof	New	0.10	25	\$2.16	28%	38%	\$1.00	2.26	2.30	7th Power Plan
Mobile Home	Cooling	Insulation - Radiant Barrier	sqft roof	New	0.19	15	\$0.67	1%	5%	\$0.03	9.82	10.20	AEG Research
Mobile Home	Heating	Insulation - Radiant Barrier	sqft roof	New	1.40	15	\$0.67	1%	5%	\$0.03	12.99	13.11	AEG Research
Mobile Home	Cooling	Insulation - Wall Cavity Installation	sqft wall	New	0.03	25	\$1.42	68%	80%	\$0.08	9.38	9.72	7th Power Plan
Mobile Home	Heating	Insulation - Wall Cavity Installation	sqft wall	New	1.07	25	\$1.42	68%	80%	\$0.08	64.40	64.97	7th Power Plan
Mobile Home	Cooling	Insulation - Wall Sheathing	sqft wall	New	0.01	20	\$0.93	15%	20%	\$0.18	1.92	1.99	AEG-BEST
Mobile Home	Heating	Insulation - Wall Sheathing	sqft wall	New	0.34	20	\$0.93	15%	20%	\$0.18	8.38	8.45	AEG-BEST
Mobile Home	Cooling	Insulation - Floor Installation	sqft floor cs	New	-0.03	25	\$3.39	33%	38%	\$0.61	-0.93	-0.97	7th Power Plan
Mobile Home	Heating	Insulation - Floor Installation	sqft floor cs	New	0.35	25	\$3.39	33%	38%	\$0.61	1.91	1.95	7th Power Plan
Mobile Home	Cooling	Insulation - Floor Upgrade	sqft floor cs	New	0.00	25	\$3.39	33%	38%	\$1.31	0.00	0.00	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Mobile Home	Heating	Insulation - Floor Upgrade	sqft floor cs	New	0.15	25	\$3.39	33%	38%	\$1.31	0.82	0.84	7th Power Plan
Mobile Home	Cooling	Insulation - Foundation	household	New	-26.88	70	\$1,241.19	0%	0%	\$0.10	0.00	0.00	RTF Workbook
Mobile Home	Heating	Insulation - Foundation	household	New	652.88	70	\$1,241.19	0%	0%	\$0.10	0.00	0.00	RTF Workbook
Mobile Home	Cooling	Insulation - Ducting	household	New	72.11	18	\$528.00	48%	80%	\$0.09	20.11	20.78	AEG-BEST
Mobile Home	Heating	Insulation - Ducting	household	New	343.08	18	\$528.00	48%	80%	\$0.09	24.77	25.27	AEG-BEST
Mobile Home	Cooling	Ducting - Repair and Sealing	household	New	71.46	20	\$769.57	29%	75%	\$0.04	29.02	30.04	7th Power Plan
Mobile Home	Heating	Ducting - Repair and Sealing	household	New	1,387.76	20	\$769.57	29%	75%	\$0.04	145.62	149.10	7th Power Plan
Mobile Home	Cooling	Building Shell - Infiltration Control	sqft home	New	0.00	25	\$3.18	16%	75%	\$1.02	8.42	8.73	7th Power Plan
Mobile Home	Heating	Building Shell - Infiltration Control	sqft home	New	0.18	25	\$3.18	16%	75%	\$1.02	53.66	54.68	7th Power Plan
Mobile Home	Cooling	Windows - High Efficiency/ENERGY STAR	sqft window	New	0.65	25	\$21.16	55%	75%	\$0.26	30.59	31.66	7th Power Plan
Mobile Home	Heating	Windows - High Efficiency/ENERGY STAR	sqft window	New	4.27	25	\$21.16	55%	75%	\$0.26	35.41	35.70	7th Power Plan
Mobile Home	Cooling	Windows - Install Reflective Film	sqft window	New	0.05	25	\$1.40	16%	75%	\$0.05	6.61	6.86	7th Power Plan
Mobile Home	Heating	Windows - Install Reflective Film	sqft window	New	1.57	25	\$1.40	16%	75%	\$0.05	39.41	39.80	7th Power Plan
Mobile Home	Cooling	Doors - Storm and Thermal	household	New	3.05	20	\$682.67	1%	80%	\$0.64	4.72	4.90	AEG-BEST
Mobile Home	Heating	Doors - Storm and Thermal	household	New	65.72	20	\$682.67	1%	80%	\$0.64	17.75	18.09	AEG-BEST
Mobile Home	Cooling	Ductless Mini Split Heat Pump (Zonal)	household	New	260.26	15	\$3,448.86	0%	38%	\$0.15	24.40	25.05	7th Power Plan
Mobile Home	Heating	Ductless Mini Split Heat Pump (Zonal)	household	New	1,476.33	15	\$3,448.86	0%	38%	\$0.15	79.27	78.16	7th Power Plan
Mobile Home	Cooling	Ductless Mini Split Heat Pump (Ducted Forced Air)	household	New	156.68	15	\$3,517.21	0%	38%	\$0.05	58.74	60.60	7th Power Plan
Mobile Home	Heating	Ductless Mini Split Heat Pump (Ducted Forced Air)	household	New	5,482.79	15	\$3,517.21	0%	38%	\$0.05	386.05	384.18	7th Power Plan
Mobile Home	Cooling	Space Heating - Heat Recovery Ventilator	household	New	8.96	20	\$1,303.92	0%	0%	\$0.19	0.00	0.00	7th Power Plan
Mobile Home	Heating	Space Heating - Heat Recovery Ventilator	household	New	453.94	20	\$1,303.92	0%	0%	\$0.19	0.00	0.00	7th Power Plan
Mobile Home	Cooling	Furnace - Conversion to Air-Source Heat Pump	household	New	0.00	15	\$2,955.28	0%	0%	\$0.12	0.00	0.00	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Mobile Home	Heating	Furnace - Conversion to Air-Source Heat Pump	household	New	2,000.90	15	\$2,955.28	0%	0%	\$0.12	0.00	0.00	7th Power Plan
Mobile Home	Cooling	Room AC - Removal of Second Unit	household	New	1,236.11	3	\$18.00	0%	50%	\$0.00	27.56	28.80	CA DEER
Mobile Home	Cooling	Central AC - Maintenance and Tune-Up	household	New	97.75	6	\$275.74	7%	75%	\$0.43	17.42	18.16	Illinois TRM
Mobile Home	Cooling	Central Heat Pump - Controls and Commissioning	household	New	-5.48	15	\$581.99	25%	75%	\$0.11	-0.26	-0.27	7th Power Plan
Mobile Home	Heating	Central Heat Pump - Controls and Commissioning	household	New	421.36	15	\$581.99	25%	75%	\$0.11	20.62	20.38	7th Power Plan
Mobile Home	Cooling	Ceiling Fan - ENERGY STAR	ceiling fans	New	9.47	10	\$47.23	40%	75%	\$0.51	11.17	11.49	ENERGY STAR
Mobile Home	Cooling	Whole-House Fan - Installation	household	New	53.84	20	\$714.44	15%	40%	\$0.90	11.88	12.23	California Public Utilities Commission
Mobile Home	Cooling	Thermostat - WiFi/Interactive	household	New	41.95	10	\$256.67	5%	75%	\$0.08	61.34	63.51	7th Power Plan
Mobile Home	Heating	Thermostat - WiFi/Interactive	household	New	304.44	10	\$256.67	5%	75%	\$0.08	77.93	78.08	7th Power Plan
Mobile Home	Water Heating	Water Heater - Drainwater Heat Recovery	household	New	167.44	40	\$837.67	1%	10%	\$0.25	10.71	12.07	7th Power Plan
Mobile Home	Water Heating	Water Heater - Faucet Aerators	aerators	New	93.29	15	\$5.13	29%	50%	\$0.00	23.37	27.52	7th Power Plan
Mobile Home	Water Heating	Water Heater - Low-Flow Showerheads	showerheads	New	204.95	10	\$26.56	43%	75%	\$0.01	23.30	29.41	7th Power Plan
Mobile Home	Water Heating	Water Heater - Pipe Insulation	feet pipe	New	18.58	15	\$3.26	12%	75%	\$0.01	20.52	25.38	Mid-Atlantic TRM
Mobile Home	Water Heating	Water Heater - Desuperheater	household	New	961.04	20	\$1,136.89	0%	0%	\$0.07	0.00	0.00	RTF Workbook
Mobile Home	Water Heating	Water Heater - Temperature Setback	household	New	57.00	2	\$5.00	51%	75%	\$0.03	0.41	0.54	Illinois TRM
Mobile Home	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	showerheads	New	26.84	10	\$19.30	16%	45%	\$0.07	2.80	3.53	RTF Workbook
Mobile Home	Water Heating	Water Heater - Solar System	household	New	765.15	20	\$8,847.45	1%	30%	\$0.72	90.18	102.68	7th Power Plan
Mobile Home	Interior Lighting	Interior Lighting - Occupancy Sensors	occ sens	New	63.63	8	\$99.16	0%	10%	\$0.14	6.68	10.45	Pacific Gas and Electric Research

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Mobile Home	Exterior Lighting	Exterior Lighting - Photosensor Control	ext fixt	New	15.49	15	\$10.19	11%	50%	\$0.04	15.31	26.67	Michigan Energy Measures Database
Mobile Home	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	ext fixt pv	New	11.31	3	\$28.00	1%	30%	\$0.50	0.73	2.13	AEG Research
Mobile Home	Exterior Lighting	Exterior Lighting - Timeclock Installation	ext fixt	New	11.41	10	\$19.15	3%	50%	\$0.13	10.59	20.50	Ontario Power TRM
Mobile Home	Appliances	Refrigerator - Decommissioning and Recycling	household	New	282.15	6	\$143.58	0%	65%	\$0.12	76.14	81.81	PacifiCorp '13-'14 Evaluation
Mobile Home	Appliances	Freezer - Decommissioning and Recycling	household	New	274.70	5	\$143.58	0%	10%	\$0.15	21.25	22.84	PacifiCorp '13-'14 Evaluation
Mobile Home	Electronics	Advanced Power Strips - Tier 1	smart strip	New	35.86	5	\$15.83	8%	25%	\$0.08	17.47	17.23	7th Power Plan
Mobile Home	Electronics	Advanced Power Strips - Tier 2	smart strip	New	223.23	5	\$50.49	8%	25%	\$0.04	108.68	107.51	7th Power Plan
Mobile Home	Miscellaneous	Pool Pump - Timer	household	New	453.63	10	\$85.22	0%	75%	\$0.02	21.44	22.28	Ontario Power TRM
Mobile Home	Miscellaneous	Pool Heater - Solar Water Heating System	household	New	1,756.91	20	\$3,767.92	0%	30%	\$0.14	26.18	27.06	AEG Research
Mobile Home	Cooling	ENERGY STAR Home Design	household	New	37.41	20	\$4,253.40	15%	75%	\$0.25	80.46	81.58	RTF Workbook
Mobile Home	Heating	ENERGY STAR Home Design	household	New	547.74	20	\$4,253.40	15%	75%	\$0.25	200.50	198.80	RTF Workbook
Mobile Home	Water Heating	ENERGY STAR Home Design	household	New	323.04	20	\$4,253.40	15%	75%	\$0.25	122.16	137.87	RTF Workbook
Mobile Home	Interior Lighting	ENERGY STAR Home Design	household	New	148.10	20	\$4,253.40	15%	75%	\$0.25	271.45	303.75	RTF Workbook
Mobile Home	Cooling	Behavioral Programs	household	New	3.73	1	\$5.00	39%	77%	\$0.19	0.85	0.88	AEG Research
Mobile Home	Heating	Behavioral Programs	household	New	4.56	1	\$5.00	39%	77%	\$0.19	1.00	1.16	AEG Research
Mobile Home	Water Heating	Behavioral Programs	household	New	1.45	1	\$5.00	39%	77%	\$0.19	0.26	0.40	AEG Research
Mobile Home	Interior Lighting	Behavioral Programs	household	New	1.17	1	\$5.00	39%	77%	\$0.19	0.19	0.46	AEG Research
Mobile Home	Exterior Lighting	Behavioral Programs	household	New	0.39	1	\$5.00	39%	77%	\$0.19	0.06	0.18	AEG Research
Mobile Home	Appliances	Behavioral Programs	household	New	8.09	1	\$5.00	39%	77%	\$0.19	1.76	1.90	AEG Research
Mobile Home	Electronics	Behavioral Programs	household	New	5.14	1	\$5.00	39%	77%	\$0.19	1.18	1.19	AEG Research
Mobile Home	Miscellaneous	Behavioral Programs	household	New	2.21	1	\$5.00	39%	77%	\$0.19	0.54	0.50	AEG Research
Mobile Home	Interior Lighting	Interior Lighting - General Service CFLs	GSL lamp	New	7.77	9	-\$0.13	0%	46%	\$0.00	17.60	50.46	RTF Workbook

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Mobile Home	Interior Lighting	Interior Lighting - Exempted CFLs	Exempt lamp	New	20.63	5	-\$2.74	0%	46%	-\$0.01	16.64	21.23	RTF Workbook

Washington Residential Measures Assumptions

Table H-4 Comparison of 7th Plan and RTF Residential Measures in Washington

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Single Family	Cooling	Central AC	12 kBtu/hr	Existing	38.17	15	\$129.29	40%	at stock turnover	\$0.37	1,022.77	1,022.77	AEG-BEST
Single Family	Cooling	Room AC	10.5 kBtu/hr	Existing	27.02	12	\$212.54	23%	at stock turnover	\$0.97	323.36	323.36	AEG-BEST
Single Family	Cooling	Evaporative AC	1 sqft	Existing	0.10	15	\$0.11	1%	at stock turnover	\$0.12	78.97	78.97	New Buildings Institute Study, 2006
Single Family	Cooling	Air-Source Heat Pump	36 kBtu/hr	Existing	102.14	15	\$218.37	28%	at stock turnover	\$0.05	1,793.68	1,793.68	AEG-BEST
Single Family	Heating	Air-Source Heat Pump	36 kBtu/hr	Existing	366.30	15	\$218.37	28%	at stock turnover	\$0.05	6,433.85	6,433.85	AEG-BEST
Single Family	Cooling	Geothermal Heat Pump	36 kBtu/hr	Existing	582.26	20	\$2,531.24	0%	at stock turnover	\$0.15	0.41	0.41	AEG-BEST
Single Family	Heating	Geothermal Heat Pump	36 kBtu/hr	Existing	1,026.28	20	\$2,531.24	0%	at stock turnover	\$0.15	0.73	0.73	AEG-BEST
Single Family	Heating	Electric Furnace	36 kBtu/hr	Existing	0.00	18	\$0.00	15%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Single Family	Heating	Electric Room Heat	3.5 kBtu/hr	Existing	0.00	18	\$0.00	13%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Single Family	Water Heating	Water Heater (<= 55 Gal)	50 gallons	Existing	1,170.66	13	\$743.91	31%	50%	\$0.07	13,925.44	13,925.44	7th Power Plan
Single Family	Water Heating	Water Heater (<= 55 Gal)	50 gallons	Existing	1,286.54	13	\$1,215.07	19%	30%	\$0.11	10,010.43	10,010.43	7th Power Plan
Single Family	Water Heating	Water Heater (<= 55 Gal)	50 gallons	Existing	1,860.43	13	\$1,573.80	12%	20%	\$0.10	9,659.99	9,659.99	Annual Energy Outlook, 2015
Single Family	Water Heating	Water Heater (> 55 Gal)	50 gallons	Existing	1,024.56	13	\$0.00	3%	50%	\$0.00	0.00	0.00	7th Power Plan
Single Family	Water Heating	Water Heater (> 55 Gal)	50 gallons	Existing	210.05	13	\$471.15	2%	30%	\$0.34	141.70	141.70	7th Power Plan
Single Family	Water Heating	Water Heater (> 55 Gal)	50 gallons	Existing	662.87	13	\$829.89	1%	20%	\$0.16	350.12	350.12	Annual Energy Outlook, 2015
Single Family	Interior Lighting	General Service Screw-In	1 lamps	Existing	9.20	12	\$6.13	100%	at stock turnover	\$0.06	8,616.61	12,807.53	EIA 2011-2012 Ref. Case
Single Family	Interior Lighting	Linear Lighting	1 lamps	Existing	3.44	17	\$24.51	100%	at stock turnover	\$0.73	486.34	486.34	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Single Family	Interior Lighting	Exempted Screw-In	1 lamps	Existing	20.36	10	\$12.32	100%	at stock turnover	-\$0.01	8,951.74	8,422.25	EIA 2011-2012 Ref. Case
Single Family	Exterior Lighting	Screw-in	1 lamps	Existing	20.38	10	\$6.13	100%	at stock turnover	\$0.03	3,859.41	4,850.86	EIA 2011-2012 Ref. Case
Single Family	Appliances	Refrigerator	1 units	Existing	106.50	15	\$240.28	100%	at stock turnover	\$0.25	3,381.72	3,381.72	7th Power Plan
Single Family	Appliances	Second Refrigerator	1 units	Existing	149.35	15	\$240.28	38%	at stock turnover	\$0.18	1,956.98	1,956.98	7th Power Plan
Single Family	Appliances	Freezer	1 units	Existing	129.77	22	\$83.03	61%	at stock turnover	\$0.06	1,604.84	1,604.84	RTF Workbook
Single Family	Appliances	Clothes Washer	1 units	Existing	9.19	14	\$194.20	97%	at stock turnover	-\$0.29	446.24	446.24	7th Power Plan
Single Family	Appliances	Clothes Dryer	1 units	Existing	154.75	16	\$308.00	92%	at stock turnover	\$0.21	3,424.56	3,424.56	7th Power Plan
Single Family	Appliances	Dishwasher	1 units	Existing	2.12	15	\$6.36	76%	at stock turnover	\$0.17	47.70	47.70	7th Power Plan
Single Family	Appliances	Stove/Oven	1 units	Existing	168.48	20	\$307.09	83%	at stock turnover	\$0.17	5,455.33	5,455.33	7th Power Plan
Single Family	Appliances	Microwave	1 units	Existing	8.11	11	\$4.63	98%	at stock turnover	\$0.07	439.63	439.63	7th Power Plan
Single Family	Electronics	Personal Computers	1 units	Existing	57.28	5	\$14.17	80%	at stock turnover	\$0.06	723.25	723.25	7th Power Plan
Single Family	Electronics	Monitor	1 units	Existing	56.08	8	\$8.21	96%	at stock turnover	\$0.02	408.61	408.61	7th Power Plan
Single Family	Electronics	Laptops	1 units	Existing	13.86	4	\$57.18	201%	at stock turnover	\$1.10	539.37	539.37	7th Power Plan
Single Family	Electronics	Printer/Fax/Copier	1 units	Existing	19.33	5	\$0.01	117%	at stock turnover	\$0.00	71.93	71.93	ENERGY STAR
Single Family	Electronics	TVs	1 units	Existing	21.02	6	\$0.01	272%	at stock turnover	\$0.00	470.04	470.04	ENERGY STAR
Single Family	Electronics	Set-top Boxes/DVRs	1 units	Existing	64.70	5	\$0.00	306%	at stock turnover	\$0.00	0.00	0.00	Voluntary Agreement
Single Family	Electronics	Devices and Gadgets	1 units	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Single Family	Miscellaneous	Electric Vehicles	1 units	Existing	116.75	10	\$770.00	0%	at stock turnover	\$0.90	79.00	79.00	7th Power Plan
Single Family	Miscellaneous	Pool Heater	1 units	Existing	3,864.38	15	\$3,546.07	2%	at stock turnover	\$0.10	2,772.36	2,772.36	AEG Research

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Single Family	Miscellaneous	Pool Pump	1 units	Existing	702.98	15	\$872.94	7%	at stock turnover	\$0.14	2,169.64	2,169.64	Southern California Edison
Single Family	Miscellaneous	Hot Tub/Spa	1 units	Existing	169.51	15	\$350.00	8%	at stock turnover	\$0.22	628.40	628.40	AEG Research
Single Family	Miscellaneous	Furnace Fan	1 units	Existing	70.90	20	\$97.00	54%	at stock turnover	\$0.13	-76.58	53.22	DOE Rule: EERE-2010-BT-STD-0011
Single Family	Miscellaneous	Well Pump	1 units	Existing	0.00	5	\$0.00	29%	at stock turnover	\$0.00	0.00	0.00	N/A
Single Family	Miscellaneous	Miscellaneous	1 units	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Single Family	Cooling	Central AC	12 kBtu/hr	New	41.91	15	\$129.29	56%	at stock turnover	\$0.34	277.94	277.94	AEG-BEST
Single Family	Cooling	Room AC	10.5 kBtu/hr	New	12.68	12	\$212.54	5%	at stock turnover	\$2.07	6.11	6.11	AEG-BEST
Single Family	Cooling	Evaporative AC	1 sqft	New	0.00	15	\$0.11	0%	at stock turnover	\$0.00	0.00	0.00	New Buildings Institute Study, 2006
Single Family	Cooling	Air-Source Heat Pump	36 kBtu/hr	New	155.93	15	\$218.37	32%	at stock turnover	\$0.04	347.13	347.13	AEG-BEST
Single Family	Heating	Air-Source Heat Pump	36 kBtu/hr	New	452.12	15	\$218.37	32%	at stock turnover	\$0.04	1,006.01	1,006.01	AEG-BEST
Single Family	Cooling	Geothermal Heat Pump	36 kBtu/hr	New	582.26	20	\$2,531.24	0%	at stock turnover	\$0.15	0.03	0.03	AEG-BEST
Single Family	Heating	Geothermal Heat Pump	36 kBtu/hr	New	1,000.05	20	\$2,531.24	0%	at stock turnover	\$0.15	0.05	0.05	AEG-BEST
Single Family	Heating	Electric Furnace	36 kBtu/hr	New	0.00	18	\$0.00	19%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Single Family	Heating	Electric Room Heat	3.5 kBtu/hr	New	0.00	18	\$0.00	3%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Single Family	Water Heating	Water Heater (<= 55 Gal)	50 gallons	New	1,170.95	13	\$743.91	19%	50%	\$0.07	718.37	718.37	7th Power Plan
Single Family	Water Heating	Water Heater (<= 55 Gal)	50 gallons	New	1,279.72	13	\$1,215.07	11%	30%	\$0.11	516.98	516.98	7th Power Plan
Single Family	Water Heating	Water Heater (<= 55 Gal)	50 gallons	New	1,853.78	13	\$1,573.80	8%	20%	\$0.10	499.74	499.74	Annual Energy Outlook, 2015
Single Family	Water Heating	Water Heater (> 55 Gal)	50 gallons	New	1,024.56	13	\$0.00	2%	50%	\$0.00	0.00	0.00	7th Power Plan
Single Family	Water Heating	Water Heater (> 55 Gal)	50 gallons	New	209.77	13	\$471.15	1%	30%	\$0.34	10.64	10.64	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Single Family	Water Heating	Water Heater (> 55 Gal)	50 gallons	New	662.59	13	\$829.89	1%	20%	\$0.16	26.30	26.30	Annual Energy Outlook, 2015
Single Family	Interior Lighting	General Service Screw-In	1 lamps	New	9.20	12	\$6.13	100%	at stock turnover	\$0.06	847.95	966.03	EIA 2011-2012 Ref. Case
Single Family	Interior Lighting	Linear Lighting	1 lamps	New	3.81	17	\$25.80	100%	at stock turnover	\$0.69	54.70	54.70	7th Power Plan
Single Family	Interior Lighting	Exempted Screw-In	1 lamps	New	20.36	10	\$12.32	100%	at stock turnover	-\$0.01	773.91	747.34	EIA 2011-2012 Ref. Case
Single Family	Exterior Lighting	Screw-in	1 lamps	New	20.38	10	\$6.13	100%	at stock turnover	\$0.03	319.27	326.29	EIA 2011-2012 Ref. Case
Single Family	Appliances	Refrigerator	1 units	New	106.50	15	\$240.28	100%	at stock turnover	\$0.25	346.05	346.05	7th Power Plan
Single Family	Appliances	Second Refrigerator	1 units	New	149.35	15	\$240.28	28%	at stock turnover	\$0.18	152.11	152.11	7th Power Plan
Single Family	Appliances	Freezer	1 units	New	129.77	22	\$83.03	47%	at stock turnover	\$0.06	111.79	111.79	RTF Workbook
Single Family	Appliances	Clothes Washer	1 units	New	9.19	14	\$194.20	99%	at stock turnover	-\$0.29	40.90	40.90	7th Power Plan
Single Family	Appliances	Clothes Dryer	1 units	New	154.75	16	\$308.00	90%	at stock turnover	\$0.21	325.01	325.01	7th Power Plan
Single Family	Appliances	Dishwasher	1 units	New	2.12	15	\$6.36	91%	at stock turnover	\$0.17	4.75	4.75	7th Power Plan
Single Family	Appliances	Stove/Oven	1 units	New	168.48	20	\$307.09	69%	at stock turnover	\$0.17	467.54	467.54	7th Power Plan
Single Family	Appliances	Microwave	1 units	New	8.11	11	\$4.63	98%	at stock turnover	\$0.07	37.67	37.67	7th Power Plan
Single Family	Electronics	Personal Computers	1 units	New	57.28	5	\$14.17	65%	at stock turnover	\$0.06	41.86	41.86	7th Power Plan
Single Family	Electronics	Monitor	1 units	New	56.08	8	\$8.21	78%	at stock turnover	\$0.02	26.80	26.80	7th Power Plan
Single Family	Electronics	Laptops	1 units	New	13.86	4	\$57.18	333%	at stock turnover	\$1.10	53.50	53.50	7th Power Plan
Single Family	Electronics	Printer/Fax/Copier	1 units	New	19.33	5	\$0.01	173%	at stock turnover	\$0.00	8.17	8.17	ENERGY STAR
Single Family	Electronics	TVs	1 units	New	21.02	6	\$0.01	339%	at stock turnover	\$0.00	48.56	48.56	ENERGY STAR
Single Family	Electronics	Set-top Boxes/DVRs	1 units	New	64.70	5	\$0.00	383%	at stock turnover	\$0.00	0.00	0.00	Voluntary Agreement

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Single Family	Electronics	Devices and Gadgets	1 units	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Single Family	Miscellaneous	Electric Vehicles	1 units	New	116.75	10	\$770.00	0%	at stock turnover	\$0.90	7.86	7.86	7th Power Plan
Single Family	Miscellaneous	Pool Heater	1 units	New	3,864.38	15	\$3,546.07	2%	at stock turnover	\$0.10	272.63	272.63	AEG Research
Single Family	Miscellaneous	Pool Pump	1 units	New	702.98	15	\$872.94	7%	at stock turnover	\$0.14	213.36	213.36	Southern California Edison
Single Family	Miscellaneous	Hot Tub/Spa	1 units	New	169.51	15	\$350.00	8%	at stock turnover	\$0.22	62.81	62.81	AEG Research
Single Family	Miscellaneous	Furnace Fan	1 units	New	70.90	20	\$97.00	54%	at stock turnover	\$0.13	-6.86	4.76	DOE Rule: EERE-2010-BT-STD-0011
Single Family	Miscellaneous	Well Pump	1 units	New	0.00	5	\$0.00	46%	at stock turnover	\$0.00	0.00	0.00	N/A
Single Family	Miscellaneous	Miscellaneous	1 units	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Multifamily	Cooling	Central AC	12 kBtu/hr	Existing	32.81	15	\$129.29	40%	at stock turnover	\$0.43	63.65	63.65	AEG-BEST
Multifamily	Cooling	Room AC	10.5 kBtu/hr	Existing	25.63	12	\$212.54	23%	at stock turnover	\$1.03	149.90	149.90	AEG-BEST
Multifamily	Cooling	Evaporative AC	1 sqft	Existing	0.09	15	\$0.11	1%	at stock turnover	\$0.14	2.58	2.58	New Buildings Institute Study, 2006
Multifamily	Cooling	Air-Source Heat Pump	36 kBtu/hr	Existing	61.25	15	\$218.37	28%	at stock turnover	\$0.11	49.42	49.42	AEG-BEST
Multifamily	Heating	Air-Source Heat Pump	36 kBtu/hr	Existing	162.74	15	\$218.37	28%	at stock turnover	\$0.11	131.32	131.32	AEG-BEST
Multifamily	Cooling	Geothermal Heat Pump	36 kBtu/hr	Existing	0.00	20	\$2,531.24	0%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Multifamily	Heating	Geothermal Heat Pump	36 kBtu/hr	Existing	0.00	20	\$2,531.24	0%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Multifamily	Heating	Electric Furnace	36 kBtu/hr	Existing	0.00	18	\$0.00	15%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Multifamily	Heating	Electric Room Heat	3.5 kBtu/hr	Existing	0.00	18	\$0.00	13%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Multifamily	Water Heating	Water Heater (<= 55 Gal)	50 gallons	Existing	961.27	13	\$743.91	31%	50%	\$0.09	3,642.63	3,642.63	7th Power Plan
Multifamily	Water Heating	Water Heater (<= 55 Gal)	50 gallons	Existing	1,050.65	13	\$1,215.07	19%	30%	\$0.14	2,621.39	2,621.39	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Multifamily	Water Heating	Water Heater (<= 55 Gal)	50 gallons	Existing	1,521.85	13	\$1,573.80	12%	20%	\$0.12	2,533.92	2,533.92	Annual Energy Outlook, 2015
Multifamily	Water Heating	Water Heater (> 55 Gal)	50 gallons	Existing	841.01	13	\$0.00	3%	50%	\$0.00	0.00	0.00	7th Power Plan
Multifamily	Water Heating	Water Heater (> 55 Gal)	50 gallons	Existing	172.19	13	\$471.15	2%	30%	\$0.41	35.98	35.98	7th Power Plan
Multifamily	Water Heating	Water Heater (> 55 Gal)	50 gallons	Existing	543.89	13	\$829.89	1%	20%	\$0.19	88.91	88.91	Annual Energy Outlook, 2015
Multifamily	Interior Lighting	General Service Screw-In	1 lamps	Existing	8.37	12	\$6.13	100%	at stock turnover	\$0.06	1,316.82	1,939.57	EIA 2011-2012 Ref. Case
Multifamily	Interior Lighting	Linear Lighting	1 lamps	Existing	3.44	17	\$24.51	100%	at stock turnover	\$0.73	137.72	137.72	7th Power Plan
Multifamily	Interior Lighting	Exempted Screw-In	1 lamps	Existing	18.34	10	\$12.32	100%	at stock turnover	-\$0.01	208.17	193.78	EIA 2011-2012 Ref. Case
Multifamily	Exterior Lighting	Screw-in	1 lamps	Existing	20.99	10	\$6.13	100%	at stock turnover	\$0.03	398.39	479.74	EIA 2011-2012 Ref. Case
Multifamily	Appliances	Refrigerator	1 units	Existing	106.50	15	\$240.28	100%	at stock turnover	\$0.25	880.46	880.46	7th Power Plan
Multifamily	Appliances	Second Refrigerator	1 units	Existing	149.35	15	\$240.28	38%	at stock turnover	\$0.18	64.50	64.50	7th Power Plan
Multifamily	Appliances	Freezer	1 units	Existing	129.75	22	\$83.03	61%	at stock turnover	\$0.06	137.56	137.56	RTF Workbook
Multifamily	Appliances	Clothes Washer	1 units	Existing	9.05	14	\$194.20	97%	at stock turnover	-\$0.29	59.17	59.17	7th Power Plan
Multifamily	Appliances	Clothes Dryer	1 units	Existing	122.42	16	\$308.00	92%	at stock turnover	\$0.26	430.34	430.34	7th Power Plan
Multifamily	Appliances	Dishwasher	1 units	Existing	2.13	15	\$6.36	76%	at stock turnover	\$0.17	12.79	12.79	7th Power Plan
Multifamily	Appliances	Stove/Oven	1 units	Existing	135.70	20	\$307.09	83%	at stock turnover	\$0.21	1,245.09	1,245.09	7th Power Plan
Multifamily	Appliances	Microwave	1 units	Existing	8.11	11	\$4.63	98%	at stock turnover	\$0.07	114.09	114.09	7th Power Plan
Multifamily	Electronics	Personal Computers	1 units	Existing	57.28	5	\$14.17	80%	at stock turnover	\$0.06	108.50	108.50	7th Power Plan
Multifamily	Electronics	Monitor	1 units	Existing	56.08	8	\$8.21	96%	at stock turnover	\$0.02	60.80	60.80	7th Power Plan
Multifamily	Electronics	Laptops	1 units	Existing	13.86	4	\$57.18	201%	at stock turnover	\$1.10	115.38	115.38	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Multifamily	Electronics	Printer/Fax/Copier	1 units	Existing	19.33	5	\$0.01	117%	at stock turnover	\$0.00	9.63	9.63	ENERGY STAR
Multifamily	Electronics	TVs	1 units	Existing	28.03	6	\$0.01	272%	at stock turnover	\$0.00	107.88	107.88	ENERGY STAR
Multifamily	Electronics	Set-top Boxes/DVRs	1 units	Existing	64.70	5	\$0.00	306%	at stock turnover	\$0.00	0.00	0.00	Voluntary Agreement
Multifamily	Electronics	Devices and Gadgets	1 units	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Multifamily	Miscellaneous	Electric Vehicles	1 units	Existing	0.00	10	\$770.00	0%	at stock turnover	\$0.00	0.00	0.00	7th Power Plan
Multifamily	Miscellaneous	Pool Heater	1 units	Existing	0.00	15	\$3,546.07	2%	at stock turnover	\$0.00	0.00	0.00	AEG Research
Multifamily	Miscellaneous	Pool Pump	1 units	Existing	0.00	15	\$872.94	7%	at stock turnover	\$0.00	0.00	0.00	Southern California Edison
Multifamily	Miscellaneous	Hot Tub/Spa	1 units	Existing	169.51	15	\$350.00	8%	at stock turnover	\$0.22	6.50	6.50	AEG Research
Multifamily	Miscellaneous	Furnace Fan	1 units	Existing	25.12	20	\$97.00	54%	at stock turnover	\$0.37	-2.64	1.84	DOE Rule: EERE-2010-BT-STD-0011
Multifamily	Miscellaneous	Well Pump	1 units	Existing	0.00	5	\$0.00	29%	at stock turnover	\$0.00	0.00	0.00	N/A
Multifamily	Miscellaneous	Miscellaneous	1 units	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Multifamily	Cooling	Central AC	12 kBtu/hr	New	35.95	15	\$129.29	56%	at stock turnover	\$0.39	56.10	56.10	AEG-BEST
Multifamily	Cooling	Room AC	10.5 kBtu/hr	New	13.94	12	\$212.54	5%	at stock turnover	\$1.89	22.19	22.19	AEG-BEST
Multifamily	Cooling	Evaporative AC	1 sqft	New	0.09	15	\$0.11	0%	at stock turnover	\$0.14	0.44	0.44	New Buildings Institute Study, 2006
Multifamily	Cooling	Air-Source Heat Pump	36 kBtu/hr	New	87.32	15	\$218.37	32%	at stock turnover	\$0.00	1.49	1.49	AEG-BEST
Multifamily	Heating	Air-Source Heat Pump	36 kBtu/hr	New	0.00	15	\$218.37	32%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Multifamily	Cooling	Geothermal Heat Pump	36 kBtu/hr	New	0.00	20	\$2,531.24	0%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Multifamily	Heating	Geothermal Heat Pump	36 kBtu/hr	New	0.00	20	\$2,531.24	0%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Multifamily	Heating	Electric Furnace	36 kBtu/hr	New	0.00	18	\$0.00	19%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Multifamily	Heating	Electric Room Heat	3.5 kBtu/hr	New	0.00	18	\$0.00	3%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Multifamily	Water Heating	Water Heater (<= 55 Gal)	50 gallons	New	961.29	13	\$743.91	19%	50%	\$0.09	323.17	323.17	7th Power Plan
Multifamily	Water Heating	Water Heater (<= 55 Gal)	50 gallons	New	1,050.08	13	\$1,215.07	11%	30%	\$0.14	232.59	232.59	7th Power Plan
Multifamily	Water Heating	Water Heater (<= 55 Gal)	50 gallons	New	1,521.29	13	\$1,573.80	8%	20%	\$0.12	224.87	224.87	Annual Energy Outlook, 2015
Multifamily	Water Heating	Water Heater (> 55 Gal)	50 gallons	New	841.01	13	\$0.00	2%	50%	\$0.00	0.00	0.00	7th Power Plan
Multifamily	Water Heating	Water Heater (> 55 Gal)	50 gallons	New	172.17	13	\$471.15	1%	30%	\$0.41	5.39	5.39	7th Power Plan
Multifamily	Water Heating	Water Heater (> 55 Gal)	50 gallons	New	543.87	13	\$829.89	1%	20%	\$0.19	13.32	13.32	Annual Energy Outlook, 2015
Multifamily	Interior Lighting	General Service Screw-In	1 lamps	New	8.37	12	\$6.13	100%	at stock turnover	\$0.06	246.58	280.04	EIA 2011-2012 Ref. Case
Multifamily	Interior Lighting	Linear Lighting	1 lamps	New	2.78	17	\$25.80	100%	at stock turnover	\$0.95	21.66	21.66	7th Power Plan
Multifamily	Interior Lighting	Exempted Screw-In	1 lamps	New	18.34	10	\$12.32	100%	at stock turnover	-\$0.01	32.54	31.15	EIA 2011-2012 Ref. Case
Multifamily	Exterior Lighting	Screw-in	1 lamps	New	20.99	10	\$6.13	100%	at stock turnover	\$0.03	68.52	70.21	EIA 2011-2012 Ref. Case
Multifamily	Appliances	Refrigerator	1 units	New	106.50	15	\$240.28	100%	at stock turnover	\$0.25	156.19	156.19	7th Power Plan
Multifamily	Appliances	Second Refrigerator	1 units	New	149.35	15	\$240.28	28%	at stock turnover	\$0.18	35.53	35.53	7th Power Plan
Multifamily	Appliances	Freezer	1 units	New	129.75	22	\$83.03	47%	at stock turnover	\$0.06	2.78	2.78	RTF Workbook
Multifamily	Appliances	Clothes Washer	1 units	New	9.05	14	\$194.20	99%	at stock turnover	-\$0.29	9.29	9.29	7th Power Plan
Multifamily	Appliances	Clothes Dryer	1 units	New	122.42	16	\$308.00	90%	at stock turnover	\$0.26	114.59	114.59	7th Power Plan
Multifamily	Appliances	Dishwasher	1 units	New	2.13	15	\$6.36	91%	at stock turnover	\$0.17	2.22	2.22	7th Power Plan
Multifamily	Appliances	Stove/Oven	1 units	New	135.70	20	\$307.09	69%	at stock turnover	\$0.21	201.02	201.02	7th Power Plan
Multifamily	Appliances	Microwave	1 units	New	8.11	11	\$4.63	98%	at stock turnover	\$0.07	16.96	16.96	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Multifamily	Electronics	Personal Computers	1 units	New	57.28	5	\$14.17	65%	at stock turnover	\$0.06	17.08	17.08	7th Power Plan
Multifamily	Electronics	Monitor	1 units	New	56.08	8	\$8.21	78%	at stock turnover	\$0.02	12.08	12.08	7th Power Plan
Multifamily	Electronics	Laptops	1 units	New	13.86	4	\$57.18	333%	at stock turnover	\$1.10	16.91	16.91	7th Power Plan
Multifamily	Electronics	Printer/Fax/Copier	1 units	New	19.33	5	\$0.01	173%	at stock turnover	\$0.00	1.70	1.70	ENERGY STAR
Multifamily	Electronics	TVs	1 units	New	28.03	6	\$0.01	339%	at stock turnover	\$0.00	19.45	19.45	ENERGY STAR
Multifamily	Electronics	Set-top Boxes/DVRs	1 units	New	64.70	5	\$0.00	383%	at stock turnover	\$0.00	0.00	0.00	Voluntary Agreement
Multifamily	Electronics	Devices and Gadgets	1 units	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Multifamily	Miscellaneous	Electric Vehicles	1 units	New	0.00	10	\$770.00	0%	at stock turnover	\$0.00	0.00	0.00	7th Power Plan
Multifamily	Miscellaneous	Pool Heater	1 units	New	0.00	15	\$3,546.07	2%	at stock turnover	\$0.00	0.00	0.00	AEG Research
Multifamily	Miscellaneous	Pool Pump	1 units	New	0.00	15	\$872.94	7%	at stock turnover	\$0.00	0.00	0.00	Southern California Edison
Multifamily	Miscellaneous	Hot Tub/Spa	1 units	New	169.51	15	\$350.00	8%	at stock turnover	\$0.22	1.09	1.09	AEG Research
Multifamily	Miscellaneous	Furnace Fan	1 units	New	25.12	20	\$97.00	54%	at stock turnover	\$0.37	-0.42	0.29	DOE Rule: EERE-2010-BT-STD-0011
Multifamily	Miscellaneous	Well Pump	1 units	New	0.00	5	\$0.00	46%	at stock turnover	\$0.00	0.00	0.00	N/A
Multifamily	Miscellaneous	Miscellaneous	1 units	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Mobile Home	Cooling	Central AC	12 kBtu/hr	Existing	44.33	15	\$129.29	40%	at stock turnover	\$0.32	177.45	177.45	AEG-BEST
Mobile Home	Cooling	Room AC	10.5 kBtu/hr	Existing	25.97	12	\$212.54	23%	at stock turnover	\$1.01	49.00	49.00	AEG-BEST
Mobile Home	Cooling	Evaporative AC	1 sqft	Existing	0.11	15	\$0.11	1%	at stock turnover	\$0.10	35.33	35.33	New Buildings Institute Study, 2006
Mobile Home	Cooling	Air-Source Heat Pump	36 kBtu/hr	Existing	105.64	15	\$218.37	28%	at stock turnover	\$0.05	278.22	278.22	AEG-BEST
Mobile Home	Heating	Air-Source Heat Pump	36 kBtu/hr	Existing	340.65	15	\$218.37	28%	at stock turnover	\$0.05	897.43	897.43	AEG-BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Mobile Home	Cooling	Geothermal Heat Pump	36 kBtu/hr	Existing	0.00	20	\$2,531.24	0%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Mobile Home	Heating	Geothermal Heat Pump	36 kBtu/hr	Existing	0.00	20	\$2,531.24	0%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Mobile Home	Heating	Electric Furnace	36 kBtu/hr	Existing	0.00	18	\$0.00	15%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Mobile Home	Heating	Electric Room Heat	3.5 kBtu/hr	Existing	0.00	18	\$0.00	13%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Mobile Home	Water Heating	Water Heater (<= 55 Gal)	50 gallons	Existing	957.83	13	\$743.91	31%	50%	\$0.09	2,864.70	2,864.70	7th Power Plan
Mobile Home	Water Heating	Water Heater (<= 55 Gal)	50 gallons	Existing	1,046.85	13	\$1,215.07	19%	30%	\$0.14	2,061.58	2,061.58	7th Power Plan
Mobile Home	Water Heating	Water Heater (<= 55 Gal)	50 gallons	Existing	1,516.43	13	\$1,573.80	12%	20%	\$0.12	1,992.82	1,992.82	Annual Energy Outlook, 2015
Mobile Home	Water Heating	Water Heater (> 55 Gal)	50 gallons	Existing	838.09	13	\$0.00	3%	50%	\$0.00	0.00	0.00	7th Power Plan
Mobile Home	Water Heating	Water Heater (> 55 Gal)	50 gallons	Existing	171.59	13	\$471.15	2%	30%	\$0.41	5.30	5.30	7th Power Plan
Mobile Home	Water Heating	Water Heater (> 55 Gal)	50 gallons	Existing	542.00	13	\$829.89	1%	20%	\$0.20	13.09	13.09	Annual Energy Outlook, 2015
Mobile Home	Interior Lighting	General Service Screw-In	1 lamps	Existing	7.51	12	\$6.13	100%	at stock turnover	\$0.07	775.52	1,024.19	EIA 2011-2012 Ref. Case
Mobile Home	Interior Lighting	Linear Lighting	1 lamps	Existing	3.44	17	\$24.51	100%	at stock turnover	\$0.73	135.01	135.01	7th Power Plan
Mobile Home	Interior Lighting	Exempted Screw-In	1 lamps	Existing	16.00	10	\$12.32	100%	at stock turnover	-\$0.01	369.97	341.63	EIA 2011-2012 Ref. Case
Mobile Home	Exterior Lighting	Screw-in	1 lamps	Existing	21.78	10	\$6.13	100%	at stock turnover	\$0.03	263.40	327.39	EIA 2011-2012 Ref. Case
Mobile Home	Appliances	Refrigerator	1 units	Existing	106.50	15	\$240.28	100%	at stock turnover	\$0.25	567.05	567.05	7th Power Plan
Mobile Home	Appliances	Second Refrigerator	1 units	Existing	149.35	15	\$240.28	38%	at stock turnover	\$0.18	229.33	229.33	7th Power Plan
Mobile Home	Appliances	Freezer	1 units	Existing	129.76	22	\$83.03	61%	at stock turnover	\$0.06	244.74	244.74	RTF Workbook
Mobile Home	Appliances	Clothes Washer	1 units	Existing	9.17	14	\$194.20	97%	at stock turnover	-\$0.29	72.65	72.65	7th Power Plan
Mobile Home	Appliances	Clothes Dryer	1 units	Existing	192.97	16	\$308.00	92%	at stock turnover	\$0.17	719.98	719.98	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Mobile Home	Appliances	Dishwasher	1 units	Existing	2.12	15	\$6.36	76%	at stock turnover	\$0.17	8.11	8.11	7th Power Plan
Mobile Home	Appliances	Stove/Oven	1 units	Existing	204.28	20	\$307.09	83%	at stock turnover	\$0.14	1,209.77	1,209.77	7th Power Plan
Mobile Home	Appliances	Microwave	1 units	Existing	8.11	11	\$4.63	98%	at stock turnover	\$0.07	73.52	73.52	7th Power Plan
Mobile Home	Electronics	Personal Computers	1 units	Existing	57.28	5	\$14.17	80%	at stock turnover	\$0.06	78.37	78.37	7th Power Plan
Mobile Home	Electronics	Monitor	1 units	Existing	56.08	8	\$8.21	96%	at stock turnover	\$0.02	43.91	43.91	7th Power Plan
Mobile Home	Electronics	Laptops	1 units	Existing	13.86	4	\$57.18	201%	at stock turnover	\$1.10	40.64	40.64	7th Power Plan
Mobile Home	Electronics	Printer/Fax/Copier	1 units	Existing	19.33	5	\$0.01	117%	at stock turnover	\$0.00	7.67	7.67	ENERGY STAR
Mobile Home	Electronics	TVs	1 units	Existing	29.93	6	\$0.01	272%	at stock turnover	\$0.00	91.22	91.22	ENERGY STAR
Mobile Home	Electronics	Set-top Boxes/DVRs	1 units	Existing	64.70	5	\$0.00	306%	at stock turnover	\$0.00	0.00	0.00	Voluntary Agreement
Mobile Home	Electronics	Devices and Gadgets	1 units	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Mobile Home	Miscellaneous	Electric Vehicles	1 units	Existing	116.75	10	\$770.00	0%	at stock turnover	\$0.90	10.36	10.36	7th Power Plan
Mobile Home	Miscellaneous	Pool Heater	1 units	Existing	3,864.38	15	\$3,546.07	2%	at stock turnover	\$0.10	161.75	161.75	AEG Research
Mobile Home	Miscellaneous	Pool Pump	1 units	Existing	702.98	15	\$872.94	7%	at stock turnover	\$0.14	252.83	252.83	Southern California Edison
Mobile Home	Miscellaneous	Hot Tub/Spa	1 units	Existing	169.51	15	\$350.00	8%	at stock turnover	\$0.22	44.06	44.06	AEG Research
Mobile Home	Miscellaneous	Furnace Fan	1 units	Existing	53.36	20	\$97.00	54%	at stock turnover	\$0.17	-10.31	7.17	DOE Rule: EERE-2010-BT-STD-0011
Mobile Home	Miscellaneous	Well Pump	1 units	Existing	0.00	5	\$0.00	29%	at stock turnover	\$0.00	0.00	0.00	N/A
Mobile Home	Miscellaneous	Miscellaneous	1 units	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Mobile Home	Cooling	Central AC	12 kBtu/hr	New	48.63	15	\$129.29	56%	at stock turnover	\$0.29	18.62	18.62	AEG-BEST
Mobile Home	Cooling	Room AC	10.5 kBtu/hr	New	12.46	12	\$212.54	5%	at stock turnover	\$2.11	6.76	6.76	AEG-BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Mobile Home	Cooling	Evaporative AC	1 sqft	New	0.11	15	\$0.11	0%	at stock turnover	\$0.10	5.72	5.72	New Buildings Institute Study, 2006
Mobile Home	Cooling	Air-Source Heat Pump	36 kBtu/hr	New	165.09	15	\$218.37	32%	at stock turnover	\$0.04	84.94	84.94	AEG-BEST
Mobile Home	Heating	Air-Source Heat Pump	36 kBtu/hr	New	422.76	15	\$218.37	32%	at stock turnover	\$0.04	217.51	217.51	AEG-BEST
Mobile Home	Cooling	Geothermal Heat Pump	36 kBtu/hr	New	0.00	20	\$2,531.24	0%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Mobile Home	Heating	Geothermal Heat Pump	36 kBtu/hr	New	0.00	20	\$2,531.24	0%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Mobile Home	Heating	Electric Furnace	36 kBtu/hr	New	0.00	18	\$0.00	19%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Mobile Home	Heating	Electric Room Heat	3.5 kBtu/hr	New	0.00	18	\$0.00	3%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Mobile Home	Water Heating	Water Heater (<= 55 Gal)	50 gallons	New	957.84	13	\$743.91	19%	50%	\$0.09	456.18	456.18	7th Power Plan
Mobile Home	Water Heating	Water Heater (<= 55 Gal)	50 gallons	New	1,046.98	13	\$1,215.07	11%	30%	\$0.14	328.28	328.28	7th Power Plan
Mobile Home	Water Heating	Water Heater (<= 55 Gal)	50 gallons	New	1,516.57	13	\$1,573.80	8%	20%	\$0.12	317.32	317.32	Annual Energy Outlook, 2015
Mobile Home	Water Heating	Water Heater (> 55 Gal)	50 gallons	New	838.09	13	\$0.00	2%	50%	\$0.00	0.00	0.00	7th Power Plan
Mobile Home	Water Heating	Water Heater (> 55 Gal)	50 gallons	New	171.60	13	\$471.15	1%	30%	\$0.41	0.79	0.79	7th Power Plan
Mobile Home	Water Heating	Water Heater (> 55 Gal)	50 gallons	New	542.01	13	\$829.89	1%	20%	\$0.20	1.96	1.96	Annual Energy Outlook, 2015
Mobile Home	Interior Lighting	General Service Screw-In	1 lamps	New	7.51	12	\$6.13	100%	at stock turnover	\$0.07	131.82	142.48	EIA 2011-2012 Ref. Case
Mobile Home	Interior Lighting	Linear Lighting	1 lamps	New	2.78	17	\$25.80	100%	at stock turnover	\$0.95	18.78	18.78	7th Power Plan
Mobile Home	Interior Lighting	Exempted Screw-In	1 lamps	New	16.00	10	\$12.32	100%	at stock turnover	-\$0.01	52.28	49.86	EIA 2011-2012 Ref. Case
Mobile Home	Exterior Lighting	Screw-in	1 lamps	New	21.78	10	\$6.13	100%	at stock turnover	\$0.03	36.35	36.58	EIA 2011-2012 Ref. Case
Mobile Home	Appliances	Refrigerator	1 units	New	106.50	15	\$240.28	100%	at stock turnover	\$0.25	100.59	100.59	7th Power Plan
Mobile Home	Appliances	Second Refrigerator	1 units	New	149.35	15	\$240.28	28%	at stock turnover	\$0.18	65.10	65.10	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Mobile Home	Appliances	Freezer	1 units	New	129.77	22	\$83.03	47%	at stock turnover	\$0.06	60.14	60.14	RTF Workbook
Mobile Home	Appliances	Clothes Washer	1 units	New	9.17	14	\$194.20	99%	at stock turnover	-\$0.29	11.35	11.35	7th Power Plan
Mobile Home	Appliances	Clothes Dryer	1 units	New	192.97	16	\$308.00	90%	at stock turnover	\$0.17	127.51	127.51	7th Power Plan
Mobile Home	Appliances	Dishwasher	1 units	New	2.13	15	\$6.36	91%	at stock turnover	\$0.17	1.41	1.41	7th Power Plan
Mobile Home	Appliances	Stove/Oven	1 units	New	204.28	20	\$307.09	69%	at stock turnover	\$0.14	211.31	211.31	7th Power Plan
Mobile Home	Appliances	Microwave	1 units	New	8.11	11	\$4.63	98%	at stock turnover	\$0.07	10.94	10.94	7th Power Plan
Mobile Home	Electronics	Personal Computers	1 units	New	57.28	5	\$14.17	65%	at stock turnover	\$0.06	10.31	10.31	7th Power Plan
Mobile Home	Electronics	Monitor	1 units	New	56.08	8	\$8.21	78%	at stock turnover	\$0.02	6.61	6.61	7th Power Plan
Mobile Home	Electronics	Laptops	1 units	New	13.86	4	\$57.18	333%	at stock turnover	\$1.10	5.94	5.94	7th Power Plan
Mobile Home	Electronics	Printer/Fax/Copier	1 units	New	19.33	5	\$0.01	173%	at stock turnover	\$0.00	1.13	1.13	ENERGY STAR
Mobile Home	Electronics	TVs	1 units	New	29.93	6	\$0.01	339%	at stock turnover	\$0.00	16.60	16.60	ENERGY STAR
Mobile Home	Electronics	Set-top Boxes/DVRs	1 units	New	64.70	5	\$0.00	383%	at stock turnover	\$0.00	0.00	0.00	Voluntary Agreement
Mobile Home	Electronics	Devices and Gadgets	1 units	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Mobile Home	Miscellaneous	Electric Vehicles	1 units	New	116.75	10	\$770.00	0%	at stock turnover	\$0.90	1.57	1.57	7th Power Plan
Mobile Home	Miscellaneous	Pool Heater	1 units	New	3,864.38	15	\$3,546.07	2%	at stock turnover	\$0.10	27.20	27.20	AEG Research
Mobile Home	Miscellaneous	Pool Pump	1 units	New	702.98	15	\$872.94	7%	at stock turnover	\$0.14	42.52	42.52	Southern California Edison
Mobile Home	Miscellaneous	Hot Tub/Spa	1 units	New	169.51	15	\$350.00	8%	at stock turnover	\$0.22	11.11	11.11	AEG Research
Mobile Home	Miscellaneous	Furnace Fan	1 units	New	53.36	20	\$97.00	54%	at stock turnover	\$0.17	-1.62	1.13	DOE Rule: EERE-2010-BT-STD-0011
Mobile Home	Miscellaneous	Well Pump	1 units	New	0.00	5	\$0.00	46%	at stock turnover	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Mobile Home	Miscellaneous	Miscellaneous	1 units	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Single Family	Cooling	Insulation - Ceiling Installation	sqft roof	Existing	0.21	45	\$1.15	22%	38%	\$0.05	1,785.73	1,934.00	7th Power Plan
Single Family	Heating	Insulation - Ceiling Installation	sqft roof	Existing	1.60	45	\$1.15	22%	38%	\$0.05	8,778.57	9,069.04	7th Power Plan
Single Family	Cooling	Insulation - Ceiling Upgrade	sqft roof	Existing	0.03	45	\$1.01	22%	38%	\$0.18	253.28	287.91	7th Power Plan
Single Family	Heating	Insulation - Ceiling Upgrade	sqft roof	Existing	0.36	45	\$1.01	22%	38%	\$0.18	1,970.72	2,076.35	7th Power Plan
Single Family	Cooling	Insulation - Radiant Barrier	sqft roof	Existing	0.15	15	\$0.67	4%	19%	\$0.05	1,206.29	1,360.11	AEG Research
Single Family	Heating	Insulation - Radiant Barrier	sqft roof	Existing	1.18	15	\$0.67	4%	19%	\$0.05	5,986.99	6,260.90	AEG Research
Single Family	Cooling	Insulation - Wall Cavity Installation	sqft wall	Existing	0.03	45	\$1.42	40%	40%	\$0.07	0.00	0.00	7th Power Plan
Single Family	Heating	Insulation - Wall Cavity Installation	sqft wall	Existing	1.46	45	\$1.42	40%	40%	\$0.07	0.00	0.00	7th Power Plan
Single Family	Cooling	Insulation - Wall Sheathing	sqft wall	Existing	0.02	20	\$0.93	3%	3%	\$0.17	0.00	0.00	AEG-BEST
Single Family	Heating	Insulation - Wall Sheathing	sqft wall	Existing	0.42	20	\$0.93	3%	3%	\$0.17	0.00	0.00	AEG-BEST
Single Family	Cooling	Insulation - Floor Installation	sqft floor cs	Existing	-0.03	45	\$1.35	49%	60%	\$0.16	-90.87	-102.52	7th Power Plan
Single Family	Heating	Insulation - Floor Installation	sqft floor cs	Existing	0.65	45	\$1.35	49%	60%	\$0.16	1,202.39	1,255.53	7th Power Plan
Single Family	Cooling	Insulation - Floor Upgrade	sqft floor cs	Existing	0.00	25	\$3.39	0%	0%	\$2.27	0.00	0.00	7th Power Plan
Single Family	Heating	Insulation - Floor Upgrade	sqft floor cs	Existing	0.11	25	\$3.39	0%	0%	\$2.27	0.00	0.00	7th Power Plan
Single Family	Cooling	Insulation - Foundation	household	Existing	-25.42	70	\$1,241.19	2%	2%	\$0.16	0.00	0.00	RTF Workbook
Single Family	Heating	Insulation - Foundation	household	Existing	605.46	70	\$1,241.19	2%	2%	\$0.16	0.00	0.00	RTF Workbook
Single Family	Cooling	Insulation - Ducting	household	Existing	44.40	18	\$528.00	52%	60%	\$0.15	140.59	170.47	AEG-BEST
Single Family	Heating	Insulation - Ducting	household	Existing	264.54	18	\$528.00	52%	60%	\$0.15	544.88	629.15	AEG-BEST
Single Family	Cooling	Ducting - Repair and Sealing	household	Existing	48.86	20	\$769.57	31%	75%	\$0.09	914.92	1,067.45	7th Power Plan
Single Family	Heating	Ducting - Repair and Sealing	household	Existing	628.34	20	\$769.57	31%	75%	\$0.09	7,733.22	8,416.14	7th Power Plan
Single Family	Cooling	Building Shell - Infiltration Control	sqft home	Existing	0.00	15	\$0.68	35%	75%	\$0.18	158.03	191.59	7th Power Plan
Single Family	Heating	Building Shell - Infiltration Control	sqft home	Existing	0.32	15	\$0.68	35%	75%	\$0.18	8,363.60	9,808.52	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Single Family	Cooling	Windows - High Efficiency/ENERGY STAR	sqft window	Existing	0.54	45	\$19.01	34%	75%	\$0.19	1,937.68	2,206.46	7th Power Plan
Single Family	Heating	Windows - High Efficiency/ENERGY STAR	sqft window	Existing	6.44	45	\$19.01	34%	75%	\$0.19	15,021.36	15,865.94	7th Power Plan
Single Family	Cooling	Windows - Install Reflective Film	sqft window	Existing	0.04	45	\$3.38	16%	75%	\$0.30	185.22	215.17	7th Power Plan
Single Family	Heating	Windows - Install Reflective Film	sqft window	Existing	0.72	45	\$3.38	16%	75%	\$0.30	2,353.07	2,566.10	7th Power Plan
Single Family	Cooling	Doors - Storm and Thermal	household	Existing	8.20	20	\$682.67	60%	80%	\$0.42	89.77	108.97	AEG-BEST
Single Family	Heating	Doors - Storm and Thermal	household	Existing	119.84	20	\$682.67	60%	80%	\$0.42	822.89	978.06	AEG-BEST
Single Family	Cooling	Ductless Mini Split Heat Pump (Zonal)	household	Existing	96.76	15	\$3,448.86	1%	75%	\$0.15	969.14	1,109.32	7th Power Plan
Single Family	Heating	Ductless Mini Split Heat Pump (Zonal)	household	Existing	1,935.91	15	\$3,448.86	1%	75%	\$0.15	12,495.64	13,641.68	7th Power Plan
Single Family	Cooling	Ductless Mini Split Heat Pump (Ducted Forced Air)	household	Existing	96.43	15	\$3,517.21	1%	45%	\$0.08	1,010.00	1,168.77	7th Power Plan
Single Family	Heating	Ductless Mini Split Heat Pump (Ducted Forced Air)	household	Existing	3,187.72	15	\$3,517.21	1%	45%	\$0.08	12,380.52	13,289.11	7th Power Plan
Single Family	Cooling	Space Heating - Heat Recovery Ventilator	household	Existing	6.81	20	\$1,303.92	0%	0%	\$0.19	0.00	0.00	7th Power Plan
Single Family	Heating	Space Heating - Heat Recovery Ventilator	household	Existing	562.61	20	\$1,303.92	0%	0%	\$0.19	0.00	0.00	7th Power Plan
Single Family	Cooling	Furnace - Conversion to Air-Source Heat Pump	household	Existing	0.00	15	\$2,955.28	0%	0%	\$0.11	0.00	0.00	7th Power Plan
Single Family	Heating	Furnace - Conversion to Air-Source Heat Pump	household	Existing	2,351.49	15	\$2,955.28	0%	0%	\$0.11	0.00	0.00	7th Power Plan
Single Family	Cooling	Room AC - Removal of Second Unit	household	Existing	495.45	3	\$18.00	0%	50%	\$0.01	3,525.75	3,759.44	CA DEER
Single Family	Cooling	Central AC - Maintenance and Tune-Up	household	Existing	60.48	6	\$275.74	7%	75%	\$0.75	946.22	1,072.94	Illinois TRM
Single Family	Cooling	Central Heat Pump - Controls and Commissioning	household	Existing	0.54	15	\$581.99	65%	75%	\$0.08	0.98	1.12	7th Power Plan
Single Family	Heating	Central Heat Pump - Controls and Commissioning	household	Existing	607.41	15	\$581.99	65%	75%	\$0.08	1,152.65	1,234.59	7th Power Plan
Single Family	Cooling	Ceiling Fan - ENERGY STAR	ceiling fans	Existing	8.96	10	\$47.23	40%	75%	\$0.61	344.62	386.98	ENERGY STAR

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Single Family	Cooling	Whole-House Fan - Installation	household	Existing	37.14	20	\$714.44	15%	40%	\$1.56	382.15	471.08	California Public Utilities Commission
Single Family	Cooling	Thermostat - WiFi/Interactive	household	Existing	56.48	10	\$256.67	5%	75%	\$0.07	2,249.97	2,546.43	7th Power Plan
Single Family	Heating	Thermostat - WiFi/Interactive	household	Existing	423.94	10	\$256.67	5%	75%	\$0.07	10,858.81	11,652.91	7th Power Plan
Single Family	Water Heating	Water Heater - Drainwater Heat Recovery	household	Existing	200.35	40	\$837.67	0%	0%	\$0.30	0.00	0.00	7th Power Plan
Single Family	Water Heating	Water Heater - Faucet Aerators	aerators	Existing	100.77	15	\$5.13	34%	50%	-\$0.18	1,815.76	2,216.30	7th Power Plan
Single Family	Water Heating	Water Heater - Low-Flow Showerheads	showerheads	Existing	219.14	10	\$26.56	51%	75%	-\$0.11	3,532.80	4,667.66	7th Power Plan
Single Family	Water Heating	Water Heater - Pipe Insulation	feet pipe	Existing	22.68	15	\$3.26	12%	75%	\$0.01	2,697.09	3,524.23	Mid-Atlantic TRM
Single Family	Water Heating	Water Heater - Desuperheater	household	Existing	1,350.83	20	\$1,136.89	0%	0%	\$0.07	146.22	179.50	RTF Workbook
Single Family	Water Heating	Water Heater - Temperature Setback	household	Existing	68.20	2	\$5.00	41%	75%	\$0.03	872.53	1,173.91	Illinois TRM
Single Family	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	showerheads	Existing	26.22	10	\$19.30	16%	45%	\$0.09	515.37	691.85	RTF Workbook
Single Family	Water Heating	Water Heater - Solar System	household	Existing	1,001.20	20	\$8,847.45	2%	30%	\$0.73	6,790.24	8,445.63	7th Power Plan
Single Family	Interior Lighting	Interior Lighting - Occupancy Sensors	occ sens	Existing	61.32	8	\$99.16	0%	5%	\$0.20	272.29	534.86	Pacific Gas and Electric Research
Single Family	Exterior Lighting	Exterior Lighting - Photosensor Control	ext fixt	Existing	12.90	15	\$10.19	8%	50%	\$0.07	627.93	1,576.06	Michigan Energy Measures Database
Single Family	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	ext fixt pv	Existing	16.54	3	\$28.00	1%	30%	\$0.42	259.35	723.26	AEG Research
Single Family	Exterior Lighting	Exterior Lighting - Timeclock Installation	ext fixt	Existing	8.80	10	\$19.15	2%	50%	\$0.23	475.99	1,265.15	Ontario Power TRM
Single Family	Appliances	Refrigerator - Decommissioning and Recycling	household	Existing	297.58	6	\$143.58	0%	75%	\$0.09	5,501.67	6,126.04	PacificCorp '13-'14 Evaluation
Single Family	Appliances	Freezer - Decommissioning and Recycling	household	Existing	286.30	5	\$143.58	0%	50%	\$0.11	5,199.24	5,903.37	PacificCorp '13-'14 Evaluation
Single Family	Electronics	Advanced Power Strips - Tier 1	smart strip	Existing	28.04	5	\$15.83	8%	25%	\$0.12	672.32	661.04	7th Power Plan

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Single Family	Electronics	Advanced Power Strips - Tier 2	smart strip	Existing	176.81	5	\$50.49	8%	25%	\$0.06	4,320.12	4,165.51	7th Power Plan
Single Family	Miscellaneous	Pool Pump - Timer	household	Existing	445.20	10	\$85.22	1%	75%	\$0.03	1,585.04	1,649.36	Ontario Power TRM
Single Family	Miscellaneous	Pool Heater - Solar Water Heating System	household	Existing	1,886.92	20	\$3,767.92	0%	30%	\$0.18	659.84	689.26	AEG Research
Single Family	Cooling	ENERGY STAR Home Design	household	Existing	67.41	20	\$4,253.40	0%	0%	\$0.24	0.00	0.00	RTF Workbook
Single Family	Heating	ENERGY STAR Home Design	household	Existing	670.26	20	\$4,253.40	0%	0%	\$0.24	0.00	0.00	RTF Workbook
Single Family	Water Heating	ENERGY STAR Home Design	household	Existing	417.77	20	\$4,253.40	0%	0%	\$0.24	0.00	0.00	RTF Workbook
Single Family	Interior Lighting	ENERGY STAR Home Design	household	Existing	219.88	20	\$4,253.40	0%	0%	\$0.24	0.00	0.00	RTF Workbook
Single Family	Cooling	Behavioral Programs	household	Existing	0.00	1	\$5.00	14%	14%	\$0.00	0.00	0.00	AEG Research
Single Family	Heating	Behavioral Programs	household	Existing	0.00	1	\$5.00	14%	14%	\$0.00	0.00	0.00	AEG Research
Single Family	Water Heating	Behavioral Programs	household	Existing	0.00	1	\$5.00	14%	14%	\$0.00	0.00	0.00	AEG Research
Single Family	Interior Lighting	Behavioral Programs	household	Existing	0.00	1	\$5.00	14%	14%	\$0.00	0.00	0.00	AEG Research
Single Family	Exterior Lighting	Behavioral Programs	household	Existing	0.00	1	\$5.00	14%	14%	\$0.00	0.00	0.00	AEG Research
Single Family	Appliances	Behavioral Programs	household	Existing	0.00	1	\$5.00	14%	14%	\$0.00	0.00	0.00	AEG Research
Single Family	Electronics	Behavioral Programs	household	Existing	0.00	1	\$5.00	14%	14%	\$0.00	0.00	0.00	AEG Research
Single Family	Miscellaneous	Behavioral Programs	household	Existing	0.00	1	\$5.00	14%	14%	\$0.00	0.00	0.00	AEG Research
Single Family	Interior Lighting	Interior Lighting - General Service CFLs	GSL lamp	Existing	7.69	9	-\$0.13	0%	51%	\$0.00	843.14	2,701.46	RTF Workbook
Single Family	Interior Lighting	Interior Lighting - Exempted CFLs	Exempt lamp	Existing	9.72	5	-\$2.74	0%	51%	-\$0.04	757.93	1,427.31	RTF Workbook
Single Family	Cooling	Insulation - Ceiling Installation	sqft roof	New	0.25	45	\$1.15	16%	38%	\$0.04	79.27	82.67	7th Power Plan
Single Family	Heating	Insulation - Ceiling Installation	sqft roof	New	1.57	45	\$1.15	16%	38%	\$0.04	293.60	303.22	7th Power Plan
Single Family	Cooling	Insulation - Ceiling Upgrade	sqft roof	New	0.04	45	\$1.01	16%	38%	\$0.18	12.16	12.67	7th Power Plan
Single Family	Heating	Insulation - Ceiling Upgrade	sqft roof	New	0.36	45	\$1.01	16%	38%	\$0.18	66.95	68.94	7th Power Plan
Single Family	Cooling	Insulation - Radiant Barrier	sqft roof	New	0.19	15	\$0.67	1%	5%	\$0.05	10.05	10.48	AEG Research
Single Family	Heating	Insulation - Radiant Barrier	sqft roof	New	1.15	15	\$0.67	1%	5%	\$0.05	35.32	36.40	AEG Research
Single Family	Cooling	Insulation - Wall Cavity Installation	sqft wall	New	0.03	45	\$1.42	80%	80%	\$0.07	0.00	0.00	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Single Family	Heating	Insulation - Wall Cavity Installation	sqft wall	New	1.44	45	\$1.42	80%	80%	\$0.07	0.00	0.00	7th Power Plan
Single Family	Cooling	Insulation - Wall Sheathing	sqft wall	New	0.03	20	\$0.93	2%	20%	\$0.17	15.08	15.72	AEG-BEST
Single Family	Heating	Insulation - Wall Sheathing	sqft wall	New	0.43	20	\$0.93	2%	20%	\$0.17	116.20	119.93	AEG-BEST
Single Family	Cooling	Insulation - Floor Installation	sqft floor cs	New	-0.04	45	\$1.35	76%	76%	\$0.17	-0.11	-0.12	7th Power Plan
Single Family	Heating	Insulation - Floor Installation	sqft floor cs	New	0.63	45	\$1.35	76%	76%	\$0.17	1.04	1.07	7th Power Plan
Single Family	Cooling	Insulation - Floor Upgrade	sqft floor cs	New	0.00	25	\$3.39	0%	0%	\$2.28	0.00	0.00	7th Power Plan
Single Family	Heating	Insulation - Floor Upgrade	sqft floor cs	New	0.12	25	\$3.39	0%	0%	\$2.28	0.00	0.00	7th Power Plan
Single Family	Cooling	Insulation - Foundation	household	New	-33.73	70	\$1,241.19	9%	75%	\$0.15	-35.62	-37.11	RTF Workbook
Single Family	Heating	Insulation - Foundation	household	New	657.00	70	\$1,241.19	9%	75%	\$0.15	405.96	418.79	RTF Workbook
Single Family	Cooling	Insulation - Ducting	household	New	49.90	18	\$528.00	79%	80%	\$0.14	0.57	0.60	AEG-BEST
Single Family	Heating	Insulation - Ducting	household	New	277.53	18	\$528.00	79%	80%	\$0.14	1.86	1.92	AEG-BEST
Single Family	Cooling	Ducting - Repair and Sealing	household	New	54.66	20	\$769.57	31%	75%	\$0.09	36.29	37.84	7th Power Plan
Single Family	Heating	Ducting - Repair and Sealing	household	New	655.50	20	\$769.57	31%	75%	\$0.09	254.73	262.33	7th Power Plan
Single Family	Cooling	Building Shell - Infiltration Control	sqft home	New	0.01	15	\$0.68	71%	75%	\$0.18	0.63	0.65	7th Power Plan
Single Family	Heating	Building Shell - Infiltration Control	sqft home	New	0.34	15	\$0.68	71%	75%	\$0.18	24.49	25.31	7th Power Plan
Single Family	Cooling	Windows - High Efficiency/ENERGY STAR	sqft window	New	0.68	45	\$19.01	47%	75%	\$0.19	45.45	47.35	7th Power Plan
Single Family	Heating	Windows - High Efficiency/ENERGY STAR	sqft window	New	6.36	45	\$19.01	47%	75%	\$0.19	249.62	256.99	7th Power Plan
Single Family	Cooling	Windows - Install Reflective Film	sqft window	New	0.05	45	\$3.38	16%	75%	\$0.29	6.65	6.92	7th Power Plan
Single Family	Heating	Windows - Install Reflective Film	sqft window	New	0.73	45	\$3.38	16%	75%	\$0.29	60.40	62.15	7th Power Plan
Single Family	Cooling	Doors - Storm and Thermal	household	New	4.24	20	\$682.67	70%	80%	\$0.78	0.66	0.69	AEG-BEST
Single Family	Heating	Doors - Storm and Thermal	household	New	68.24	20	\$682.67	70%	80%	\$0.78	6.15	6.45	AEG-BEST
Single Family	Cooling	Ductless Mini Split Heat Pump (Zonal)	household	New	94.40	15	\$3,448.86	1%	75%	\$0.15	7.31	7.57	7th Power Plan

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Single Family	Heating	Ductless Mini Split Heat Pump (Zonal)	household	New	1,995.95	15	\$3,448.86	1%	75%	\$0.15	94.27	94.84	7th Power Plan
Single Family	Cooling	Ductless Mini Split Heat Pump (Ducted Forced Air)	household	New	108.54	15	\$3,517.21	1%	45%	\$0.08	54.62	56.59	7th Power Plan
Single Family	Heating	Ductless Mini Split Heat Pump (Ducted Forced Air)	household	New	3,277.52	15	\$3,517.21	1%	45%	\$0.08	533.67	537.97	7th Power Plan
Single Family	Cooling	Space Heating - Heat Recovery Ventilator	household	New	7.76	20	\$1,303.92	0%	0%	\$0.18	0.00	0.00	7th Power Plan
Single Family	Heating	Space Heating - Heat Recovery Ventilator	household	New	596.55	20	\$1,303.92	0%	0%	\$0.18	0.00	0.00	7th Power Plan
Single Family	Cooling	Furnace - Conversion to Air-Source Heat Pump	household	New	0.00	15	\$2,955.28	0%	0%	\$0.11	0.00	0.00	7th Power Plan
Single Family	Heating	Furnace - Conversion to Air-Source Heat Pump	household	New	2,455.84	15	\$2,955.28	0%	0%	\$0.11	0.00	0.00	7th Power Plan
Single Family	Cooling	Room AC - Removal of Second Unit	household	New	449.18	3	\$18.00	25%	50%	\$0.01	2.16	2.29	CA DEER
Single Family	Cooling	Central AC - Maintenance and Tune-Up	household	New	68.56	6	\$275.74	45%	75%	\$0.71	5.55	5.98	Illinois TRM
Single Family	Cooling	Central Heat Pump - Controls and Commissioning	household	New	0.62	15	\$581.99	25%	75%	\$0.08	0.22	0.23	7th Power Plan
Single Family	Heating	Central Heat Pump - Controls and Commissioning	household	New	640.09	15	\$581.99	25%	75%	\$0.08	233.89	236.24	7th Power Plan
Single Family	Cooling	Ceiling Fan - ENERGY STAR	ceiling fans	New	12.87	10	\$47.23	50%	75%	\$0.45	7.62	7.95	ENERGY STAR
Single Family	Cooling	Whole-House Fan - Installation	household	New	46.54	20	\$714.44	15%	40%	\$1.32	17.34	18.32	California Public Utilities Commission
Single Family	Cooling	Thermostat - WiFi/Interactive	household	New	72.93	10	\$256.67	5%	75%	\$0.06	86.69	90.03	7th Power Plan
Single Family	Heating	Thermostat - WiFi/Interactive	household	New	429.40	10	\$256.67	5%	75%	\$0.06	299.19	306.18	7th Power Plan
Single Family	Water Heating	Water Heater - Drainwater Heat Recovery	household	New	212.93	40	\$837.67	1%	10%	\$0.29	22.95	25.80	7th Power Plan
Single Family	Water Heating	Water Heater - Faucet Aerators	aerators	New	103.82	15	\$5.13	43%	50%	-\$0.17	20.49	23.90	7th Power Plan
Single Family	Water Heating	Water Heater - Low-Flow Showerheads	showerheads	New	228.76	10	\$26.56	65%	75%	-\$0.11	19.25	23.92	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Single Family	Water Heating	Water Heater - Pipe Insulation	feet pipe	New	23.49	15	\$3.26	12%	75%	\$0.01	45.41	55.34	Mid-Atlantic TRM
Single Family	Water Heating	Water Heater - Desuperheater	household	New	1,227.49	20	\$1,136.89	0%	0%	\$0.08	3.87	4.32	RTF Workbook
Single Family	Water Heating	Water Heater - Temperature Setback	household	New	72.47	2	\$5.00	51%	75%	\$0.03	0.91	1.19	Illinois TRM
Single Family	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	showerheads	New	27.82	10	\$19.30	16%	45%	\$0.08	7.01	8.73	RTF Workbook
Single Family	Water Heating	Water Heater - Solar System	household	New	975.08	20	\$8,847.45	2%	30%	\$0.76	187.55	212.86	7th Power Plan
Single Family	Interior Lighting	Interior Lighting - Occupancy Sensors	occ sens	New	63.26	8	\$99.16	0%	5%	\$0.18	5.34	8.27	Pacific Gas and Electric Research
Single Family	Exterior Lighting	Exterior Lighting - Photosensor Control	ext fixt	New	11.22	15	\$10.19	3%	50%	\$0.08	21.44	35.54	Michigan Energy Measures Database
Single Family	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	ext fixt pv	New	12.59	3	\$28.00	1%	30%	\$0.54	1.30	3.40	AEG Research
Single Family	Exterior Lighting	Exterior Lighting - Timeclock Installation	ext fixt	New	8.63	10	\$19.15	0%	50%	\$0.22	13.56	24.77	Ontario Power TRM
Single Family	Appliances	Refrigerator - Decommissioning and Recycling	household	New	279.25	6	\$143.58	0%	75%	\$0.09	69.45	74.52	PacificCorp '13-'14 Evaluation
Single Family	Appliances	Freezer - Decommissioning and Recycling	household	New	271.92	5	\$143.58	0%	50%	\$0.11	52.82	56.76	PacificCorp '13-'14 Evaluation
Single Family	Electronics	Advanced Power Strips - Tier 1	smart strip	New	36.12	5	\$15.83	8%	25%	\$0.10	14.88	13.54	7th Power Plan
Single Family	Electronics	Advanced Power Strips - Tier 2	smart strip	New	224.74	5	\$50.49	8%	25%	\$0.05	92.58	84.41	7th Power Plan
Single Family	Miscellaneous	Pool Pump - Timer	household	New	473.30	10	\$85.22	1%	75%	\$0.02	47.50	48.15	Ontario Power TRM
Single Family	Miscellaneous	Pool Heater - Solar Water Heating System	household	New	1,834.79	20	\$3,767.92	0%	30%	\$0.19	21.16	21.40	AEG Research
Single Family	Cooling	ENERGY STAR Home Design	household	New	89.16	20	\$4,253.40	15%	75%	\$0.23	143.87	146.08	RTF Workbook
Single Family	Heating	ENERGY STAR Home Design	household	New	718.50	20	\$4,253.40	15%	75%	\$0.23	681.96	684.72	RTF Workbook
Single Family	Water Heating	ENERGY STAR Home Design	household	New	411.66	20	\$4,253.40	15%	75%	\$0.23	260.37	293.57	RTF Workbook
Single Family	Interior Lighting	ENERGY STAR Home Design	household	New	227.50	20	\$4,253.40	15%	75%	\$0.23	321.50	356.65	RTF Workbook
Single Family	Cooling	Behavioral Programs	household	New	0.00	1	\$5.00	14%	14%	\$0.00	0.00	0.00	AEG Research

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Single Family	Heating	Behavioral Programs	household	New	0.00	1	\$5.00	14%	14%	\$0.00	0.00	0.00	AEG Research
Single Family	Water Heating	Behavioral Programs	household	New	0.00	1	\$5.00	14%	14%	\$0.00	0.00	0.00	AEG Research
Single Family	Interior Lighting	Behavioral Programs	household	New	0.00	1	\$5.00	14%	14%	\$0.00	0.00	0.00	AEG Research
Single Family	Exterior Lighting	Behavioral Programs	household	New	0.00	1	\$5.00	14%	14%	\$0.00	0.00	0.00	AEG Research
Single Family	Appliances	Behavioral Programs	household	New	0.00	1	\$5.00	14%	14%	\$0.00	0.00	0.00	AEG Research
Single Family	Electronics	Behavioral Programs	household	New	0.00	1	\$5.00	14%	14%	\$0.00	0.00	0.00	AEG Research
Single Family	Miscellaneous	Behavioral Programs	household	New	0.00	1	\$5.00	14%	14%	\$0.00	0.00	0.00	AEG Research
Single Family	Interior Lighting	Interior Lighting - General Service CFLs	GSL lamp	New	6.68	9	-\$0.13	0%	51%	\$0.00	36.87	95.76	RTF Workbook
Single Family	Interior Lighting	Interior Lighting - Exempted CFLs	Exempt lamp	New	9.68	5	-\$2.74	0%	51%	-\$0.04	27.34	44.14	RTF Workbook
Multifamily	Cooling	Insulation - Ceiling Installation	sqft roof - mf	Existing	0.15	45	\$0.75	14%	38%	\$0.07	233.42	260.97	7th Power Plan
Multifamily	Heating	Insulation - Ceiling Installation	sqft roof - mf	Existing	0.63	45	\$0.75	14%	38%	\$0.07	1,114.98	1,122.79	7th Power Plan
Multifamily	Cooling	Insulation - Ceiling Upgrade	sqft roof - mf	Existing	0.02	45	\$1.01	14%	38%	\$0.29	25.01	35.56	7th Power Plan
Multifamily	Heating	Insulation - Ceiling Upgrade	sqft roof - mf	Existing	0.22	45	\$1.01	14%	38%	\$0.29	380.30	403.77	7th Power Plan
Multifamily	Cooling	Insulation - Radiant Barrier	sqft roof - mf	Existing	0.09	15	\$0.67	4%	19%	\$0.08	79.15	111.47	AEG Research
Multifamily	Heating	Insulation - Radiant Barrier	sqft roof - mf	Existing	0.72	15	\$0.67	4%	19%	\$0.08	766.97	808.08	AEG Research
Multifamily	Cooling	Insulation - Wall Cavity Installation	sqft wall	Existing	0.02	45	\$1.06	40%	40%	\$0.05	0.00	0.00	7th Power Plan
Multifamily	Heating	Insulation - Wall Cavity Installation	sqft wall	Existing	1.29	45	\$1.06	40%	40%	\$0.05	0.00	0.00	7th Power Plan
Multifamily	Cooling	Insulation - Wall Sheathing	sqft wall	Existing	0.01	20	\$0.93	15%	15%	\$0.35	0.00	0.00	AEG-BEST
Multifamily	Heating	Insulation - Wall Sheathing	sqft wall	Existing	0.21	20	\$0.93	15%	15%	\$0.35	0.00	0.00	AEG-BEST
Multifamily	Cooling	Insulation - Floor Installation	sqft floor cs - mh	Existing	-0.01	45	\$1.01	14%	60%	\$0.10	-35.27	-40.20	7th Power Plan
Multifamily	Heating	Insulation - Floor Installation	sqft floor cs - mh	Existing	0.73	45	\$1.01	14%	60%	\$0.10	2,522.33	2,565.61	7th Power Plan
Multifamily	Cooling	Insulation - Floor Upgrade	sqft floor cs - mh	Existing	0.00	25	\$3.39	0%	0%	\$7.14	0.00	0.00	7th Power Plan

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Multifamily	Heating	Insulation - Floor Upgrade	sqft floor cs - mh	Existing	0.03	25	\$3.39	0%	0%	\$7.14	0.00	0.00	7th Power Plan
Multifamily	Cooling	Insulation - Foundation	household	Existing	-8.05	70	\$1,241.19	0%	0%	\$0.47	0.00	0.00	RTF Workbook
Multifamily	Heating	Insulation - Foundation	household	Existing	197.56	70	\$1,241.19	0%	0%	\$0.47	0.00	0.00	RTF Workbook
Multifamily	Cooling	Insulation - Ducting	household	Existing	7.60	18	\$528.00	3%	60%	\$0.92	13.74	21.93	AEG-BEST
Multifamily	Heating	Insulation - Ducting	household	Existing	36.23	18	\$528.00	3%	60%	\$0.92	71.13	88.70	AEG-BEST
Multifamily	Cooling	Ducting - Repair and Sealing	household	Existing	19.35	20	\$384.79	31%	75%	\$0.11	29.02	41.10	7th Power Plan
Multifamily	Heating	Ducting - Repair and Sealing	household	Existing	203.31	20	\$384.79	31%	75%	\$0.11	331.69	359.95	7th Power Plan
Multifamily	Cooling	Building Shell - Infiltration Control	sqft home	Existing	0.00	15	\$0.68	50%	75%	\$0.28	6.72	9.80	7th Power Plan
Multifamily	Heating	Building Shell - Infiltration Control	sqft home	Existing	0.21	15	\$0.68	50%	75%	\$0.28	738.38	808.59	7th Power Plan
Multifamily	Cooling	Windows - High Efficiency/ENERGY STAR	sqft window	Existing	0.25	45	\$18.29	27%	75%	\$0.36	147.86	211.63	7th Power Plan
Multifamily	Heating	Windows - High Efficiency/ENERGY STAR	sqft window	Existing	3.00	45	\$18.29	27%	75%	\$0.36	2,237.47	2,392.58	7th Power Plan
Multifamily	Cooling	Windows - Install Reflective Film	sqft window	Existing	0.02	45	\$5.61	34%	75%	\$0.22	9.07	12.77	7th Power Plan
Multifamily	Heating	Windows - Install Reflective Film	sqft window	Existing	1.81	45	\$5.61	34%	75%	\$0.22	1,164.73	1,213.24	7th Power Plan
Multifamily	Cooling	Doors - Storm and Thermal	household	Existing	2.38	20	\$682.67	70%	80%	\$1.31	2.72	4.39	AEG-BEST
Multifamily	Heating	Doors - Storm and Thermal	household	Existing	35.72	20	\$682.67	70%	80%	\$1.31	51.39	62.87	AEG-BEST
Multifamily	Cooling	Ductless Mini Split Heat Pump (Zonal)	household	Existing	55.11	15	\$3,448.86	1%	75%	\$0.50	353.30	502.31	7th Power Plan
Multifamily	Heating	Ductless Mini Split Heat Pump (Zonal)	household	Existing	530.09	15	\$3,448.86	1%	75%	\$0.50	4,635.94	5,066.19	7th Power Plan
Multifamily	Cooling	Ductless Mini Split Heat Pump (Ducted Forced Air)	household	Existing	47.26	15	\$3,517.21	1%	45%	\$0.26	46.98	63.51	7th Power Plan
Multifamily	Heating	Ductless Mini Split Heat Pump (Ducted Forced Air)	household	Existing	862.02	15	\$3,517.21	1%	45%	\$0.26	885.13	959.72	7th Power Plan
Multifamily	Cooling	Space Heating - Heat Recovery Ventilator	household	Existing	2.68	20	\$1,303.92	0%	0%	\$0.57	0.00	0.00	7th Power Plan
Multifamily	Heating	Space Heating - Heat Recovery Ventilator	household	Existing	180.11	20	\$1,303.92	0%	0%	\$0.57	0.00	0.00	7th Power Plan
Multifamily	Cooling	Furnace - Conversion to Air-Source Heat Pump	household	Existing	0.00	15	\$2,955.28	0%	0%	\$0.38	0.00	0.00	7th Power Plan

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Multifamily	Heating	Furnace - Conversion to Air-Source Heat Pump	household	Existing	660.29	15	\$2,955.28	0%	0%	\$0.38	0.00	0.00	7th Power Plan
Multifamily	Cooling	Room AC - Removal of Second Unit	household	Existing	328.72	3	\$18.00	0%	50%	\$0.02	1,676.21	1,891.76	CA DEER
Multifamily	Cooling	Central AC - Maintenance and Tune-Up	household	Existing	28.47	6	\$275.74	1%	75%	\$1.32	43.28	57.39	Illinois TRM
Multifamily	Cooling	Central Heat Pump - Controls and Commissioning	household	Existing	0.11	15	\$581.99	65%	75%	\$0.27	0.01	0.02	7th Power Plan
Multifamily	Heating	Central Heat Pump - Controls and Commissioning	household	Existing	172.72	15	\$581.99	65%	75%	\$0.27	22.22	24.43	7th Power Plan
Multifamily	Cooling	Ceiling Fan - ENERGY STAR	ceiling fans	Existing	7.44	10	\$47.23	40%	75%	\$0.64	61.45	78.82	ENERGY STAR
Multifamily	Cooling	Whole-House Fan - Installation	household	Existing	15.30	20	\$714.44	2%	10%	\$3.10	4.10	6.56	California Public Utilities Commission
Multifamily	Cooling	Thermostat - WiFi/Interactive	household	Existing	17.03	10	\$256.67	5%	50%	\$0.21	94.04	128.18	7th Power Plan
Multifamily	Heating	Thermostat - WiFi/Interactive	household	Existing	127.73	10	\$256.67	5%	50%	\$0.21	890.66	958.47	7th Power Plan
Multifamily	Water Heating	Water Heater - Drainwater Heat Recovery	household	Existing	178.09	40	\$837.67	0%	0%	\$0.34	0.00	0.00	7th Power Plan
Multifamily	Water Heating	Water Heater - Faucet Aerators	aerators	Existing	49.34	15	\$5.13	13%	50%	-\$0.36	447.95	548.38	7th Power Plan
Multifamily	Water Heating	Water Heater - Low-Flow Showerheads	showerheads	Existing	154.32	10	\$26.56	19%	75%	-\$0.11	1,378.49	1,829.77	7th Power Plan
Multifamily	Water Heating	Water Heater - Pipe Insulation	feet pipe	Existing	20.40	15	\$3.26	12%	75%	\$0.02	791.73	1,037.35	Mid-Atlantic TRM
Multifamily	Water Heating	Water Heater - Desuperheater	household	Existing	1,094.14	20	\$1,136.89	0%	0%	\$0.09	0.00	0.00	RTF Workbook
Multifamily	Water Heating	Water Heater - Temperature Setback	household	Existing	60.64	2	\$5.00	41%	75%	\$0.04	251.72	342.84	Illinois TRM
Multifamily	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	showerheads	Existing	25.90	10	\$19.30	16%	45%	\$0.09	119.92	162.99	RTF Workbook
Multifamily	Water Heating	Water Heater - Solar System	household	Existing	811.21	20	\$8,847.45	1%	10%	\$0.90	548.01	687.90	7th Power Plan
Multifamily	Interior Lighting	Interior Lighting - Occupancy Sensors	occ sens	Existing	63.11	8	\$99.16	0%	10%	\$0.21	76.93	144.75	Pacific Gas and Electric Research

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Multifamily	Exterior Lighting	Exterior Lighting - Photosensor Control	ext fixt	Existing	13.02	15	\$10.19	1%	50%	\$0.07	71.70	164.66	Michigan Energy Measures Database
Multifamily	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	ext fixt pv	Existing	17.12	3	\$28.00	1%	30%	\$0.40	25.92	66.64	AEG Research
Multifamily	Exterior Lighting	Exterior Lighting - Timeclock Installation	ext fixt	Existing	9.10	10	\$19.15	1%	50%	\$0.22	48.28	118.27	Ontario Power TRM
Multifamily	Appliances	Refrigerator - Decommissioning and Recycling	household	Existing	296.94	6	\$143.58	0%	75%	\$0.09	188.78	211.05	PacifiCorp '13-'14 Evaluation
Multifamily	Appliances	Freezer - Decommissioning and Recycling	household	Existing	290.21	5	\$143.58	0%	50%	\$0.11	462.53	521.07	PacifiCorp '13-'14 Evaluation
Multifamily	Electronics	Advanced Power Strips - Tier 1	smart strip	Existing	28.64	5	\$15.83	8%	25%	\$0.12	182.14	178.21	7th Power Plan
Multifamily	Electronics	Advanced Power Strips - Tier 2	smart strip	Existing	181.99	5	\$50.49	8%	25%	\$0.06	1,187.40	1,130.86	7th Power Plan
Multifamily	Miscellaneous	Pool Pump - Timer	household	Existing	0.00	10	\$85.22	1%	75%	\$0.00	0.00	0.00	Ontario Power TRM
Multifamily	Miscellaneous	Pool Heater - Solar Water Heating System	household	Existing	0.00	20	\$3,767.92	0%	30%	\$0.00	0.00	0.00	AEG Research
Multifamily	Cooling	ENERGY STAR Home Design	household	Existing	19.63	20	\$4,253.40	0%	0%	\$0.48	0.00	0.00	RTF Workbook
Multifamily	Heating	ENERGY STAR Home Design	household	Existing	200.43	20	\$4,253.40	0%	0%	\$0.48	0.00	0.00	RTF Workbook
Multifamily	Water Heating	ENERGY STAR Home Design	household	Existing	345.71	20	\$4,253.40	0%	0%	\$0.48	0.00	0.00	RTF Workbook
Multifamily	Interior Lighting	ENERGY STAR Home Design	household	Existing	123.49	20	\$4,253.40	0%	0%	\$0.48	0.00	0.00	RTF Workbook
Multifamily	Cooling	Behavioral Programs	household	Existing	0.00	1	\$5.00	14%	14%	\$0.00	0.00	0.00	AEG Research
Multifamily	Heating	Behavioral Programs	household	Existing	0.00	1	\$5.00	14%	14%	\$0.00	0.00	0.00	AEG Research
Multifamily	Water Heating	Behavioral Programs	household	Existing	0.00	1	\$5.00	14%	14%	\$0.00	0.00	0.00	AEG Research
Multifamily	Interior Lighting	Behavioral Programs	household	Existing	0.00	1	\$5.00	14%	14%	\$0.00	0.00	0.00	AEG Research
Multifamily	Exterior Lighting	Behavioral Programs	household	Existing	0.00	1	\$5.00	14%	14%	\$0.00	0.00	0.00	AEG Research
Multifamily	Appliances	Behavioral Programs	household	Existing	0.00	1	\$5.00	14%	14%	\$0.00	0.00	0.00	AEG Research
Multifamily	Electronics	Behavioral Programs	household	Existing	0.00	1	\$5.00	14%	14%	\$0.00	0.00	0.00	AEG Research
Multifamily	Miscellaneous	Behavioral Programs	household	Existing	0.00	1	\$5.00	14%	14%	\$0.00	0.00	0.00	AEG Research
Multifamily	Interior Lighting	Interior Lighting - General Service CFLs	GSL lamp	Existing	7.43	9	-\$0.13	0%	44%	\$0.00	137.97	384.92	RTF Workbook

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Multifamily	Interior Lighting	Interior Lighting - Exempted CFLs	Exempt lamp	Existing	9.08	5	-\$2.74	0%	44%	-\$0.05	16.76	29.71	RTF Workbook
Multifamily	Cooling	Insulation - Ceiling Installation	sqft roof - mf	New	0.20	45	\$0.75	9%	38%	\$0.06	19.89	20.59	7th Power Plan
Multifamily	Heating	Insulation - Ceiling Installation	sqft roof - mf	New	0.66	45	\$0.75	9%	38%	\$0.06	73.23	73.55	7th Power Plan
Multifamily	Cooling	Insulation - Ceiling Upgrade	sqft roof - mf	New	0.03	45	\$1.01	9%	38%	\$0.27	3.01	3.10	7th Power Plan
Multifamily	Heating	Insulation - Ceiling Upgrade	sqft roof - mf	New	0.24	45	\$1.01	9%	38%	\$0.27	27.10	27.12	7th Power Plan
Multifamily	Cooling	Insulation - Radiant Barrier	sqft roof - mf	New	0.15	15	\$0.67	1%	5%	\$0.08	1.92	1.98	AEG Research
Multifamily	Heating	Insulation - Radiant Barrier	sqft roof - mf	New	0.78	15	\$0.67	1%	5%	\$0.08	10.99	11.00	AEG Research
Multifamily	Cooling	Insulation - Wall Cavity Installation	sqft wall	New	0.02	45	\$1.06	80%	80%	\$0.05	0.00	0.00	7th Power Plan
Multifamily	Heating	Insulation - Wall Cavity Installation	sqft wall	New	1.35	45	\$1.06	80%	80%	\$0.05	0.00	0.00	7th Power Plan
Multifamily	Cooling	Insulation - Wall Sheathing	sqft wall	New	0.02	20	\$0.93	15%	20%	\$0.33	0.79	0.81	AEG-BEST
Multifamily	Heating	Insulation - Wall Sheathing	sqft wall	New	0.23	20	\$0.93	15%	20%	\$0.33	10.21	10.19	AEG-BEST
Multifamily	Cooling	Insulation - Floor Installation	sqft floor cs - mh	New	-0.02	45	\$1.01	31%	75%	\$0.10	-2.44	-2.52	7th Power Plan
Multifamily	Heating	Insulation - Floor Installation	sqft floor cs - mh	New	0.77	45	\$1.01	31%	75%	\$0.10	133.04	133.47	7th Power Plan
Multifamily	Cooling	Insulation - Floor Upgrade	sqft floor cs - mh	New	0.00	25	\$3.39	0%	0%	\$6.82	0.00	0.00	7th Power Plan
Multifamily	Heating	Insulation - Floor Upgrade	sqft floor cs - mh	New	0.04	25	\$3.39	0%	0%	\$6.82	0.00	0.00	7th Power Plan
Multifamily	Cooling	Insulation - Foundation	household	New	-13.01	70	\$1,241.19	0%	0%	\$0.45	0.00	0.00	RTF Workbook
Multifamily	Heating	Insulation - Foundation	household	New	216.85	70	\$1,241.19	0%	0%	\$0.45	0.00	0.00	RTF Workbook
Multifamily	Cooling	Insulation - Ducting	household	New	11.31	18	\$528.00	15%	80%	\$0.88	2.55	2.67	AEG-BEST
Multifamily	Heating	Insulation - Ducting	household	New	41.35	18	\$528.00	15%	80%	\$0.88	8.42	8.58	AEG-BEST
Multifamily	Cooling	Ducting - Repair and Sealing	household	New	30.54	20	\$384.79	31%	75%	\$0.10	4.69	4.85	7th Power Plan
Multifamily	Heating	Ducting - Repair and Sealing	household	New	242.12	20	\$384.79	31%	75%	\$0.10	33.78	33.65	7th Power Plan
Multifamily	Cooling	Building Shell - Infiltration Control	sqft home	New	0.00	15	\$0.68	73%	75%	\$0.27	0.06	0.06	7th Power Plan

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Multifamily	Heating	Building Shell - Infiltration Control	sqft home	New	0.24	15	\$0.68	73%	75%	\$0.27	4.01	4.00	7th Power Plan
Multifamily	Cooling	Windows - High Efficiency/ENERGY STAR	sqft window	New	0.40	45	\$18.29	37%	75%	\$0.34	11.64	11.99	7th Power Plan
Multifamily	Heating	Windows - High Efficiency/ENERGY STAR	sqft window	New	3.31	45	\$18.29	37%	75%	\$0.34	104.42	104.39	7th Power Plan
Multifamily	Cooling	Windows - Install Reflective Film	sqft window	New	0.03	45	\$5.61	53%	75%	\$0.21	0.48	0.49	7th Power Plan
Multifamily	Heating	Windows - Install Reflective Film	sqft window	New	1.94	45	\$5.61	53%	75%	\$0.21	35.88	35.93	7th Power Plan
Multifamily	Cooling	Doors - Storm and Thermal	household	New	1.61	20	\$682.67	80%	80%	\$2.33	0.00	0.00	AEG-BEST
Multifamily	Heating	Doors - Storm and Thermal	household	New	22.79	20	\$682.67	80%	80%	\$2.33	0.00	0.00	AEG-BEST
Multifamily	Cooling	Ductless Mini Split Heat Pump (Zonal)	household	New	69.14	15	\$3,448.86	6%	75%	\$0.50	24.83	25.46	7th Power Plan
Multifamily	Heating	Ductless Mini Split Heat Pump (Zonal)	household	New	581.73	15	\$3,448.86	6%	75%	\$0.50	266.65	263.06	7th Power Plan
Multifamily	Cooling	Ductless Mini Split Heat Pump (Ducted Forced Air)	household	New	62.01	15	\$3,517.21	6%	45%	\$0.26	9.92	10.17	7th Power Plan
Multifamily	Heating	Ductless Mini Split Heat Pump (Ducted Forced Air)	household	New	948.37	15	\$3,517.21	6%	45%	\$0.26	140.12	138.37	7th Power Plan
Multifamily	Cooling	Space Heating - Heat Recovery Ventilator	household	New	4.32	20	\$1,303.92	0%	0%	\$0.50	0.00	0.00	7th Power Plan
Multifamily	Heating	Space Heating - Heat Recovery Ventilator	household	New	222.82	20	\$1,303.92	0%	0%	\$0.50	0.00	0.00	7th Power Plan
Multifamily	Cooling	Furnace - Conversion to Air-Source Heat Pump	household	New	0.00	15	\$2,955.28	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Multifamily	Heating	Furnace - Conversion to Air-Source Heat Pump	household	New	0.00	15	\$2,955.28	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Multifamily	Cooling	Room AC - Removal of Second Unit	household	New	331.09	3	\$18.00	25%	50%	\$0.02	7.61	7.97	CA DEER
Multifamily	Cooling	Central AC - Maintenance and Tune-Up	household	New	38.64	6	\$275.74	45%	75%	\$1.24	1.08	1.16	Illinois TRM
Multifamily	Cooling	Central Heat Pump - Controls and Commissioning	household	New	0.14	15	\$581.99	25%	75%	\$0.00	0.00	0.00	7th Power Plan
Multifamily	Heating	Central Heat Pump - Controls and Commissioning	household	New	0.00	15	\$581.99	25%	75%	\$0.00	0.00	0.00	7th Power Plan

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Multifamily	Cooling	Ceiling Fan - ENERGY STAR	ceiling fans	New	13.62	10	\$47.23	50%	75%	\$0.44	3.69	3.78	ENERGY STAR
Multifamily	Cooling	Whole-House Fan - Installation	household	New	25.45	20	\$714.44	2%	10%	\$2.38	0.75	0.78	California Public Utilities Commission
Multifamily	Cooling	Thermostat - WiFi/Interactive	household	New	28.07	10	\$256.67	5%	50%	\$0.19	10.28	10.55	7th Power Plan
Multifamily	Heating	Thermostat - WiFi/Interactive	household	New	146.00	10	\$256.67	5%	50%	\$0.19	58.80	58.40	7th Power Plan
Multifamily	Water Heating	Water Heater - Drainwater Heat Recovery	household	New	171.87	40	\$837.67	0%	0%	\$0.35	0.00	0.00	7th Power Plan
Multifamily	Water Heating	Water Heater - Faucet Aerators	aerators	New	50.86	15	\$5.13	9%	50%	-\$0.34	22.78	26.72	7th Power Plan
Multifamily	Water Heating	Water Heater - Low-Flow Showerheads	showerheads	New	160.83	10	\$26.56	14%	75%	-\$0.10	34.74	43.67	7th Power Plan
Multifamily	Water Heating	Water Heater - Pipe Insulation	feet pipe	New	19.21	15	\$3.26	12%	75%	\$0.02	20.92	25.76	Mid-Atlantic TRM
Multifamily	Water Heating	Water Heater - Desuperheater	household	New	990.42	20	\$1,136.89	0%	0%	\$0.10	0.00	0.00	RTF Workbook
Multifamily	Water Heating	Water Heater - Temperature Setback	household	New	58.61	2	\$5.00	51%	75%	\$0.04	0.43	0.57	Illinois TRM
Multifamily	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	showerheads	New	27.41	10	\$19.30	16%	45%	\$0.08	2.85	3.57	RTF Workbook
Multifamily	Water Heating	Water Heater - Solar System	household	New	788.60	20	\$8,847.45	1%	10%	\$0.93	25.92	29.42	7th Power Plan
Multifamily	Interior Lighting	Interior Lighting - Occupancy Sensors	occ sens	New	75.27	8	\$99.16	2%	10%	\$0.16	2.43	3.89	Pacific Gas and Electric Research
Multifamily	Exterior Lighting	Exterior Lighting - Photosensor Control	ext fixt	New	12.54	15	\$10.19	0%	50%	\$0.07	4.60	7.51	Michigan Energy Measures Database
Multifamily	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	ext fixt pv	New	13.17	3	\$28.00	1%	30%	\$0.51	0.24	0.61	AEG Research
Multifamily	Exterior Lighting	Exterior Lighting - Timeclock Installation	ext fixt	New	9.03	10	\$19.15	0%	50%	\$0.21	2.58	4.62	Ontario Power TRM
Multifamily	Appliances	Refrigerator - Decommissioning and Recycling	household	New	278.64	6	\$143.58	0%	75%	\$0.09	15.85	17.07	PacificCorp '13-'14 Evaluation
Multifamily	Appliances	Freezer - Decommissioning and Recycling	household	New	271.88	5	\$143.58	0%	50%	\$0.11	1.27	1.37	PacificCorp '13-'14 Evaluation

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Multifamily	Electronics	Advanced Power Strips - Tier 1	smart strip	New	38.92	5	\$15.83	8%	25%	\$0.09	7.09	6.46	7th Power Plan
Multifamily	Electronics	Advanced Power Strips - Tier 2	smart strip	New	242.83	5	\$50.49	8%	25%	\$0.05	44.24	40.40	7th Power Plan
Multifamily	Miscellaneous	Pool Pump - Timer	household	New	0.00	10	\$85.22	1%	75%	\$0.00	0.00	0.00	Ontario Power TRM
Multifamily	Miscellaneous	Pool Heater - Solar Water Heating System	household	New	0.00	20	\$3,767.92	0%	30%	\$0.00	0.00	0.00	AEG Research
Multifamily	Cooling	ENERGY STAR Home Design	household	New	33.89	20	\$4,253.40	15%	75%	\$0.46	25.84	26.09	RTF Workbook
Multifamily	Heating	ENERGY STAR Home Design	household	New	240.39	20	\$4,253.40	15%	75%	\$0.46	205.55	203.12	RTF Workbook
Multifamily	Water Heating	ENERGY STAR Home Design	household	New	337.28	20	\$4,253.40	15%	75%	\$0.46	118.78	133.13	RTF Workbook
Multifamily	Interior Lighting	ENERGY STAR Home Design	household	New	135.13	20	\$4,253.40	15%	75%	\$0.46	84.86	96.03	RTF Workbook
Multifamily	Cooling	Behavioral Programs	household	New	0.00	1	\$5.00	14%	14%	\$0.00	0.00	0.00	AEG Research
Multifamily	Heating	Behavioral Programs	household	New	0.00	1	\$5.00	14%	14%	\$0.00	0.00	0.00	AEG Research
Multifamily	Water Heating	Behavioral Programs	household	New	0.00	1	\$5.00	14%	14%	\$0.00	0.00	0.00	AEG Research
Multifamily	Interior Lighting	Behavioral Programs	household	New	0.00	1	\$5.00	14%	14%	\$0.00	0.00	0.00	AEG Research
Multifamily	Exterior Lighting	Behavioral Programs	household	New	0.00	1	\$5.00	14%	14%	\$0.00	0.00	0.00	AEG Research
Multifamily	Appliances	Behavioral Programs	household	New	0.00	1	\$5.00	14%	14%	\$0.00	0.00	0.00	AEG Research
Multifamily	Electronics	Behavioral Programs	household	New	0.00	1	\$5.00	14%	14%	\$0.00	0.00	0.00	AEG Research
Multifamily	Miscellaneous	Behavioral Programs	household	New	0.00	1	\$5.00	14%	14%	\$0.00	0.00	0.00	AEG Research
Multifamily	Interior Lighting	Interior Lighting - General Service CFLs	GSL lamp	New	6.52	9	-\$0.13	0%	44%	\$0.00	10.39	25.11	RTF Workbook
Multifamily	Interior Lighting	Interior Lighting - Exempted CFLs	Exempt lamp	New	9.05	5	-\$2.74	0%	44%	-\$0.05	1.11	1.73	RTF Workbook
Mobile Home	Cooling	Insulation - Ceiling Installation	sqft roof	Existing	0.26	25	\$2.16	10%	38%	\$0.32	464.58	545.30	7th Power Plan
Mobile Home	Heating	Insulation - Ceiling Installation	sqft roof	Existing	0.24	25	\$2.16	10%	38%	\$0.32	434.55	538.11	7th Power Plan
Mobile Home	Cooling	Insulation - Ceiling Upgrade	sqft roof	Existing	0.04	25	\$2.16	10%	38%	\$1.24	64.08	79.99	7th Power Plan
Mobile Home	Heating	Insulation - Ceiling Upgrade	sqft roof	Existing	0.08	25	\$2.16	10%	38%	\$1.24	152.83	197.68	7th Power Plan
Mobile Home	Cooling	Insulation - Radiant Barrier	sqft roof	Existing	0.22	15	\$0.67	4%	19%	\$0.04	207.48	233.32	AEG Research
Mobile Home	Heating	Insulation - Radiant Barrier	sqft roof	Existing	1.42	15	\$0.67	4%	19%	\$0.04	1,539.93	1,627.13	AEG Research

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Mobile Home	Cooling	Insulation - Wall Cavity Installation	sqft wall	Existing	0.03	25	\$1.42	40%	40%	\$0.07	0.00	0.00	7th Power Plan
Mobile Home	Heating	Insulation - Wall Cavity Installation	sqft wall	Existing	1.49	25	\$1.42	40%	40%	\$0.07	0.00	0.00	7th Power Plan
Mobile Home	Cooling	Insulation - Wall Sheathing	sqft wall	Existing	0.02	20	\$0.93	15%	15%	\$0.21	0.00	0.00	AEG-BEST
Mobile Home	Heating	Insulation - Wall Sheathing	sqft wall	Existing	0.33	20	\$0.93	15%	15%	\$0.21	0.00	0.00	AEG-BEST
Mobile Home	Cooling	Insulation - Floor Installation	sqft floor cs	Existing	-0.04	25	\$3.39	7%	30%	\$0.88	-28.10	-35.13	7th Power Plan
Mobile Home	Heating	Insulation - Floor Installation	sqft floor cs	Existing	0.31	25	\$3.39	7%	30%	\$0.88	233.22	300.83	7th Power Plan
Mobile Home	Cooling	Insulation - Floor Upgrade	sqft floor cs	Existing	0.00	25	\$3.39	7%	30%	\$1.84	0.00	0.00	7th Power Plan
Mobile Home	Heating	Insulation - Floor Upgrade	sqft floor cs	Existing	0.13	25	\$3.39	7%	30%	\$1.84	99.61	128.74	7th Power Plan
Mobile Home	Cooling	Insulation - Foundation	household	Existing	-30.76	70	\$1,241.19	0%	0%	\$0.15	0.00	0.00	RTF Workbook
Mobile Home	Heating	Insulation - Foundation	household	Existing	647.82	70	\$1,241.19	0%	0%	\$0.15	0.00	0.00	RTF Workbook
Mobile Home	Cooling	Insulation - Ducting	household	Existing	57.18	18	\$528.00	48%	60%	\$0.13	42.06	49.89	AEG-BEST
Mobile Home	Heating	Insulation - Ducting	household	Existing	270.24	18	\$528.00	48%	60%	\$0.13	261.36	323.46	AEG-BEST
Mobile Home	Cooling	Ducting - Repair and Sealing	household	Existing	66.67	20	\$769.57	30%	75%	\$0.04	191.60	216.17	7th Power Plan
Mobile Home	Heating	Ducting - Repair and Sealing	household	Existing	1,416.76	20	\$769.57	30%	75%	\$0.04	5,783.92	5,929.21	7th Power Plan
Mobile Home	Cooling	Building Shell - Infiltration Control	sqft home	Existing	0.01	25	\$3.18	66%	75%	\$1.41	5.51	6.90	7th Power Plan
Mobile Home	Heating	Building Shell - Infiltration Control	sqft home	Existing	0.15	25	\$3.18	66%	75%	\$1.41	174.19	225.59	7th Power Plan
Mobile Home	Cooling	Windows - High Efficiency/ENERGY STAR	sqft window	Existing	0.70	25	\$21.16	9%	75%	\$0.33	482.23	583.69	7th Power Plan
Mobile Home	Heating	Windows - High Efficiency/ENERGY STAR	sqft window	Existing	3.72	25	\$21.16	9%	75%	\$0.33	2,715.10	3,420.08	7th Power Plan
Mobile Home	Cooling	Windows - Install Reflective Film	sqft window	Existing	0.05	25	\$1.40	16%	75%	\$0.06	33.94	38.11	7th Power Plan
Mobile Home	Heating	Windows - Install Reflective Film	sqft window	Existing	1.51	25	\$1.40	16%	75%	\$0.06	1,073.85	1,144.85	7th Power Plan
Mobile Home	Cooling	Doors - Storm and Thermal	household	Existing	12.39	20	\$682.67	60%	80%	\$0.37	21.11	26.17	AEG-BEST
Mobile Home	Heating	Doors - Storm and Thermal	household	Existing	124.60	20	\$682.67	60%	80%	\$0.37	225.64	290.50	AEG-BEST

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Mobile Home	Cooling	Ductless Mini Split Heat Pump (Zonal)	household	Existing	94.53	15	\$3,448.86	0%	75%	\$0.18	153.49	176.97	7th Power Plan
Mobile Home	Heating	Ductless Mini Split Heat Pump (Zonal)	household	Existing	1,507.91	15	\$3,448.86	0%	75%	\$0.18	1,401.67	1,642.31	7th Power Plan
Mobile Home	Cooling	Ductless Mini Split Heat Pump (Ducted Forced Air)	household	Existing	119.20	15	\$3,517.21	0%	45%	\$0.06	189.61	211.88	7th Power Plan
Mobile Home	Heating	Ductless Mini Split Heat Pump (Ducted Forced Air)	household	Existing	5,263.13	15	\$3,517.21	0%	45%	\$0.06	14,040.94	14,668.55	7th Power Plan
Mobile Home	Cooling	Space Heating - Heat Recovery Ventilator	household	Existing	8.07	20	\$1,303.92	0%	0%	\$0.19	0.00	0.00	7th Power Plan
Mobile Home	Heating	Space Heating - Heat Recovery Ventilator	household	Existing	528.41	20	\$1,303.92	0%	0%	\$0.19	0.00	0.00	7th Power Plan
Mobile Home	Cooling	Furnace - Conversion to Air-Source Heat Pump	household	Existing	0.00	15	\$2,955.28	0%	0%	\$0.12	0.00	0.00	7th Power Plan
Mobile Home	Heating	Furnace - Conversion to Air-Source Heat Pump	household	Existing	2,202.00	15	\$2,955.28	0%	0%	\$0.12	0.00	0.00	7th Power Plan
Mobile Home	Cooling	Room AC - Removal of Second Unit	household	Existing	488.77	3	\$18.00	0%	50%	\$0.01	559.71	596.21	CA DEER
Mobile Home	Cooling	Central AC - Maintenance and Tune-Up	household	Existing	68.55	6	\$275.74	7%	75%	\$0.65	151.95	175.10	Illinois TRM
Mobile Home	Cooling	Central Heat Pump - Controls and Commissioning	household	Existing	-4.69	15	\$581.99	65%	75%	\$0.14	-1.28	-1.49	7th Power Plan
Mobile Home	Heating	Central Heat Pump - Controls and Commissioning	household	Existing	355.21	15	\$581.99	65%	75%	\$0.14	95.53	113.78	7th Power Plan
Mobile Home	Cooling	Ceiling Fan - ENERGY STAR	ceiling fans	Existing	8.72	10	\$47.23	40%	75%	\$0.61	51.44	58.73	ENERGY STAR
Mobile Home	Cooling	Whole-House Fan - Installation	household	Existing	45.56	20	\$714.44	15%	40%	\$1.24	68.94	86.63	California Public Utilities Commission
Mobile Home	Cooling	Thermostat - WiFi/Interactive	household	Existing	63.02	10	\$256.67	5%	75%	\$0.07	397.28	445.11	7th Power Plan
Mobile Home	Heating	Thermostat - WiFi/Interactive	household	Existing	372.32	10	\$256.67	5%	75%	\$0.07	2,471.35	2,873.57	7th Power Plan
Mobile Home	Water Heating	Water Heater - Drainwater Heat Recovery	household	Existing	179.48	40	\$837.67	0%	0%	\$0.33	0.00	0.00	7th Power Plan
Mobile Home	Water Heating	Water Heater - Faucet Aerators	aerators	Existing	93.67	15	\$5.13	28%	50%	-\$0.17	374.02	457.67	7th Power Plan

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Mobile Home	Water Heating	Water Heater - Low-Flow Showerheads	showerheads	Existing	203.22	10	\$26.56	42%	75%	-\$0.11	797.59	1,056.48	7th Power Plan
Mobile Home	Water Heating	Water Heater - Pipe Insulation	feet pipe	Existing	20.41	15	\$3.26	12%	75%	\$0.02	588.80	769.85	Mid-Atlantic TRM
Mobile Home	Water Heating	Water Heater - Desuperheater	household	Existing	1,102.72	20	\$1,136.89	0%	0%	\$0.09	0.00	0.00	RTF Workbook
Mobile Home	Water Heating	Water Heater - Temperature Setback	household	Existing	61.12	2	\$5.00	41%	75%	\$0.03	189.16	255.71	Illinois TRM
Mobile Home	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	showerheads	Existing	26.28	10	\$19.30	16%	45%	\$0.09	90.73	122.40	RTF Workbook
Mobile Home	Water Heating	Water Heater - Solar System	household	Existing	817.54	20	\$8,847.45	0%	20%	\$0.89	915.15	1,144.98	7th Power Plan
Mobile Home	Interior Lighting	Interior Lighting - Occupancy Sensors	occ sens	Existing	74.99	8	\$99.16	0%	10%	\$0.18	64.57	107.56	Pacific Gas and Electric Research
Mobile Home	Exterior Lighting	Exterior Lighting - Photosensor Control	ext fixt	Existing	13.64	15	\$10.19	7%	50%	\$0.07	44.04	112.21	Michigan Energy Measures Database
Mobile Home	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	ext fixt pv	Existing	16.59	3	\$28.00	1%	30%	\$0.42	16.75	47.73	AEG Research
Mobile Home	Exterior Lighting	Exterior Lighting - Timeclock Installation	ext fixt	Existing	8.82	10	\$19.15	0%	50%	\$0.23	31.54	85.55	Ontario Power TRM
Mobile Home	Appliances	Refrigerator - Decommissioning and Recycling	household	Existing	297.13	6	\$143.58	0%	75%	\$0.09	672.06	750.71	PacifiCorp '13-'14 Evaluation
Mobile Home	Appliances	Freezer - Decommissioning and Recycling	household	Existing	287.56	5	\$143.58	0%	50%	\$0.11	811.74	920.49	PacifiCorp '13-'14 Evaluation
Mobile Home	Electronics	Advanced Power Strips - Tier 1	smart strip	Existing	28.72	5	\$15.83	8%	25%	\$0.12	117.79	115.12	7th Power Plan
Mobile Home	Electronics	Advanced Power Strips - Tier 2	smart strip	Existing	181.69	5	\$50.49	8%	25%	\$0.06	761.48	727.38	7th Power Plan
Mobile Home	Miscellaneous	Pool Pump - Timer	household	Existing	446.71	10	\$85.22	1%	75%	\$0.03	188.65	195.50	Ontario Power TRM
Mobile Home	Miscellaneous	Pool Heater - Solar Water Heating System	household	Existing	1,891.55	20	\$3,767.92	0%	30%	\$0.18	39.40	41.01	AEG Research
Mobile Home	Cooling	ENERGY STAR Home Design	household	Existing	71.42	20	\$4,253.40	0%	0%	\$0.28	0.00	0.00	RTF Workbook
Mobile Home	Heating	ENERGY STAR Home Design	household	Existing	602.25	20	\$4,253.40	0%	0%	\$0.28	0.00	0.00	RTF Workbook
Mobile Home	Water Heating	ENERGY STAR Home Design	household	Existing	344.32	20	\$4,253.40	0%	0%	\$0.28	0.00	0.00	RTF Workbook

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Mobile Home	Interior Lighting	ENERGY STAR Home Design	household	Existing	133.60	20	\$4,253.40	0%	0%	\$0.28	0.00	0.00	RTF Workbook
Mobile Home	Cooling	Behavioral Programs	household	Existing	0.00	1	\$5.00	14%	14%	\$0.00	0.00	0.00	AEG Research
Mobile Home	Heating	Behavioral Programs	household	Existing	0.00	1	\$5.00	14%	14%	\$0.00	0.00	0.00	AEG Research
Mobile Home	Water Heating	Behavioral Programs	household	Existing	0.00	1	\$5.00	14%	14%	\$0.00	0.00	0.00	AEG Research
Mobile Home	Interior Lighting	Behavioral Programs	household	Existing	0.00	1	\$5.00	14%	14%	\$0.00	0.00	0.00	AEG Research
Mobile Home	Exterior Lighting	Behavioral Programs	household	Existing	0.00	1	\$5.00	14%	14%	\$0.00	0.00	0.00	AEG Research
Mobile Home	Appliances	Behavioral Programs	household	Existing	0.00	1	\$5.00	14%	14%	\$0.00	0.00	0.00	AEG Research
Mobile Home	Electronics	Behavioral Programs	household	Existing	0.00	1	\$5.00	14%	14%	\$0.00	0.00	0.00	AEG Research
Mobile Home	Miscellaneous	Behavioral Programs	household	Existing	0.00	1	\$5.00	14%	14%	\$0.00	0.00	0.00	AEG Research
Mobile Home	Interior Lighting	Interior Lighting - General Service CFLs	GSL lamp	Existing	7.07	9	-\$0.13	0%	35%	\$0.00	61.87	156.21	RTF Workbook
Mobile Home	Interior Lighting	Interior Lighting - Exempted CFLs	Exempt lamp	Existing	8.20	5	-\$2.74	0%	35%	-\$0.05	21.70	38.28	RTF Workbook
Mobile Home	Cooling	Insulation - Ceiling Installation	sqft roof	New	0.29	25	\$2.16	29%	38%	\$0.31	7.69	7.91	7th Power Plan
Mobile Home	Heating	Insulation - Ceiling Installation	sqft roof	New	0.26	25	\$2.16	29%	38%	\$0.31	7.82	8.03	7th Power Plan
Mobile Home	Cooling	Insulation - Ceiling Upgrade	sqft roof	New	0.04	25	\$2.16	29%	38%	\$1.21	1.15	1.19	7th Power Plan
Mobile Home	Heating	Insulation - Ceiling Upgrade	sqft roof	New	0.10	25	\$2.16	29%	38%	\$1.21	2.85	2.98	7th Power Plan
Mobile Home	Cooling	Insulation - Radiant Barrier	sqft roof	New	0.23	15	\$0.67	1%	5%	\$0.04	2.46	2.53	AEG Research
Mobile Home	Heating	Insulation - Radiant Barrier	sqft roof	New	1.47	15	\$0.67	1%	5%	\$0.04	17.98	18.27	AEG Research
Mobile Home	Cooling	Insulation - Wall Cavity Installation	sqft wall	New	0.04	25	\$1.42	68%	80%	\$0.07	2.57	2.64	7th Power Plan
Mobile Home	Heating	Insulation - Wall Cavity Installation	sqft wall	New	1.56	25	\$1.42	68%	80%	\$0.07	127.07	129.03	7th Power Plan
Mobile Home	Cooling	Insulation - Wall Sheathing	sqft wall	New	0.02	20	\$0.93	15%	20%	\$0.21	0.69	0.71	AEG-BEST
Mobile Home	Heating	Insulation - Wall Sheathing	sqft wall	New	0.36	20	\$0.93	15%	20%	\$0.21	11.97	12.31	AEG-BEST
Mobile Home	Cooling	Insulation - Floor Installation	sqft floor cs	New	-0.05	25	\$3.39	33%	38%	\$0.88	-0.28	-0.29	7th Power Plan
Mobile Home	Heating	Insulation - Floor Installation	sqft floor cs	New	0.34	25	\$3.39	33%	38%	\$0.88	2.41	2.52	7th Power Plan
Mobile Home	Cooling	Insulation - Floor Upgrade	sqft floor cs	New	0.00	25	\$3.39	33%	38%	\$1.82	0.00	0.00	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Mobile Home	Heating	Insulation - Floor Upgrade	sqft floor cs	New	0.15	25	\$3.39	33%	38%	\$1.82	1.03	1.08	7th Power Plan
Mobile Home	Cooling	Insulation - Foundation	household	New	-32.02	70	\$1,241.19	0%	0%	\$0.15	0.00	0.00	RTF Workbook
Mobile Home	Heating	Insulation - Foundation	household	New	651.81	70	\$1,241.19	0%	0%	\$0.15	0.00	0.00	RTF Workbook
Mobile Home	Cooling	Insulation - Ducting	household	New	64.87	18	\$528.00	49%	80%	\$0.12	6.35	6.57	AEG-BEST
Mobile Home	Heating	Insulation - Ducting	household	New	317.82	18	\$528.00	49%	80%	\$0.12	42.30	43.45	AEG-BEST
Mobile Home	Cooling	Ducting - Repair and Sealing	household	New	68.66	20	\$769.57	29%	75%	\$0.04	9.79	10.15	7th Power Plan
Mobile Home	Heating	Ducting - Repair and Sealing	household	New	1,426.64	20	\$769.57	29%	75%	\$0.04	277.86	282.95	7th Power Plan
Mobile Home	Cooling	Building Shell - Infiltration Control	sqft home	New	0.01	25	\$3.18	75%	75%	\$1.39	0.00	0.00	7th Power Plan
Mobile Home	Heating	Building Shell - Infiltration Control	sqft home	New	0.17	25	\$3.18	75%	75%	\$1.39	0.00	0.00	7th Power Plan
Mobile Home	Cooling	Windows - High Efficiency/ENERGY STAR	sqft window	New	0.80	25	\$21.16	56%	75%	\$0.32	7.54	7.75	7th Power Plan
Mobile Home	Heating	Windows - High Efficiency/ENERGY STAR	sqft window	New	4.14	25	\$21.16	56%	75%	\$0.32	44.97	46.22	7th Power Plan
Mobile Home	Cooling	Windows - Install Reflective Film	sqft window	New	0.06	25	\$1.40	16%	75%	\$0.06	1.65	1.69	7th Power Plan
Mobile Home	Heating	Windows - Install Reflective Film	sqft window	New	1.57	25	\$1.40	16%	75%	\$0.06	52.27	53.09	7th Power Plan
Mobile Home	Cooling	Doors - Storm and Thermal	household	New	5.02	20	\$682.67	70%	80%	\$0.75	0.20	0.21	AEG-BEST
Mobile Home	Heating	Doors - Storm and Thermal	household	New	69.40	20	\$682.67	70%	80%	\$0.75	3.21	3.36	AEG-BEST
Mobile Home	Cooling	Ductless Mini Split Heat Pump (Zonal)	household	New	95.35	15	\$3,448.86	0%	75%	\$0.18	6.90	7.10	7th Power Plan
Mobile Home	Heating	Ductless Mini Split Heat Pump (Zonal)	household	New	1,632.53	15	\$3,448.86	0%	75%	\$0.18	80.75	80.74	7th Power Plan
Mobile Home	Cooling	Ductless Mini Split Heat Pump (Ducted Forced Air)	household	New	116.55	15	\$3,517.21	0%	45%	\$0.06	11.14	11.52	7th Power Plan
Mobile Home	Heating	Ductless Mini Split Heat Pump (Ducted Forced Air)	household	New	5,390.27	15	\$3,517.21	0%	45%	\$0.06	849.77	852.07	7th Power Plan
Mobile Home	Cooling	Space Heating - Heat Recovery Ventilator	household	New	8.54	20	\$1,303.92	0%	0%	\$0.19	0.00	0.00	7th Power Plan
Mobile Home	Heating	Space Heating - Heat Recovery Ventilator	household	New	580.18	20	\$1,303.92	0%	0%	\$0.19	0.00	0.00	7th Power Plan
Mobile Home	Cooling	Furnace - Conversion to Air-Source Heat Pump	household	New	0.00	15	\$2,955.28	0%	0%	\$0.12	0.00	0.00	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Mobile Home	Heating	Furnace - Conversion to Air-Source Heat Pump	household	New	2,328.01	15	\$2,955.28	0%	0%	\$0.12	0.00	0.00	7th Power Plan
Mobile Home	Cooling	Room AC - Removal of Second Unit	household	New	453.77	3	\$18.00	25%	50%	\$0.01	1.92	2.02	CA DEER
Mobile Home	Cooling	Central AC - Maintenance and Tune-Up	household	New	71.81	6	\$275.74	45%	75%	\$0.68	1.03	1.10	Illinois TRM
Mobile Home	Cooling	Central Heat Pump - Controls and Commissioning	household	New	-5.35	15	\$581.99	25%	75%	\$0.14	-0.44	-0.46	7th Power Plan
Mobile Home	Heating	Central Heat Pump - Controls and Commissioning	household	New	397.89	15	\$581.99	25%	75%	\$0.14	33.58	33.61	7th Power Plan
Mobile Home	Cooling	Ceiling Fan - ENERGY STAR	ceiling fans	New	11.12	10	\$47.23	50%	75%	\$0.53	1.61	1.66	ENERGY STAR
Mobile Home	Cooling	Whole-House Fan - Installation	household	New	50.62	20	\$714.44	15%	40%	\$1.22	3.91	4.10	California Public Utilities Commission
Mobile Home	Cooling	Thermostat - WiFi/Interactive	household	New	68.54	10	\$256.67	5%	75%	\$0.07	20.63	21.18	7th Power Plan
Mobile Home	Heating	Thermostat - WiFi/Interactive	household	New	403.25	10	\$256.67	5%	75%	\$0.07	139.81	142.02	7th Power Plan
Mobile Home	Water Heating	Water Heater - Drainwater Heat Recovery	household	New	175.74	40	\$837.67	1%	10%	\$0.34	12.98	14.71	7th Power Plan
Mobile Home	Water Heating	Water Heater - Faucet Aerators	aerators	New	98.08	15	\$5.13	29%	50%	-\$0.16	28.92	34.22	7th Power Plan
Mobile Home	Water Heating	Water Heater - Low-Flow Showerheads	showerheads	New	215.30	10	\$26.56	43%	75%	-\$0.10	30.62	38.89	7th Power Plan
Mobile Home	Water Heating	Water Heater - Pipe Insulation	feet pipe	New	19.54	15	\$3.26	12%	75%	\$0.02	26.77	33.29	Mid-Atlantic TRM
Mobile Home	Water Heating	Water Heater - Desuperheater	household	New	1,012.75	20	\$1,136.89	0%	0%	\$0.09	0.00	0.00	RTF Workbook
Mobile Home	Water Heating	Water Heater - Temperature Setback	household	New	59.82	2	\$5.00	51%	75%	\$0.04	0.55	0.74	Illinois TRM
Mobile Home	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	showerheads	New	28.16	10	\$19.30	16%	45%	\$0.08	3.68	4.67	RTF Workbook
Mobile Home	Water Heating	Water Heater - Solar System	household	New	804.85	20	\$8,847.45	0%	20%	\$0.91	73.74	84.56	7th Power Plan
Mobile Home	Interior Lighting	Interior Lighting - Occupancy Sensors	occ sens	New	72.56	8	\$99.16	0%	10%	\$0.17	1.94	2.84	Pacific Gas and Electric Research

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Mobile Home	Exterior Lighting	Exterior Lighting - Photosensor Control	ext fixt	New	11.99	15	\$10.19	11%	50%	\$0.07	2.14	3.60	Michigan Energy Measures Database
Mobile Home	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	ext fixt pv	New	12.87	3	\$28.00	1%	30%	\$0.54	0.15	0.39	AEG Research
Mobile Home	Exterior Lighting	Exterior Lighting - Timeclock Installation	ext fixt	New	8.80	10	\$19.15	3%	50%	\$0.22	1.49	2.77	Ontario Power TRM
Mobile Home	Appliances	Refrigerator - Decommissioning and Recycling	household	New	278.49	6	\$143.58	0%	75%	\$0.09	29.02	31.26	PacifiCorp '13-'14 Evaluation
Mobile Home	Appliances	Freezer - Decommissioning and Recycling	household	New	270.93	5	\$143.58	0%	50%	\$0.11	27.44	29.60	PacifiCorp '13-'14 Evaluation
Mobile Home	Electronics	Advanced Power Strips - Tier 1	smart strip	New	37.84	5	\$15.83	8%	25%	\$0.09	4.43	4.05	7th Power Plan
Mobile Home	Electronics	Advanced Power Strips - Tier 2	smart strip	New	235.70	5	\$50.49	8%	25%	\$0.05	27.58	25.28	7th Power Plan
Mobile Home	Miscellaneous	Pool Pump - Timer	household	New	476.11	10	\$85.22	1%	75%	\$0.02	9.59	9.72	Ontario Power TRM
Mobile Home	Miscellaneous	Pool Heater - Solar Water Heating System	household	New	1,844.75	20	\$3,767.92	0%	30%	\$0.19	2.17	2.19	AEG Research
Mobile Home	Cooling	ENERGY STAR Home Design	household	New	83.51	20	\$4,253.40	15%	75%	\$0.28	34.16	34.46	RTF Workbook
Mobile Home	Heating	ENERGY STAR Home Design	household	New	683.72	20	\$4,253.40	15%	75%	\$0.28	319.09	317.88	RTF Workbook
Mobile Home	Water Heating	ENERGY STAR Home Design	household	New	341.73	20	\$4,253.40	15%	75%	\$0.28	150.14	170.39	RTF Workbook
Mobile Home	Interior Lighting	ENERGY STAR Home Design	household	New	130.15	20	\$4,253.40	15%	75%	\$0.28	55.53	61.33	RTF Workbook
Mobile Home	Cooling	Behavioral Programs	household	New	0.00	1	\$5.00	14%	14%	\$0.00	0.00	0.00	AEG Research
Mobile Home	Heating	Behavioral Programs	household	New	0.00	1	\$5.00	14%	14%	\$0.00	0.00	0.00	AEG Research
Mobile Home	Water Heating	Behavioral Programs	household	New	0.00	1	\$5.00	14%	14%	\$0.00	0.00	0.00	AEG Research
Mobile Home	Interior Lighting	Behavioral Programs	household	New	0.00	1	\$5.00	14%	14%	\$0.00	0.00	0.00	AEG Research
Mobile Home	Exterior Lighting	Behavioral Programs	household	New	0.00	1	\$5.00	14%	14%	\$0.00	0.00	0.00	AEG Research
Mobile Home	Appliances	Behavioral Programs	household	New	0.00	1	\$5.00	14%	14%	\$0.00	0.00	0.00	AEG Research
Mobile Home	Electronics	Behavioral Programs	household	New	0.00	1	\$5.00	14%	14%	\$0.00	0.00	0.00	AEG Research
Mobile Home	Miscellaneous	Behavioral Programs	household	New	0.00	1	\$5.00	14%	14%	\$0.00	0.00	0.00	AEG Research
Mobile Home	Interior Lighting	Interior Lighting - General Service CFLs	GSL lamp	New	6.27	9	-\$0.13	0%	35%	\$0.00	4.18	9.22	RTF Workbook

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Mobile Home	Interior Lighting	Interior Lighting - Exempted CFLs	Exempt lamp	New	8.16	5	-\$2.74	0%	35%	-\$0.05	1.29	2.04	RTF Workbook

Wyoming Residential Measures Assumptions

Table H-5 Comparison of 7th Plan and RTF Residential Measures in Wyoming

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Single Family	Cooling	Central AC	12 kBtu/hr	Existing	44.91	15	\$647.54	32%	at stock turnover	\$1.57	2,286.39	2,286.39	AEG-BEST
Single Family	Cooling	Room AC	10.5 kBtu/hr	Existing	53.02	12	\$247.96	13%	at stock turnover	\$0.58	375.75	375.75	AEG-BEST
Single Family	Cooling	Evaporative AC	1 sqft	Existing	0.10	15	\$0.11	16%	at stock turnover	\$0.12	1,259.92	1,259.92	New Buildings Institute Study, 2006
Single Family	Cooling	Air-Source Heat Pump	36 kBtu/hr	Existing	63.54	15	\$218.37	2%	at stock turnover	\$0.04	78.39	78.39	AEG-BEST
Single Family	Heating	Air-Source Heat Pump	36 kBtu/hr	Existing	565.97	15	\$218.37	2%	at stock turnover	\$0.04	698.21	698.21	AEG-BEST
Single Family	Cooling	Geothermal Heat Pump	36 kBtu/hr	Existing	456.26	20	\$2,531.24	0%	at stock turnover	\$0.14	0.28	0.28	AEG-BEST
Single Family	Heating	Geothermal Heat Pump	36 kBtu/hr	Existing	1,311.44	20	\$2,531.24	0%	at stock turnover	\$0.14	0.81	0.81	AEG-BEST
Single Family	Heating	Electric Furnace	36 kBtu/hr	Existing	0.00	18	\$0.00	4%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Single Family	Heating	Electric Room Heat	3.5 kBtu/hr	Existing	0.00	18	\$0.00	10%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Single Family	Water Heating	Water Heater (<= 55 Gal)	50 gallons	Existing	1,170.88	13	\$743.91	13%	50%	\$0.08	6,204.09	6,204.09	7th Power Plan
Single Family	Water Heating	Water Heater (<= 55 Gal)	50 gallons	Existing	1,284.22	13	\$1,215.07	8%	30%	\$0.11	4,461.62	4,461.62	7th Power Plan
Single Family	Water Heating	Water Heater (<= 55 Gal)	50 gallons	Existing	1,858.17	13	\$1,573.80	5%	20%	\$0.10	4,308.08	4,308.08	Annual Energy Outlook, 2015
Single Family	Water Heating	Water Heater (> 55 Gal)	50 gallons	Existing	1,024.56	13	\$0.00	2%	50%	\$0.00	0.00	0.00	7th Power Plan
Single Family	Water Heating	Water Heater (> 55 Gal)	50 gallons	Existing	209.95	13	\$471.15	1%	30%	\$0.33	103.03	103.03	7th Power Plan
Single Family	Water Heating	Water Heater (> 55 Gal)	50 gallons	Existing	662.78	13	\$829.89	1%	20%	\$0.16	254.58	254.58	Annual Energy Outlook, 2015
Single Family	Interior Lighting	General Service Screw-In	1 lamps	Existing	12.60	12	\$6.13	100%	at stock turnover	\$0.04	15,625.60	23,323.59	EIA 2011-2012 Ref. Case
Single Family	Interior Lighting	Linear Lighting	1 lamps	Existing	5.04	17	\$35.92	100%	at stock turnover	\$0.73	977.84	977.84	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Single Family	Interior Lighting	Exempted Screw-In	1 lamps	Existing	38.70	10	\$12.32	100%	at stock turnover	-\$0.01	16,429.35	15,836.39	EIA 2011-2012 Ref. Case
Single Family	Exterior Lighting	Screw-in	1 lamps	Existing	24.11	10	\$6.13	100%	at stock turnover	\$0.03	6,097.24	9,000.98	EIA 2011-2012 Ref. Case
Single Family	Appliances	Refrigerator	1 units	Existing	107.76	15	\$240.28	100%	at stock turnover	\$0.24	3,662.18	3,662.18	7th Power Plan
Single Family	Appliances	Second Refrigerator	1 units	Existing	150.46	15	\$240.28	36%	at stock turnover	\$0.17	1,795.92	1,795.92	7th Power Plan
Single Family	Appliances	Freezer	1 units	Existing	122.95	22	\$83.03	70%	at stock turnover	\$0.07	1,922.09	1,922.09	RTF Workbook
Single Family	Appliances	Clothes Washer	1 units	Existing	9.20	14	\$194.20	98%	at stock turnover	\$2.39	486.49	486.49	7th Power Plan
Single Family	Appliances	Clothes Dryer	1 units	Existing	151.75	16	\$308.00	91%	at stock turnover	\$0.21	3,642.15	3,642.15	7th Power Plan
Single Family	Appliances	Dishwasher	1 units	Existing	2.15	15	\$6.36	84%	at stock turnover	\$0.32	70.56	70.56	7th Power Plan
Single Family	Appliances	Stove/Oven	1 units	Existing	166.70	20	\$307.09	75%	at stock turnover	\$0.17	4,845.49	4,845.49	7th Power Plan
Single Family	Appliances	Microwave	1 units	Existing	8.12	11	\$4.63	98%	at stock turnover	\$0.07	469.97	469.97	7th Power Plan
Single Family	Electronics	Personal Computers	1 units	Existing	57.37	5	\$14.17	95%	at stock turnover	\$0.06	926.84	926.84	7th Power Plan
Single Family	Electronics	Monitor	1 units	Existing	56.18	8	\$8.21	115%	at stock turnover	\$0.02	523.64	523.64	7th Power Plan
Single Family	Electronics	Laptops	1 units	Existing	13.88	4	\$57.18	150%	at stock turnover	\$1.10	430.39	430.39	7th Power Plan
Single Family	Electronics	Printer/Fax/Copier	1 units	Existing	19.33	5	\$0.01	128%	at stock turnover	\$0.00	83.98	83.98	ENERGY STAR
Single Family	Electronics	TVs	1 units	Existing	23.82	6	\$0.01	235%	at stock turnover	\$0.00	492.75	492.75	ENERGY STAR
Single Family	Electronics	Set-top Boxes/DVRs	1 units	Existing	64.81	5	\$0.00	191%	at stock turnover	\$0.00	0.00	0.00	Voluntary Agreement
Single Family	Electronics	Devices and Gadgets	1 units	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Single Family	Miscellaneous	Electric Vehicles	1 units	Existing	116.75	10	\$770.00	0%	at stock turnover	\$0.90	38.08	38.08	7th Power Plan
Single Family	Miscellaneous	Pool Heater	1 units	Existing	3,864.38	15	\$3,546.07	0%	at stock turnover	\$0.10	265.32	265.32	AEG Research

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Single Family	Miscellaneous	Pool Pump	1 units	Existing	702.98	15	\$872.94	1%	at stock turnover	\$0.14	390.52	390.52	Southern California Edison
Single Family	Miscellaneous	Hot Tub/Spa	1 units	Existing	169.51	15	\$350.00	7%	at stock turnover	\$0.23	534.94	534.94	AEG Research
Single Family	Miscellaneous	Furnace Fan	1 units	Existing	219.05	20	\$97.00	60%	at stock turnover	\$0.04	-277.21	192.64	DOE Rule: EERE-2010-BT-STD-0011
Single Family	Miscellaneous	Well Pump	1 units	Existing	0.00	5	\$0.00	21%	at stock turnover	\$0.00	0.00	0.00	N/A
Single Family	Miscellaneous	Miscellaneous	1 units	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Single Family	Cooling	Central AC	12 kBtu/hr	New	66.00	15	\$647.54	44%	at stock turnover	\$1.07	913.74	913.74	AEG-BEST
Single Family	Cooling	Room AC	10.5 kBtu/hr	New	27.03	12	\$247.96	3%	at stock turnover	\$1.14	14.08	14.08	AEG-BEST
Single Family	Cooling	Evaporative AC	1 sqft	New	0.00	15	\$0.11	0%	at stock turnover	\$0.00	0.00	0.00	New Buildings Institute Study, 2006
Single Family	Cooling	Air-Source Heat Pump	36 kBtu/hr	New	97.78	15	\$218.37	2%	at stock turnover	\$0.03	28.27	28.27	AEG-BEST
Single Family	Heating	Air-Source Heat Pump	36 kBtu/hr	New	688.62	15	\$218.37	2%	at stock turnover	\$0.03	198.97	198.97	AEG-BEST
Single Family	Cooling	Geothermal Heat Pump	36 kBtu/hr	New	456.33	20	\$2,531.24	0%	at stock turnover	\$0.14	0.05	0.05	AEG-BEST
Single Family	Heating	Geothermal Heat Pump	36 kBtu/hr	New	1,297.07	20	\$2,531.24	0%	at stock turnover	\$0.14	0.15	0.15	AEG-BEST
Single Family	Heating	Electric Furnace	36 kBtu/hr	New	0.00	18	\$0.00	6%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Single Family	Heating	Electric Room Heat	3.5 kBtu/hr	New	0.00	18	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Single Family	Water Heating	Water Heater (<= 55 Gal)	50 gallons	New	1,171.07	13	\$743.91	8%	50%	\$0.08	630.58	630.58	7th Power Plan
Single Family	Water Heating	Water Heater (<= 55 Gal)	50 gallons	New	1,279.21	13	\$1,215.07	5%	30%	\$0.11	453.85	453.85	7th Power Plan
Single Family	Water Heating	Water Heater (<= 55 Gal)	50 gallons	New	1,853.27	13	\$1,573.80	3%	20%	\$0.10	438.78	438.78	Annual Energy Outlook, 2015
Single Family	Water Heating	Water Heater (> 55 Gal)	50 gallons	New	1,024.56	13	\$0.00	1%	50%	\$0.00	0.00	0.00	7th Power Plan
Single Family	Water Heating	Water Heater (> 55 Gal)	50 gallons	New	209.75	13	\$471.15	1%	30%	\$0.33	15.22	15.22	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Single Family	Water Heating	Water Heater (> 55 Gal)	50 gallons	New	662.57	13	\$829.89	1%	20%	\$0.16	37.61	37.61	Annual Energy Outlook, 2015
Single Family	Interior Lighting	General Service Screw-In	1 lamps	New	12.92	12	\$6.13	100%	at stock turnover	\$0.04	2,832.15	3,323.02	EIA 2011-2012 Ref. Case
Single Family	Interior Lighting	Linear Lighting	1 lamps	New	5.58	17	\$37.81	100%	at stock turnover	\$0.69	211.67	211.67	7th Power Plan
Single Family	Interior Lighting	Exempted Screw-In	1 lamps	New	38.70	10	\$12.32	100%	at stock turnover	-\$0.01	2,947.27	2,900.46	EIA 2011-2012 Ref. Case
Single Family	Exterior Lighting	Screw-in	1 lamps	New	24.69	10	\$6.13	100%	at stock turnover	\$0.03	1,104.73	1,294.67	EIA 2011-2012 Ref. Case
Single Family	Appliances	Refrigerator	1 units	New	107.76	15	\$240.28	100%	at stock turnover	\$0.24	742.92	742.92	7th Power Plan
Single Family	Appliances	Second Refrigerator	1 units	New	150.46	15	\$240.28	27%	at stock turnover	\$0.17	272.82	272.82	7th Power Plan
Single Family	Appliances	Freezer	1 units	New	122.95	22	\$83.03	54%	at stock turnover	\$0.07	279.60	279.60	RTF Workbook
Single Family	Appliances	Clothes Washer	1 units	New	9.20	14	\$194.20	99%	at stock turnover	\$2.39	84.13	84.13	7th Power Plan
Single Family	Appliances	Clothes Dryer	1 units	New	151.75	16	\$308.00	90%	at stock turnover	\$0.21	682.27	682.27	7th Power Plan
Single Family	Appliances	Dishwasher	1 units	New	2.15	15	\$6.36	101%	at stock turnover	\$0.32	12.53	12.53	7th Power Plan
Single Family	Appliances	Stove/Oven	1 units	New	166.70	20	\$307.09	62%	at stock turnover	\$0.17	820.13	820.13	7th Power Plan
Single Family	Appliances	Microwave	1 units	New	8.12	11	\$4.63	98%	at stock turnover	\$0.07	78.64	78.64	7th Power Plan
Single Family	Electronics	Personal Computers	1 units	New	57.37	5	\$14.17	78%	at stock turnover	\$0.06	100.78	100.78	7th Power Plan
Single Family	Electronics	Monitor	1 units	New	56.18	8	\$8.21	93%	at stock turnover	\$0.02	66.34	66.34	7th Power Plan
Single Family	Electronics	Laptops	1 units	New	13.88	4	\$57.18	248%	at stock turnover	\$1.10	75.74	75.74	7th Power Plan
Single Family	Electronics	Printer/Fax/Copier	1 units	New	19.33	5	\$0.01	188%	at stock turnover	\$0.00	18.20	18.20	ENERGY STAR
Single Family	Electronics	TVs	1 units	New	23.82	6	\$0.01	293%	at stock turnover	\$0.00	96.51	96.51	ENERGY STAR
Single Family	Electronics	Set-top Boxes/DVRs	1 units	New	64.81	5	\$0.00	239%	at stock turnover	\$0.00	0.00	0.00	Voluntary Agreement

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Single Family	Electronics	Devices and Gadgets	1 units	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Single Family	Miscellaneous	Electric Vehicles	1 units	New	116.75	10	\$770.00	0%	at stock turnover	\$0.90	7.31	7.31	7th Power Plan
Single Family	Miscellaneous	Pool Heater	1 units	New	3,864.38	15	\$3,546.07	0%	at stock turnover	\$0.10	50.35	50.35	AEG Research
Single Family	Miscellaneous	Pool Pump	1 units	New	702.98	15	\$872.94	1%	at stock turnover	\$0.14	74.12	74.12	Southern California Edison
Single Family	Miscellaneous	Hot Tub/Spa	1 units	New	169.51	15	\$350.00	7%	at stock turnover	\$0.23	103.20	103.20	AEG Research
Single Family	Miscellaneous	Furnace Fan	1 units	New	219.05	20	\$97.00	60%	at stock turnover	\$0.04	-60.28	41.89	DOE Rule: EERE-2010-BT-STD-0011
Single Family	Miscellaneous	Well Pump	1 units	New	0.00	5	\$0.00	34%	at stock turnover	\$0.00	0.00	0.00	N/A
Single Family	Miscellaneous	Miscellaneous	1 units	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Multifamily	Cooling	Central AC	12 kBtu/hr	Existing	43.81	15	\$647.54	32%	at stock turnover	\$1.61	194.25	194.25	AEG-BEST
Multifamily	Cooling	Room AC	10.5 kBtu/hr	Existing	44.24	12	\$247.96	13%	at stock turnover	\$0.69	95.94	95.94	AEG-BEST
Multifamily	Cooling	Evaporative AC	1 sqft	Existing	0.09	15	\$0.11	16%	at stock turnover	\$0.14	13.49	13.49	New Buildings Institute Study, 2006
Multifamily	Cooling	Air-Source Heat Pump	36 kBtu/hr	Existing	47.65	15	\$218.37	2%	at stock turnover	\$0.12	3.41	3.41	AEG-BEST
Multifamily	Heating	Air-Source Heat Pump	36 kBtu/hr	Existing	146.54	15	\$218.37	2%	at stock turnover	\$0.12	10.47	10.47	AEG-BEST
Multifamily	Cooling	Geothermal Heat Pump	36 kBtu/hr	Existing	0.00	20	\$2,531.24	0%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Multifamily	Heating	Geothermal Heat Pump	36 kBtu/hr	Existing	0.00	20	\$2,531.24	0%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Multifamily	Heating	Electric Furnace	36 kBtu/hr	Existing	0.00	18	\$0.00	4%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Multifamily	Heating	Electric Room Heat	3.5 kBtu/hr	Existing	0.00	18	\$0.00	10%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Multifamily	Water Heating	Water Heater (<= 55 Gal)	50 gallons	Existing	756.05	13	\$743.91	13%	50%	\$0.12	1,416.87	1,416.87	7th Power Plan
Multifamily	Water Heating	Water Heater (<= 55 Gal)	50 gallons	Existing	825.65	13	\$1,215.07	8%	30%	\$0.17	1,019.81	1,019.81	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Multifamily	Water Heating	Water Heater (<= 55 Gal)	50 gallons	Existing	1,196.24	13	\$1,573.80	5%	20%	\$0.16	986.03	986.03	Annual Energy Outlook, 2015
Multifamily	Water Heating	Water Heater (> 55 Gal)	50 gallons	Existing	661.41	13	\$0.00	2%	50%	\$0.00	0.00	0.00	7th Power Plan
Multifamily	Water Heating	Water Heater (> 55 Gal)	50 gallons	Existing	135.40	13	\$471.15	1%	30%	\$0.52	14.01	14.01	7th Power Plan
Multifamily	Water Heating	Water Heater (> 55 Gal)	50 gallons	Existing	427.72	13	\$829.89	1%	20%	\$0.24	34.62	34.62	Annual Energy Outlook, 2015
Multifamily	Interior Lighting	General Service Screw-In	1 lamps	Existing	9.50	12	\$6.13	100%	at stock turnover	\$0.06	1,831.40	2,773.18	EIA 2011-2012 Ref. Case
Multifamily	Interior Lighting	Linear Lighting	1 lamps	Existing	3.49	17	\$24.89	100%	at stock turnover	\$0.73	98.18	98.18	7th Power Plan
Multifamily	Interior Lighting	Exempted Screw-In	1 lamps	Existing	30.59	10	\$12.32	100%	at stock turnover	-\$0.01	417.92	402.42	EIA 2011-2012 Ref. Case
Multifamily	Exterior Lighting	Screw-in	1 lamps	Existing	18.40	10	\$6.13	100%	at stock turnover	\$0.04	500.98	750.59	EIA 2011-2012 Ref. Case
Multifamily	Appliances	Refrigerator	1 units	Existing	107.76	15	\$240.28	100%	at stock turnover	\$0.24	855.06	855.06	7th Power Plan
Multifamily	Appliances	Second Refrigerator	1 units	Existing	150.46	15	\$240.28	36%	at stock turnover	\$0.17	100.02	100.02	7th Power Plan
Multifamily	Appliances	Freezer	1 units	Existing	122.94	22	\$83.03	70%	at stock turnover	\$0.07	168.32	168.32	RTF Workbook
Multifamily	Appliances	Clothes Washer	1 units	Existing	8.74	14	\$194.20	98%	at stock turnover	\$2.52	70.67	70.67	7th Power Plan
Multifamily	Appliances	Clothes Dryer	1 units	Existing	162.50	16	\$308.00	91%	at stock turnover	\$0.20	606.94	606.94	7th Power Plan
Multifamily	Appliances	Dishwasher	1 units	Existing	2.15	15	\$6.36	84%	at stock turnover	\$0.32	13.09	13.09	7th Power Plan
Multifamily	Appliances	Stove/Oven	1 units	Existing	120.42	20	\$307.09	75%	at stock turnover	\$0.24	967.01	967.01	7th Power Plan
Multifamily	Appliances	Microwave	1 units	Existing	8.12	11	\$4.63	98%	at stock turnover	\$0.07	109.30	109.30	7th Power Plan
Multifamily	Electronics	Personal Computers	1 units	Existing	57.37	5	\$14.17	95%	at stock turnover	\$0.06	144.39	144.39	7th Power Plan
Multifamily	Electronics	Monitor	1 units	Existing	56.18	8	\$8.21	115%	at stock turnover	\$0.02	80.91	80.91	7th Power Plan
Multifamily	Electronics	Laptops	1 units	Existing	13.88	4	\$57.18	150%	at stock turnover	\$1.10	90.56	90.56	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Multifamily	Electronics	Printer/Fax/Copier	1 units	Existing	19.33	5	\$0.01	128%	at stock turnover	\$0.00	13.75	13.75	ENERGY STAR
Multifamily	Electronics	TVs	1 units	Existing	23.26	6	\$0.01	235%	at stock turnover	\$0.00	79.25	79.25	ENERGY STAR
Multifamily	Electronics	Set-top Boxes/DVRs	1 units	Existing	64.81	5	\$0.00	191%	at stock turnover	\$0.00	0.00	0.00	Voluntary Agreement
Multifamily	Electronics	Devices and Gadgets	1 units	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Multifamily	Miscellaneous	Electric Vehicles	1 units	Existing	0.00	10	\$770.00	0%	at stock turnover	\$0.00	0.00	0.00	7th Power Plan
Multifamily	Miscellaneous	Pool Heater	1 units	Existing	0.00	15	\$3,546.07	0%	at stock turnover	\$0.00	0.00	0.00	AEG Research
Multifamily	Miscellaneous	Pool Pump	1 units	Existing	0.00	15	\$872.94	1%	at stock turnover	\$0.00	0.00	0.00	Southern California Edison
Multifamily	Miscellaneous	Hot Tub/Spa	1 units	Existing	0.00	15	\$350.00	7%	at stock turnover	\$0.00	0.00	0.00	AEG Research
Multifamily	Miscellaneous	Furnace Fan	1 units	Existing	78.82	20	\$97.00	60%	at stock turnover	\$0.12	-13.26	9.21	DOE Rule: EERE-2010-BT-STD-0011
Multifamily	Miscellaneous	Well Pump	1 units	Existing	0.00	5	\$0.00	21%	at stock turnover	\$0.00	0.00	0.00	N/A
Multifamily	Miscellaneous	Miscellaneous	1 units	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Multifamily	Cooling	Central AC	12 kBtu/hr	New	54.51	15	\$647.54	44%	at stock turnover	\$1.30	188.42	188.42	AEG-BEST
Multifamily	Cooling	Room AC	10.5 kBtu/hr	New	20.80	12	\$247.96	3%	at stock turnover	\$1.48	18.02	18.02	AEG-BEST
Multifamily	Cooling	Evaporative AC	1 sqft	New	0.09	15	\$0.11	0%	at stock turnover	\$0.14	3.88	3.88	New Buildings Institute Study, 2006
Multifamily	Cooling	Air-Source Heat Pump	36 kBtu/hr	New	59.56	15	\$218.37	2%	at stock turnover	\$0.00	0.13	0.13	AEG-BEST
Multifamily	Heating	Air-Source Heat Pump	36 kBtu/hr	New	0.00	15	\$218.37	2%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Multifamily	Cooling	Geothermal Heat Pump	36 kBtu/hr	New	0.00	20	\$2,531.24	0%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Multifamily	Heating	Geothermal Heat Pump	36 kBtu/hr	New	0.00	20	\$2,531.24	0%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Multifamily	Heating	Electric Furnace	36 kBtu/hr	New	0.00	18	\$0.00	6%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Multifamily	Heating	Electric Room Heat	3.5 kBtu/hr	New	0.00	18	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Multifamily	Water Heating	Water Heater (<= 55 Gal)	50 gallons	New	756.05	13	\$743.91	8%	50%	\$0.12	198.68	198.68	7th Power Plan
Multifamily	Water Heating	Water Heater (<= 55 Gal)	50 gallons	New	825.66	13	\$1,215.07	5%	30%	\$0.17	143.00	143.00	7th Power Plan
Multifamily	Water Heating	Water Heater (<= 55 Gal)	50 gallons	New	1,196.25	13	\$1,573.80	3%	20%	\$0.16	138.27	138.27	Annual Energy Outlook, 2015
Multifamily	Water Heating	Water Heater (> 55 Gal)	50 gallons	New	661.41	13	\$0.00	1%	50%	\$0.00	0.00	0.00	7th Power Plan
Multifamily	Water Heating	Water Heater (> 55 Gal)	50 gallons	New	135.40	13	\$471.15	1%	30%	\$0.52	3.31	3.31	7th Power Plan
Multifamily	Water Heating	Water Heater (> 55 Gal)	50 gallons	New	427.72	13	\$829.89	1%	20%	\$0.24	8.19	8.19	Annual Energy Outlook, 2015
Multifamily	Interior Lighting	General Service Screw-In	1 lamps	New	9.73	12	\$6.13	100%	at stock turnover	\$0.06	524.23	615.45	EIA 2011-2012 Ref. Case
Multifamily	Interior Lighting	Linear Lighting	1 lamps	New	2.86	17	\$26.20	100%	at stock turnover	\$0.94	24.48	24.48	7th Power Plan
Multifamily	Interior Lighting	Exempted Screw-In	1 lamps	New	30.59	10	\$12.32	100%	at stock turnover	-\$0.01	118.73	116.80	EIA 2011-2012 Ref. Case
Multifamily	Exterior Lighting	Screw-in	1 lamps	New	18.81	10	\$6.13	100%	at stock turnover	\$0.03	143.62	168.37	EIA 2011-2012 Ref. Case
Multifamily	Appliances	Refrigerator	1 units	New	107.76	15	\$240.28	100%	at stock turnover	\$0.24	241.23	241.23	7th Power Plan
Multifamily	Appliances	Second Refrigerator	1 units	New	150.46	15	\$240.28	27%	at stock turnover	\$0.17	84.13	84.13	7th Power Plan
Multifamily	Appliances	Freezer	1 units	New	122.95	22	\$83.03	54%	at stock turnover	\$0.07	5.64	5.64	RTF Workbook
Multifamily	Appliances	Clothes Washer	1 units	New	8.74	14	\$194.20	99%	at stock turnover	\$2.52	17.35	17.35	7th Power Plan
Multifamily	Appliances	Clothes Dryer	1 units	New	162.50	16	\$308.00	90%	at stock turnover	\$0.20	252.71	252.71	7th Power Plan
Multifamily	Appliances	Dishwasher	1 units	New	2.15	15	\$6.36	101%	at stock turnover	\$0.32	3.56	3.56	7th Power Plan
Multifamily	Appliances	Stove/Oven	1 units	New	120.42	20	\$307.09	62%	at stock turnover	\$0.24	237.56	237.56	7th Power Plan
Multifamily	Appliances	Microwave	1 units	New	8.12	11	\$4.63	98%	at stock turnover	\$0.07	25.66	25.66	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Multifamily	Electronics	Personal Computers	1 units	New	57.37	5	\$14.17	78%	at stock turnover	\$0.06	34.96	34.96	7th Power Plan
Multifamily	Electronics	Monitor	1 units	New	56.18	8	\$8.21	93%	at stock turnover	\$0.02	25.17	25.17	7th Power Plan
Multifamily	Electronics	Laptops	1 units	New	13.88	4	\$57.18	248%	at stock turnover	\$1.10	19.54	19.54	7th Power Plan
Multifamily	Electronics	Printer/Fax/Copier	1 units	New	19.33	5	\$0.01	188%	at stock turnover	\$0.00	3.75	3.75	ENERGY STAR
Multifamily	Electronics	TVs	1 units	New	23.26	6	\$0.01	293%	at stock turnover	\$0.00	22.01	22.01	ENERGY STAR
Multifamily	Electronics	Set-top Boxes/DVRs	1 units	New	64.81	5	\$0.00	239%	at stock turnover	\$0.00	0.00	0.00	Voluntary Agreement
Multifamily	Electronics	Devices and Gadgets	1 units	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Multifamily	Miscellaneous	Electric Vehicles	1 units	New	0.00	10	\$770.00	0%	at stock turnover	\$0.00	0.00	0.00	7th Power Plan
Multifamily	Miscellaneous	Pool Heater	1 units	New	0.00	15	\$3,546.07	0%	at stock turnover	\$0.00	0.00	0.00	AEG Research
Multifamily	Miscellaneous	Pool Pump	1 units	New	0.00	15	\$872.94	1%	at stock turnover	\$0.00	0.00	0.00	Southern California Edison
Multifamily	Miscellaneous	Hot Tub/Spa	1 units	New	0.00	15	\$350.00	7%	at stock turnover	\$0.00	0.00	0.00	AEG Research
Multifamily	Miscellaneous	Furnace Fan	1 units	New	78.82	20	\$97.00	60%	at stock turnover	\$0.12	-3.85	2.68	DOE Rule: EERE-2010-BT-STD-0011
Multifamily	Miscellaneous	Well Pump	1 units	New	0.00	5	\$0.00	34%	at stock turnover	\$0.00	0.00	0.00	N/A
Multifamily	Miscellaneous	Miscellaneous	1 units	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Mobile Home	Cooling	Central AC	12 kBtu/hr	Existing	48.38	15	\$647.54	32%	at stock turnover	\$1.46	341.58	341.58	AEG-BEST
Mobile Home	Cooling	Room AC	10.5 kBtu/hr	Existing	77.52	12	\$247.96	13%	at stock turnover	\$0.40	130.13	130.13	AEG-BEST
Mobile Home	Cooling	Evaporative AC	1 sqft	Existing	0.11	15	\$0.11	16%	at stock turnover	\$0.10	373.65	373.65	New Buildings Institute Study, 2006
Mobile Home	Cooling	Air-Source Heat Pump	36 kBtu/hr	Existing	63.94	15	\$218.37	2%	at stock turnover	\$0.03	3.70	3.70	AEG-BEST
Mobile Home	Heating	Air-Source Heat Pump	36 kBtu/hr	Existing	620.71	15	\$218.37	2%	at stock turnover	\$0.03	35.93	35.93	AEG-BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Mobile Home	Cooling	Geothermal Heat Pump	36 kBtu/hr	Existing	0.00	20	\$2,531.24	0%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Mobile Home	Heating	Geothermal Heat Pump	36 kBtu/hr	Existing	0.00	20	\$2,531.24	0%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Mobile Home	Heating	Electric Furnace	36 kBtu/hr	Existing	0.00	18	\$0.00	4%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Mobile Home	Heating	Electric Room Heat	3.5 kBtu/hr	Existing	0.00	18	\$0.00	10%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Mobile Home	Water Heating	Water Heater (<= 55 Gal)	50 gallons	Existing	1,210.23	13	\$743.91	13%	50%	\$0.07	1,849.17	1,849.17	7th Power Plan
Mobile Home	Water Heating	Water Heater (<= 55 Gal)	50 gallons	Existing	1,322.01	13	\$1,215.07	8%	30%	\$0.11	1,330.89	1,330.89	7th Power Plan
Mobile Home	Water Heating	Water Heater (<= 55 Gal)	50 gallons	Existing	1,915.27	13	\$1,573.80	5%	20%	\$0.10	1,286.71	1,286.71	Annual Energy Outlook, 2015
Mobile Home	Water Heating	Water Heater (> 55 Gal)	50 gallons	Existing	1,058.81	13	\$0.00	2%	50%	\$0.00	0.00	0.00	7th Power Plan
Mobile Home	Water Heating	Water Heater (> 55 Gal)	50 gallons	Existing	216.76	13	\$471.15	1%	30%	\$0.32	3.42	3.42	7th Power Plan
Mobile Home	Water Heating	Water Heater (> 55 Gal)	50 gallons	Existing	684.73	13	\$829.89	1%	20%	\$0.15	8.45	8.45	Annual Energy Outlook, 2015
Mobile Home	Interior Lighting	General Service Screw-In	1 lamps	Existing	14.61	12	\$6.13	100%	at stock turnover	\$0.04	1,705.95	2,573.92	EIA 2011-2012 Ref. Case
Mobile Home	Interior Lighting	Linear Lighting	1 lamps	Existing	4.36	17	\$31.09	100%	at stock turnover	\$0.73	100.41	100.41	7th Power Plan
Mobile Home	Interior Lighting	Exempted Screw-In	1 lamps	Existing	48.44	10	\$12.32	100%	at stock turnover	\$0.00	1,472.84	1,418.21	EIA 2011-2012 Ref. Case
Mobile Home	Exterior Lighting	Screw-in	1 lamps	Existing	20.79	10	\$6.13	100%	at stock turnover	\$0.03	471.66	704.07	EIA 2011-2012 Ref. Case
Mobile Home	Appliances	Refrigerator	1 units	Existing	107.76	15	\$240.28	100%	at stock turnover	\$0.24	681.67	681.67	7th Power Plan
Mobile Home	Appliances	Second Refrigerator	1 units	Existing	150.46	15	\$240.28	36%	at stock turnover	\$0.17	220.43	220.43	7th Power Plan
Mobile Home	Appliances	Freezer	1 units	Existing	122.95	22	\$83.03	70%	at stock turnover	\$0.07	333.41	333.41	RTF Workbook
Mobile Home	Appliances	Clothes Washer	1 units	Existing	9.19	14	\$194.20	98%	at stock turnover	\$2.39	88.95	88.95	7th Power Plan
Mobile Home	Appliances	Clothes Dryer	1 units	Existing	171.58	16	\$308.00	91%	at stock turnover	\$0.19	771.76	771.76	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Mobile Home	Appliances	Dishwasher	1 units	Existing	2.15	15	\$6.36	84%	at stock turnover	\$0.32	10.83	10.83	7th Power Plan
Mobile Home	Appliances	Stove/Oven	1 units	Existing	118.64	20	\$307.09	75%	at stock turnover	\$0.25	338.45	338.45	7th Power Plan
Mobile Home	Appliances	Microwave	1 units	Existing	8.12	11	\$4.63	98%	at stock turnover	\$0.07	87.42	87.42	7th Power Plan
Mobile Home	Electronics	Personal Computers	1 units	Existing	57.37	5	\$14.17	95%	at stock turnover	\$0.06	139.78	139.78	7th Power Plan
Mobile Home	Electronics	Monitor	1 units	Existing	56.18	8	\$8.21	115%	at stock turnover	\$0.02	78.32	78.32	7th Power Plan
Mobile Home	Electronics	Laptops	1 units	Existing	13.88	4	\$57.18	150%	at stock turnover	\$1.10	32.87	32.87	7th Power Plan
Mobile Home	Electronics	Printer/Fax/Copier	1 units	Existing	19.33	5	\$0.01	128%	at stock turnover	\$0.00	12.47	12.47	ENERGY STAR
Mobile Home	Electronics	TVs	1 units	Existing	21.92	6	\$0.01	235%	at stock turnover	\$0.00	79.51	79.51	ENERGY STAR
Mobile Home	Electronics	Set-top Boxes/DVRs	1 units	Existing	64.81	5	\$0.00	191%	at stock turnover	\$0.00	0.00	0.00	Voluntary Agreement
Mobile Home	Electronics	Devices and Gadgets	1 units	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Mobile Home	Miscellaneous	Electric Vehicles	1 units	Existing	116.75	10	\$770.00	0%	at stock turnover	\$0.90	5.66	5.66	7th Power Plan
Mobile Home	Miscellaneous	Pool Heater	1 units	Existing	0.00	15	\$3,546.07	0%	at stock turnover	\$0.00	0.00	0.00	AEG Research
Mobile Home	Miscellaneous	Pool Pump	1 units	Existing	0.00	15	\$872.94	1%	at stock turnover	\$0.00	0.00	0.00	Southern California Edison
Mobile Home	Miscellaneous	Hot Tub/Spa	1 units	Existing	169.51	15	\$350.00	7%	at stock turnover	\$0.23	47.70	47.70	AEG Research
Mobile Home	Miscellaneous	Furnace Fan	1 units	Existing	124.29	20	\$97.00	60%	at stock turnover	\$0.07	-32.66	22.69	DOE Rule: EERE-2010-BT-STD-0011
Mobile Home	Miscellaneous	Well Pump	1 units	Existing	0.00	5	\$0.00	21%	at stock turnover	\$0.00	0.00	0.00	N/A
Mobile Home	Miscellaneous	Miscellaneous	1 units	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Mobile Home	Cooling	Central AC	12 kBtu/hr	New	0.00	15	\$647.54	44%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Mobile Home	Cooling	Room AC	10.5 kBtu/hr	New	37.19	12	\$247.96	3%	at stock turnover	\$0.83	21.43	21.43	AEG-BEST

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Mobile Home	Cooling	Evaporative AC	1 sqft	New	0.11	15	\$0.11	0%	at stock turnover	\$0.10	101.81	101.81	New Buildings Institute Study, 2006
Mobile Home	Cooling	Air-Source Heat Pump	36 kBtu/hr	New	101.94	15	\$218.37	2%	at stock turnover	\$0.03	0.90	0.90	AEG-BEST
Mobile Home	Heating	Air-Source Heat Pump	36 kBtu/hr	New	759.26	15	\$218.37	2%	at stock turnover	\$0.03	6.71	6.71	AEG-BEST
Mobile Home	Cooling	Geothermal Heat Pump	36 kBtu/hr	New	0.00	20	\$2,531.24	0%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Mobile Home	Heating	Geothermal Heat Pump	36 kBtu/hr	New	0.00	20	\$2,531.24	0%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Mobile Home	Heating	Electric Furnace	36 kBtu/hr	New	0.00	18	\$0.00	6%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Mobile Home	Heating	Electric Room Heat	3.5 kBtu/hr	New	0.00	18	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Mobile Home	Water Heating	Water Heater (<= 55 Gal)	50 gallons	New	1,210.21	13	\$743.91	8%	50%	\$0.07	471.56	471.56	7th Power Plan
Mobile Home	Water Heating	Water Heater (<= 55 Gal)	50 gallons	New	1,322.57	13	\$1,215.07	5%	30%	\$0.11	339.36	339.36	7th Power Plan
Mobile Home	Water Heating	Water Heater (<= 55 Gal)	50 gallons	New	1,915.82	13	\$1,573.80	3%	20%	\$0.10	328.05	328.05	Annual Energy Outlook, 2015
Mobile Home	Water Heating	Water Heater (> 55 Gal)	50 gallons	New	1,058.81	13	\$0.00	1%	50%	\$0.00	0.00	0.00	7th Power Plan
Mobile Home	Water Heating	Water Heater (> 55 Gal)	50 gallons	New	216.79	13	\$471.15	1%	30%	\$0.32	0.81	0.81	7th Power Plan
Mobile Home	Water Heating	Water Heater (> 55 Gal)	50 gallons	New	684.75	13	\$829.89	1%	20%	\$0.15	2.00	2.00	Annual Energy Outlook, 2015
Mobile Home	Interior Lighting	General Service Screw-In	1 lamps	New	15.04	12	\$6.13	100%	at stock turnover	\$0.04	432.96	508.30	EIA 2011-2012 Ref. Case
Mobile Home	Interior Lighting	Linear Lighting	1 lamps	New	4.47	17	\$32.73	100%	at stock turnover	\$0.75	27.67	27.67	7th Power Plan
Mobile Home	Interior Lighting	Exempted Screw-In	1 lamps	New	48.44	10	\$12.32	100%	at stock turnover	\$0.00	370.17	364.16	EIA 2011-2012 Ref. Case
Mobile Home	Exterior Lighting	Screw-in	1 lamps	New	21.35	10	\$6.13	100%	at stock turnover	\$0.03	119.89	140.55	EIA 2011-2012 Ref. Case
Mobile Home	Appliances	Refrigerator	1 units	New	107.77	15	\$240.28	100%	at stock turnover	\$0.24	192.33	192.33	7th Power Plan
Mobile Home	Appliances	Second Refrigerator	1 units	New	150.47	15	\$240.28	27%	at stock turnover	\$0.17	95.56	95.56	7th Power Plan

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Mobile Home	Appliances	Freezer	1 units	New	122.94	22	\$83.03	54%	at stock turnover	\$0.07	135.84	135.84	RTF Workbook
Mobile Home	Appliances	Clothes Washer	1 units	New	9.19	14	\$194.20	99%	at stock turnover	\$2.39	21.74	21.74	7th Power Plan
Mobile Home	Appliances	Clothes Dryer	1 units	New	171.58	16	\$308.00	90%	at stock turnover	\$0.19	212.57	212.57	7th Power Plan
Mobile Home	Appliances	Dishwasher	1 units	New	2.15	15	\$6.36	101%	at stock turnover	\$0.32	2.95	2.95	7th Power Plan
Mobile Home	Appliances	Stove/Oven	1 units	New	118.64	20	\$307.09	62%	at stock turnover	\$0.25	97.02	97.02	7th Power Plan
Mobile Home	Appliances	Microwave	1 units	New	8.12	11	\$4.63	98%	at stock turnover	\$0.07	20.45	20.45	7th Power Plan
Mobile Home	Electronics	Personal Computers	1 units	New	57.37	5	\$14.17	78%	at stock turnover	\$0.06	28.29	28.29	7th Power Plan
Mobile Home	Electronics	Monitor	1 units	New	56.18	8	\$8.21	93%	at stock turnover	\$0.02	18.44	18.44	7th Power Plan
Mobile Home	Electronics	Laptops	1 units	New	13.88	4	\$57.18	248%	at stock turnover	\$1.10	7.07	7.07	7th Power Plan
Mobile Home	Electronics	Printer/Fax/Copier	1 units	New	19.33	5	\$0.01	188%	at stock turnover	\$0.00	2.85	2.85	ENERGY STAR
Mobile Home	Electronics	TVs	1 units	New	21.92	6	\$0.01	293%	at stock turnover	\$0.00	22.29	22.29	ENERGY STAR
Mobile Home	Electronics	Set-top Boxes/DVRs	1 units	New	64.81	5	\$0.00	239%	at stock turnover	\$0.00	0.00	0.00	Voluntary Agreement
Mobile Home	Electronics	Devices and Gadgets	1 units	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Mobile Home	Miscellaneous	Electric Vehicles	1 units	New	116.75	10	\$770.00	0%	at stock turnover	\$0.90	1.35	1.35	7th Power Plan
Mobile Home	Miscellaneous	Pool Heater	1 units	New	0.00	15	\$3,546.07	0%	at stock turnover	\$0.00	0.00	0.00	AEG Research
Mobile Home	Miscellaneous	Pool Pump	1 units	New	0.00	15	\$872.94	1%	at stock turnover	\$0.00	0.00	0.00	Southern California Edison
Mobile Home	Miscellaneous	Hot Tub/Spa	1 units	New	169.51	15	\$350.00	7%	at stock turnover	\$0.23	18.82	18.82	AEG Research
Mobile Home	Miscellaneous	Furnace Fan	1 units	New	124.29	20	\$97.00	60%	at stock turnover	\$0.07	-9.48	6.59	DOE Rule: EERE-2010-BT-STD-0011
Mobile Home	Miscellaneous	Well Pump	1 units	New	0.00	5	\$0.00	34%	at stock turnover	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Mobile Home	Miscellaneous	Miscellaneous	1 units	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Single Family	Cooling	Insulation - Ceiling Installation	sqft roof	Existing	0.16	45	\$1.15	22%	38%	\$0.05	829.35	913.62	7th Power Plan
Single Family	Heating	Insulation - Ceiling Installation	sqft roof	Existing	1.64	45	\$1.15	22%	38%	\$0.05	2,356.61	2,375.21	7th Power Plan
Single Family	Cooling	Insulation - Ceiling Upgrade	sqft roof	Existing	0.02	45	\$1.01	22%	38%	\$0.20	117.50	135.56	7th Power Plan
Single Family	Heating	Insulation - Ceiling Upgrade	sqft roof	Existing	0.37	45	\$1.01	22%	38%	\$0.20	534.63	547.19	7th Power Plan
Single Family	Cooling	Insulation - Radiant Barrier	sqft roof	Existing	0.14	15	\$0.67	4%	19%	\$0.03	689.87	790.55	AEG Research
Single Family	Heating	Insulation - Radiant Barrier	sqft roof	Existing	2.16	15	\$0.67	4%	19%	\$0.03	2,882.60	2,924.68	AEG Research
Single Family	Cooling	Insulation - Wall Cavity Installation	sqft wall	Existing	0.02	45	\$1.42	40%	40%	\$0.07	0.00	0.00	7th Power Plan
Single Family	Heating	Insulation - Wall Cavity Installation	sqft wall	Existing	1.50	45	\$1.42	40%	40%	\$0.07	0.00	0.00	7th Power Plan
Single Family	Cooling	Insulation - Wall Sheathing	sqft wall	Existing	0.01	20	\$0.93	3%	3%	\$0.16	0.00	0.00	AEG-BEST
Single Family	Heating	Insulation - Wall Sheathing	sqft wall	Existing	0.51	20	\$0.93	3%	3%	\$0.16	0.00	0.00	AEG-BEST
Single Family	Cooling	Insulation - Floor Installation	sqft floor cs	Existing	-0.02	45	\$1.35	25%	30%	\$0.17	-20.75	-23.94	7th Power Plan
Single Family	Heating	Insulation - Floor Installation	sqft floor cs	Existing	0.66	45	\$1.35	25%	30%	\$0.17	160.16	163.84	7th Power Plan
Single Family	Cooling	Insulation - Floor Upgrade	sqft floor cs	Existing	0.00	25	\$3.39	25%	30%	\$1.64	0.00	0.00	7th Power Plan
Single Family	Heating	Insulation - Floor Upgrade	sqft floor cs	Existing	0.17	25	\$3.39	25%	30%	\$1.64	38.77	43.26	7th Power Plan
Single Family	Cooling	Insulation - Foundation	household	Existing	-24.81	70	\$1,241.19	2%	2%	\$0.16	0.00	0.00	RTF Workbook
Single Family	Heating	Insulation - Foundation	household	Existing	623.31	70	\$1,241.19	2%	2%	\$0.16	0.00	0.00	RTF Workbook
Single Family	Cooling	Insulation - Ducting	household	Existing	28.94	18	\$528.00	52%	60%	\$0.13	51.90	64.06	AEG-BEST
Single Family	Heating	Insulation - Ducting	household	Existing	343.20	18	\$528.00	52%	60%	\$0.13	116.29	126.57	AEG-BEST
Single Family	Cooling	Ducting - Repair and Sealing	household	Existing	37.97	20	\$769.57	30%	75%	\$0.10	400.16	480.34	7th Power Plan
Single Family	Heating	Ducting - Repair and Sealing	household	Existing	656.47	20	\$769.57	30%	75%	\$0.10	1,312.17	1,378.15	7th Power Plan
Single Family	Cooling	Building Shell - Infiltration Control	sqft home	Existing	0.00	15	\$0.68	16%	75%	\$0.19	135.14	163.29	7th Power Plan
Single Family	Heating	Building Shell - Infiltration Control	sqft home	Existing	0.35	15	\$0.68	16%	75%	\$0.19	3,528.85	3,883.41	7th Power Plan

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Single Family	Cooling	Windows - High Efficiency/ENERGY STAR	sqft window	Existing	0.51	45	\$19.01	33%	75%	\$0.21	1,111.00	1,283.25	7th Power Plan
Single Family	Heating	Windows - High Efficiency/ENERGY STAR	sqft window	Existing	6.65	45	\$19.01	33%	75%	\$0.21	4,083.80	4,186.18	7th Power Plan
Single Family	Cooling	Windows - Install Reflective Film	sqft window	Existing	0.03	45	\$3.38	16%	75%	\$0.32	106.83	125.34	7th Power Plan
Single Family	Heating	Windows - Install Reflective Film	sqft window	Existing	0.76	45	\$3.38	16%	75%	\$0.32	661.94	689.42	7th Power Plan
Single Family	Cooling	Doors - Storm and Thermal	household	Existing	3.80	20	\$682.67	43%	80%	\$0.41	58.48	70.76	AEG-BEST
Single Family	Heating	Doors - Storm and Thermal	household	Existing	134.19	20	\$682.67	43%	80%	\$0.41	566.05	630.42	AEG-BEST
Single Family	Cooling	Ductless Mini Split Heat Pump (Zonal)	household	Existing	132.34	15	\$3,448.86	1%	38%	\$0.16	351.67	406.79	7th Power Plan
Single Family	Heating	Ductless Mini Split Heat Pump (Zonal)	household	Existing	2,054.68	15	\$3,448.86	1%	38%	\$0.16	5,538.09	5,833.18	7th Power Plan
Single Family	Cooling	Ductless Mini Split Heat Pump (Ducted Forced Air)	household	Existing	76.02	15	\$3,517.21	1%	38%	\$0.10	621.81	735.95	7th Power Plan
Single Family	Heating	Ductless Mini Split Heat Pump (Ducted Forced Air)	household	Existing	3,344.79	15	\$3,517.21	1%	38%	\$0.10	3,398.17	3,544.57	7th Power Plan
Single Family	Cooling	Space Heating - Heat Recovery Ventilator	household	Existing	5.34	20	\$1,303.92	0%	0%	\$0.19	0.00	0.00	7th Power Plan
Single Family	Heating	Space Heating - Heat Recovery Ventilator	household	Existing	606.18	20	\$1,303.92	0%	0%	\$0.19	0.00	0.00	7th Power Plan
Single Family	Cooling	Furnace - Conversion to Air-Source Heat Pump	household	Existing	0.00	15	\$2,955.28	0%	0%	\$0.13	0.00	0.00	7th Power Plan
Single Family	Heating	Furnace - Conversion to Air-Source Heat Pump	household	Existing	2,435.52	15	\$2,955.28	0%	0%	\$0.13	0.00	0.00	7th Power Plan
Single Family	Cooling	Room AC - Removal of Second Unit	household	Existing	675.19	3	\$18.00	0%	50%	\$0.01	2,528.32	2,750.60	CA DEER
Single Family	Cooling	Central AC - Maintenance and Tune-Up	household	Existing	47.83	6	\$275.74	7%	75%	\$0.95	725.57	830.33	Illinois TRM
Single Family	Cooling	Central Heat Pump - Controls and Commissioning	household	Existing	0.55	15	\$581.99	65%	75%	\$0.10	0.08	0.10	7th Power Plan
Single Family	Heating	Central Heat Pump - Controls and Commissioning	household	Existing	621.44	15	\$581.99	65%	75%	\$0.10	104.59	108.00	7th Power Plan
Single Family	Cooling	Ceiling Fan - ENERGY STAR	ceiling fans	Existing	9.14	10	\$47.23	40%	75%	\$0.60	271.53	304.42	ENERGY STAR

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Single Family	Cooling	Whole-House Fan - Installation	household	Existing	37.03	20	\$714.44	15%	40%	\$1.56	214.09	267.60	California Public Utilities Commission
Single Family	Cooling	Thermostat - WiFi/Interactive	household	Existing	32.03	10	\$256.67	5%	75%	\$0.06	958.99	1,097.34	7th Power Plan
Single Family	Heating	Thermostat - WiFi/Interactive	household	Existing	477.62	10	\$256.67	5%	75%	\$0.06	3,952.50	4,085.67	7th Power Plan
Single Family	Water Heating	Water Heater - Drainwater Heat Recovery	household	Existing	199.23	40	\$837.67	1%	5%	\$0.31	133.43	159.13	7th Power Plan
Single Family	Water Heating	Water Heater - Faucet Aerators	aerators	Existing	100.17	15	\$5.13	34%	50%	\$0.01	840.52	1,025.40	7th Power Plan
Single Family	Water Heating	Water Heater - Low-Flow Showerheads	showerheads	Existing	217.87	10	\$26.56	51%	75%	\$0.02	1,631.42	2,158.43	7th Power Plan
Single Family	Water Heating	Water Heater - Pipe Insulation	feet pipe	Existing	22.54	15	\$3.26	12%	75%	\$0.01	1,245.16	1,629.59	Mid-Atlantic TRM
Single Family	Water Heating	Water Heater - Desuperheater	household	Existing	1,343.26	20	\$1,136.89	0%	0%	\$0.07	67.76	83.15	RTF Workbook
Single Family	Water Heating	Water Heater - Temperature Setback	household	Existing	67.75	2	\$5.00	41%	75%	\$0.03	402.09	542.71	Illinois TRM
Single Family	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	showerheads	Existing	26.05	10	\$19.30	16%	45%	\$0.09	237.49	319.85	RTF Workbook
Single Family	Water Heating	Water Heater - Solar System	household	Existing	994.65	20	\$8,847.45	2%	30%	\$0.74	3,138.49	3,907.19	7th Power Plan
Single Family	Interior Lighting	Interior Lighting - Occupancy Sensors	occ sens	Existing	80.13	8	\$99.16	0%	5%	\$0.14	408.37	719.45	Pacific Gas and Electric Research
Single Family	Exterior Lighting	Exterior Lighting - Photosensor Control	ext fixt	Existing	15.57	15	\$10.19	8%	50%	\$0.06	945.14	2,283.24	Michigan Energy Measures Database
Single Family	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	ext fixt pv	Existing	17.92	3	\$28.00	1%	30%	\$0.38	351.35	938.75	AEG Research
Single Family	Exterior Lighting	Exterior Lighting - Timeclock Installation	ext fixt	Existing	9.48	10	\$19.15	2%	50%	\$0.21	638.73	1,634.89	Ontario Power TRM
Single Family	Appliances	Refrigerator - Decommissioning and Recycling	household	Existing	298.38	6	\$143.58	0%	65%	\$0.09	4,636.36	5,152.84	PacificCorp '13-'14 Evaluation
Single Family	Appliances	Freezer - Decommissioning and Recycling	household	Existing	287.77	5	\$143.58	0%	10%	\$0.11	1,315.04	1,486.01	PacificCorp '13-'14 Evaluation
Single Family	Electronics	Advanced Power Strips - Tier 1	smart strip	Existing	28.93	5	\$15.83	8%	25%	\$0.12	750.00	731.70	7th Power Plan

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Single Family	Electronics	Advanced Power Strips - Tier 2	smart strip	Existing	182.86	5	\$50.49	8%	25%	\$0.06	4,837.53	4,620.31	7th Power Plan
Single Family	Miscellaneous	Pool Pump - Timer	household	Existing	449.42	10	\$85.22	1%	75%	\$0.03	289.37	299.14	Ontario Power TRM
Single Family	Miscellaneous	Pool Heater - Solar Water Heating System	household	Existing	1,910.70	20	\$3,767.92	0%	30%	\$0.19	64.30	66.64	AEG Research
Single Family	Cooling	ENERGY STAR Home Design	household	Existing	68.75	20	\$4,253.40	0%	0%	\$0.22	0.00	0.00	RTF Workbook
Single Family	Heating	ENERGY STAR Home Design	household	Existing	725.86	20	\$4,253.40	0%	0%	\$0.22	0.00	0.00	RTF Workbook
Single Family	Water Heating	ENERGY STAR Home Design	household	Existing	415.14	20	\$4,253.40	0%	0%	\$0.22	0.00	0.00	RTF Workbook
Single Family	Interior Lighting	ENERGY STAR Home Design	household	Existing	301.83	20	\$4,253.40	0%	0%	\$0.22	0.00	0.00	RTF Workbook
Single Family	Cooling	Behavioral Programs	household	Existing	3.68	1	\$5.00	39%	97%	\$0.07	144.82	182.70	AEG Research
Single Family	Heating	Behavioral Programs	household	Existing	13.47	1	\$5.00	39%	97%	\$0.07	530.30	664.80	AEG Research
Single Family	Water Heating	Behavioral Programs	household	Existing	5.43	1	\$5.00	39%	97%	\$0.07	181.77	284.84	AEG Research
Single Family	Interior Lighting	Behavioral Programs	household	Existing	5.93	1	\$5.00	39%	97%	\$0.07	181.78	425.61	AEG Research
Single Family	Exterior Lighting	Behavioral Programs	household	Existing	1.26	1	\$5.00	39%	97%	\$0.07	28.74	118.26	AEG Research
Single Family	Appliances	Behavioral Programs	household	Existing	16.89	1	\$5.00	39%	97%	\$0.07	670.00	782.31	AEG Research
Single Family	Electronics	Behavioral Programs	household	Existing	8.81	1	\$5.00	39%	97%	\$0.07	382.48	393.34	AEG Research
Single Family	Miscellaneous	Behavioral Programs	household	Existing	4.65	1	\$5.00	39%	97%	\$0.07	193.20	206.86	AEG Research
Single Family	Interior Lighting	Interior Lighting - General Service CFLs	GSL lamp	Existing	10.47	9	-\$0.13	0%	48%	\$0.00	1,150.22	3,601.51	RTF Workbook
Single Family	Interior Lighting	Interior Lighting - Exempted CFLs	Exempt lamp	Existing	25.26	5	-\$2.74	0%	48%	-\$0.02	2,025.16	2,655.17	RTF Workbook
Single Family	Cooling	Insulation - Ceiling Installation	sqft roof	New	0.19	45	\$1.15	15%	38%	\$0.05	54.48	57.98	7th Power Plan
Single Family	Heating	Insulation - Ceiling Installation	sqft roof	New	1.63	45	\$1.15	15%	38%	\$0.05	86.56	87.82	7th Power Plan
Single Family	Cooling	Insulation - Ceiling Upgrade	sqft roof	New	0.03	45	\$1.01	15%	38%	\$0.19	8.37	8.89	7th Power Plan
Single Family	Heating	Insulation - Ceiling Upgrade	sqft roof	New	0.37	45	\$1.01	15%	38%	\$0.19	19.82	20.06	7th Power Plan
Single Family	Cooling	Insulation - Radiant Barrier	sqft roof	New	0.18	15	\$0.67	1%	5%	\$0.03	8.52	9.07	AEG Research
Single Family	Heating	Insulation - Radiant Barrier	sqft roof	New	2.12	15	\$0.67	1%	5%	\$0.03	18.53	18.76	AEG Research
Single Family	Cooling	Insulation - Wall Cavity Installation	sqft wall	New	0.03	45	\$1.42	80%	80%	\$0.07	0.00	0.00	7th Power Plan

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Single Family	Heating	Insulation - Wall Cavity Installation	sqft wall	New	1.47	45	\$1.42	80%	80%	\$0.07	0.00	0.00	7th Power Plan
Single Family	Cooling	Insulation - Wall Sheathing	sqft wall	New	0.01	20	\$0.93	2%	20%	\$0.16	6.61	6.99	AEG-BEST
Single Family	Heating	Insulation - Wall Sheathing	sqft wall	New	0.51	20	\$0.93	2%	20%	\$0.16	44.46	45.03	AEG-BEST
Single Family	Cooling	Insulation - Floor Installation	sqft floor cs	New	-0.03	45	\$1.35	38%	38%	\$0.17	-0.04	-0.04	7th Power Plan
Single Family	Heating	Insulation - Floor Installation	sqft floor cs	New	0.66	45	\$1.35	38%	38%	\$0.17	0.15	0.16	7th Power Plan
Single Family	Cooling	Insulation - Floor Upgrade	sqft floor cs	New	0.00	25	\$3.39	38%	38%	\$1.63	0.00	0.00	7th Power Plan
Single Family	Heating	Insulation - Floor Upgrade	sqft floor cs	New	0.17	25	\$3.39	38%	38%	\$1.63	0.04	0.04	7th Power Plan
Single Family	Cooling	Insulation - Foundation	household	New	-26.28	70	\$1,241.19	8%	75%	\$0.10	-30.32	-32.21	RTF Workbook
Single Family	Heating	Insulation - Foundation	household	New	979.44	70	\$1,241.19	8%	75%	\$0.10	212.97	215.91	RTF Workbook
Single Family	Cooling	Insulation - Ducting	household	New	40.83	18	\$528.00	79%	80%	\$0.10	0.52	0.55	AEG-BEST
Single Family	Heating	Insulation - Ducting	household	New	457.83	18	\$528.00	79%	80%	\$0.10	0.88	0.89	AEG-BEST
Single Family	Cooling	Ducting - Repair and Sealing	household	New	41.75	20	\$769.57	30%	75%	\$0.10	30.46	32.45	7th Power Plan
Single Family	Heating	Ducting - Repair and Sealing	household	New	679.00	20	\$769.57	30%	75%	\$0.10	75.48	76.50	7th Power Plan
Single Family	Cooling	Building Shell - Infiltration Control	sqft home	New	0.00	15	\$0.68	16%	75%	\$0.19	7.18	7.61	7th Power Plan
Single Family	Heating	Building Shell - Infiltration Control	sqft home	New	0.36	15	\$0.68	16%	75%	\$0.19	99.29	100.65	7th Power Plan
Single Family	Cooling	Windows - High Efficiency/ENERGY STAR	sqft window	New	0.65	45	\$19.01	47%	75%	\$0.20	38.68	41.06	7th Power Plan
Single Family	Heating	Windows - High Efficiency/ENERGY STAR	sqft window	New	6.62	45	\$19.01	47%	75%	\$0.20	73.99	74.84	7th Power Plan
Single Family	Cooling	Windows - Install Reflective Film	sqft window	New	0.05	45	\$3.38	16%	75%	\$0.32	5.66	6.00	7th Power Plan
Single Family	Heating	Windows - Install Reflective Film	sqft window	New	0.77	45	\$3.38	16%	75%	\$0.32	18.16	18.35	7th Power Plan
Single Family	Cooling	Doors - Storm and Thermal	household	New	1.16	20	\$682.67	36%	80%	\$0.80	0.87	0.93	AEG-BEST
Single Family	Heating	Doors - Storm and Thermal	household	New	71.99	20	\$682.67	36%	80%	\$0.80	10.23	10.46	AEG-BEST
Single Family	Cooling	Ductless Mini Split Heat Pump (Zonal)	household	New	139.76	15	\$3,448.86	1%	38%	\$0.16	4.98	5.26	7th Power Plan

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Single Family	Heating	Ductless Mini Split Heat Pump (Zonal)	household	New	2,073.00	15	\$3,448.86	1%	38%	\$0.16	71.12	70.86	7th Power Plan
Single Family	Cooling	Ductless Mini Split Heat Pump (Ducted Forced Air)	household	New	85.58	15	\$3,517.21	1%	38%	\$0.10	61.05	64.41	7th Power Plan
Single Family	Heating	Ductless Mini Split Heat Pump (Ducted Forced Air)	household	New	3,394.25	15	\$3,517.21	1%	38%	\$0.10	252.62	252.16	7th Power Plan
Single Family	Cooling	Space Heating - Heat Recovery Ventilator	household	New	5.95	20	\$1,303.92	0%	0%	\$0.18	0.00	0.00	7th Power Plan
Single Family	Heating	Space Heating - Heat Recovery Ventilator	household	New	628.17	20	\$1,303.92	0%	0%	\$0.18	0.00	0.00	7th Power Plan
Single Family	Cooling	Furnace - Conversion to Air-Source Heat Pump	household	New	0.00	15	\$2,955.28	0%	0%	\$0.12	0.00	0.00	7th Power Plan
Single Family	Heating	Furnace - Conversion to Air-Source Heat Pump	household	New	2,507.66	15	\$2,955.28	0%	0%	\$0.12	0.00	0.00	7th Power Plan
Single Family	Cooling	Room AC - Removal of Second Unit	household	New	662.98	3	\$18.00	0%	50%	\$0.01	5.61	6.13	CA DEER
Single Family	Cooling	Central AC - Maintenance and Tune-Up	household	New	53.85	6	\$275.74	7%	75%	\$0.88	18.01	19.72	Illinois TRM
Single Family	Cooling	Central Heat Pump - Controls and Commissioning	household	New	0.61	15	\$581.99	25%	75%	\$0.09	0.03	0.03	7th Power Plan
Single Family	Heating	Central Heat Pump - Controls and Commissioning	household	New	660.83	15	\$581.99	25%	75%	\$0.09	35.18	34.97	7th Power Plan
Single Family	Cooling	Ceiling Fan - ENERGY STAR	ceiling fans	New	10.02	10	\$47.23	40%	75%	\$0.57	10.14	10.68	ENERGY STAR
Single Family	Cooling	Whole-House Fan - Installation	household	New	35.53	20	\$714.44	15%	40%	\$1.70	14.42	15.53	California Public Utilities Commission
Single Family	Cooling	Thermostat - WiFi/Interactive	household	New	42.04	10	\$256.67	5%	75%	\$0.06	53.91	57.03	7th Power Plan
Single Family	Heating	Thermostat - WiFi/Interactive	household	New	481.20	10	\$256.67	5%	75%	\$0.06	115.38	116.16	7th Power Plan
Single Family	Water Heating	Water Heater - Drainwater Heat Recovery	household	New	209.56	40	\$837.67	1%	10%	\$0.29	19.52	21.88	7th Power Plan
Single Family	Water Heating	Water Heater - Faucet Aerators	aerators	New	102.15	15	\$5.13	43%	50%	\$0.00	17.17	19.98	7th Power Plan
Single Family	Water Heating	Water Heater - Low-Flow Showerheads	showerheads	New	225.12	10	\$26.56	65%	75%	\$0.01	16.12	19.92	7th Power Plan

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Single Family	Water Heating	Water Heater - Pipe Insulation	feet pipe	New	23.11	15	\$3.26	12%	75%	\$0.01	37.93	46.05	Mid-Atlantic TRM
Single Family	Water Heating	Water Heater - Desuperheater	household	New	1,203.17	20	\$1,136.89	0%	0%	\$0.08	3.31	3.68	RTF Workbook
Single Family	Water Heating	Water Heater - Temperature Setback	household	New	71.33	2	\$5.00	51%	75%	\$0.03	0.79	1.02	Illinois TRM
Single Family	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	showerheads	New	27.38	10	\$19.30	16%	45%	\$0.09	5.87	7.27	RTF Workbook
Single Family	Water Heating	Water Heater - Solar System	household	New	957.39	20	\$8,847.45	2%	30%	\$0.78	159.65	180.40	7th Power Plan
Single Family	Interior Lighting	Interior Lighting - Occupancy Sensors	occ sens	New	86.53	8	\$99.16	0%	5%	\$0.12	14.25	21.61	Pacific Gas and Electric Research
Single Family	Exterior Lighting	Exterior Lighting - Photosensor Control	ext fixt	New	13.73	15	\$10.19	3%	50%	\$0.06	53.01	93.50	Michigan Energy Measures Database
Single Family	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	ext fixt pv	New	11.16	3	\$28.00	1%	30%	\$0.58	2.40	6.94	AEG Research
Single Family	Exterior Lighting	Exterior Lighting - Timeclock Installation	ext fixt	New	10.56	10	\$19.15	0%	50%	\$0.17	33.67	65.86	Ontario Power TRM
Single Family	Appliances	Refrigerator - Decommissioning and Recycling	household	New	279.43	6	\$143.58	0%	65%	\$0.09	101.63	109.19	PacificCorp '13-'14 Evaluation
Single Family	Appliances	Freezer - Decommissioning and Recycling	household	New	272.19	5	\$143.58	0%	10%	\$0.11	23.29	25.05	PacificCorp '13-'14 Evaluation
Single Family	Electronics	Advanced Power Strips - Tier 1	smart strip	New	33.74	5	\$15.83	8%	25%	\$0.10	26.33	23.83	7th Power Plan
Single Family	Electronics	Advanced Power Strips - Tier 2	smart strip	New	209.91	5	\$50.49	8%	25%	\$0.05	163.73	148.51	7th Power Plan
Single Family	Miscellaneous	Pool Pump - Timer	household	New	482.28	10	\$85.22	1%	75%	\$0.02	15.43	15.74	Ontario Power TRM
Single Family	Miscellaneous	Pool Heater - Solar Water Heating System	household	New	1,872.81	20	\$3,767.92	0%	30%	\$0.19	3.67	3.74	AEG Research
Single Family	Cooling	ENERGY STAR Home Design	household	New	91.75	20	\$4,253.40	15%	75%	\$0.21	172.21	175.90	RTF Workbook
Single Family	Heating	ENERGY STAR Home Design	household	New	756.07	20	\$4,253.40	15%	75%	\$0.21	248.25	247.19	RTF Workbook
Single Family	Water Heating	ENERGY STAR Home Design	household	New	404.33	20	\$4,253.40	15%	75%	\$0.21	223.57	250.62	RTF Workbook
Single Family	Interior Lighting	ENERGY STAR Home Design	household	New	326.95	20	\$4,253.40	15%	75%	\$0.21	917.66	1,021.70	RTF Workbook
Single Family	Cooling	Behavioral Programs	household	New	4.67	1	\$5.00	39%	97%	\$0.07	2.77	2.81	AEG Research

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Single Family	Heating	Behavioral Programs	household	New	9.28	1	\$5.00	39%	97%	\$0.07	5.04	6.20	AEG Research
Single Family	Water Heating	Behavioral Programs	household	New	3.79	1	\$5.00	39%	97%	\$0.07	1.83	2.57	AEG Research
Single Family	Interior Lighting	Behavioral Programs	household	New	7.05	1	\$5.00	39%	97%	\$0.07	3.08	6.53	AEG Research
Single Family	Exterior Lighting	Behavioral Programs	household	New	1.56	1	\$5.00	39%	97%	\$0.07	0.59	1.82	AEG Research
Single Family	Appliances	Behavioral Programs	household	New	17.30	1	\$5.00	39%	97%	\$0.07	9.67	10.54	AEG Research
Single Family	Electronics	Behavioral Programs	household	New	11.80	1	\$5.00	39%	97%	\$0.07	7.44	6.61	AEG Research
Single Family	Miscellaneous	Behavioral Programs	household	New	5.52	1	\$5.00	39%	97%	\$0.07	3.25	3.34	AEG Research
Single Family	Interior Lighting	Interior Lighting - General Service CFLs	GSL lamp	New	9.84	9	-\$0.13	0%	48%	\$0.00	82.09	231.21	RTF Workbook
Single Family	Interior Lighting	Interior Lighting - Exempted CFLs	Exempt lamp	New	24.14	5	-\$2.74	0%	48%	-\$0.02	92.09	115.07	RTF Workbook
Multifamily	Cooling	Insulation - Ceiling Installation	sqft roof - mf	Existing	0.07	45	\$0.75	13%	38%	\$0.09	79.82	87.40	7th Power Plan
Multifamily	Heating	Insulation - Ceiling Installation	sqft roof - mf	Existing	0.63	45	\$0.75	13%	38%	\$0.09	976.92	977.89	7th Power Plan
Multifamily	Cooling	Insulation - Ceiling Upgrade	sqft roof - mf	Existing	0.01	45	\$1.01	13%	38%	\$0.71	8.91	12.04	7th Power Plan
Multifamily	Heating	Insulation - Ceiling Upgrade	sqft roof - mf	Existing	0.09	45	\$1.01	13%	38%	\$0.71	141.61	150.00	7th Power Plan
Multifamily	Cooling	Insulation - Radiant Barrier	sqft roof - mf	Existing	0.05	15	\$0.67	4%	19%	\$0.11	35.08	46.78	AEG Research
Multifamily	Heating	Insulation - Radiant Barrier	sqft roof - mf	Existing	0.55	15	\$0.67	4%	19%	\$0.11	506.71	532.07	AEG Research
Multifamily	Cooling	Insulation - Wall Cavity Installation	sqft wall	Existing	0.01	45	\$1.06	40%	40%	\$0.07	0.00	0.00	7th Power Plan
Multifamily	Heating	Insulation - Wall Cavity Installation	sqft wall	Existing	1.29	45	\$1.06	40%	40%	\$0.07	0.00	0.00	7th Power Plan
Multifamily	Cooling	Insulation - Wall Sheathing	sqft wall	Existing	0.00	20	\$0.93	15%	15%	\$0.53	0.00	0.00	AEG-BEST
Multifamily	Heating	Insulation - Wall Sheathing	sqft wall	Existing	0.14	20	\$0.93	15%	15%	\$0.53	0.00	0.00	AEG-BEST
Multifamily	Cooling	Insulation - Floor Installation	sqft floor cs - mh	Existing	-0.01	45	\$1.01	7%	30%	\$0.11	-6.07	-6.75	7th Power Plan
Multifamily	Heating	Insulation - Floor Installation	sqft floor cs - mh	Existing	0.73	45	\$1.01	7%	30%	\$0.11	1,095.78	1,112.88	7th Power Plan
Multifamily	Cooling	Insulation - Floor Upgrade	sqft floor cs - mh	Existing	0.00	25	\$3.39	7%	30%	\$12.18	0.00	0.00	7th Power Plan

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Multifamily	Heating	Insulation - Floor Upgrade	sqft floor cs - mh	Existing	0.02	25	\$3.39	7%	30%	\$12.18	30.08	34.40	7th Power Plan
Multifamily	Cooling	Insulation - Foundation	household	Existing	-7.02	70	\$1,241.19	7%	7%	\$0.40	0.00	0.00	RTF Workbook
Multifamily	Heating	Insulation - Foundation	household	Existing	230.20	70	\$1,241.19	7%	7%	\$0.40	0.00	0.00	RTF Workbook
Multifamily	Cooling	Insulation - Ducting	household	Existing	4.26	18	\$528.00	2%	60%	\$1.01	6.59	10.27	AEG-BEST
Multifamily	Heating	Insulation - Ducting	household	Existing	38.66	18	\$528.00	2%	60%	\$1.01	7.78	9.19	AEG-BEST
Multifamily	Cooling	Ducting - Repair and Sealing	household	Existing	11.27	20	\$384.79	30%	75%	\$0.21	14.20	20.28	7th Power Plan
Multifamily	Heating	Ducting - Repair and Sealing	household	Existing	149.34	20	\$384.79	30%	75%	\$0.21	24.15	26.39	7th Power Plan
Multifamily	Cooling	Building Shell - Infiltration Control	sqft home	Existing	0.00	15	\$0.68	16%	75%	\$0.70	6.54	9.58	7th Power Plan
Multifamily	Heating	Building Shell - Infiltration Control	sqft home	Existing	0.09	15	\$0.68	16%	75%	\$0.70	630.57	712.03	7th Power Plan
Multifamily	Cooling	Windows - High Efficiency/ENERGY STAR	sqft window	Existing	0.14	45	\$18.29	26%	75%	\$0.92	65.55	88.79	7th Power Plan
Multifamily	Heating	Windows - High Efficiency/ENERGY STAR	sqft window	Existing	1.29	45	\$18.29	26%	75%	\$0.92	841.88	893.85	7th Power Plan
Multifamily	Cooling	Windows - Install Reflective Film	sqft window	Existing	0.01	45	\$5.61	33%	75%	\$0.23	4.02	5.36	7th Power Plan
Multifamily	Heating	Windows - Install Reflective Film	sqft window	Existing	1.83	45	\$5.61	33%	75%	\$0.23	1,027.91	1,061.73	7th Power Plan
Multifamily	Cooling	Doors - Storm and Thermal	household	Existing	1.26	20	\$682.67	74%	80%	\$1.63	0.49	0.73	AEG-BEST
Multifamily	Heating	Doors - Storm and Thermal	household	Existing	31.89	20	\$682.67	74%	80%	\$1.63	17.70	20.23	AEG-BEST
Multifamily	Cooling	Ductless Mini Split Heat Pump (Zonal)	household	Existing	58.97	15	\$3,448.86	0%	38%	\$0.60	68.73	88.03	7th Power Plan
Multifamily	Heating	Ductless Mini Split Heat Pump (Zonal)	household	Existing	487.29	15	\$3,448.86	0%	38%	\$0.60	1,535.22	1,635.99	7th Power Plan
Multifamily	Cooling	Ductless Mini Split Heat Pump (Ducted Forced Air)	household	Existing	22.23	15	\$3,517.21	0%	38%	\$0.42	22.26	30.94	7th Power Plan
Multifamily	Heating	Ductless Mini Split Heat Pump (Ducted Forced Air)	household	Existing	782.76	15	\$3,517.21	0%	38%	\$0.42	70.44	75.10	7th Power Plan
Multifamily	Cooling	Space Heating - Heat Recovery Ventilator	household	Existing	1.55	20	\$1,303.92	0%	0%	\$0.78	0.00	0.00	7th Power Plan
Multifamily	Heating	Space Heating - Heat Recovery Ventilator	household	Existing	138.39	20	\$1,303.92	0%	0%	\$0.78	0.00	0.00	7th Power Plan
Multifamily	Cooling	Furnace - Conversion to Air-Source Heat Pump	household	Existing	0.00	15	\$2,955.28	0%	0%	\$0.73	0.00	0.00	7th Power Plan

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Multifamily	Heating	Furnace - Conversion to Air-Source Heat Pump	household	Existing	398.59	15	\$2,955.28	0%	0%	\$0.73	0.00	0.00	7th Power Plan
Multifamily	Cooling	Room AC - Removal of Second Unit	household	Existing	344.56	3	\$18.00	0%	50%	\$0.02	622.31	649.41	CA DEER
Multifamily	Cooling	Central AC - Maintenance and Tune-Up	household	Existing	13.74	6	\$275.74	1%	75%	\$2.84	26.61	35.08	Illinois TRM
Multifamily	Cooling	Central Heat Pump - Controls and Commissioning	household	Existing	0.15	15	\$581.99	65%	75%	\$0.49	0.00	0.00	7th Power Plan
Multifamily	Heating	Central Heat Pump - Controls and Commissioning	household	Existing	114.01	15	\$581.99	65%	75%	\$0.49	1.31	1.43	7th Power Plan
Multifamily	Cooling	Ceiling Fan - ENERGY STAR	ceiling fans	Existing	8.64	10	\$47.23	40%	75%	\$0.56	36.54	45.42	ENERGY STAR
Multifamily	Cooling	Whole-House Fan - Installation	household	Existing	9.15	20	\$714.44	2%	10%	\$5.38	2.08	3.24	California Public Utilities Commission
Multifamily	Cooling	Thermostat - WiFi/Interactive	household	Existing	10.87	10	\$256.67	5%	50%	\$0.25	30.58	40.22	7th Power Plan
Multifamily	Heating	Thermostat - WiFi/Interactive	household	Existing	112.73	10	\$256.67	5%	50%	\$0.25	449.99	475.54	7th Power Plan
Multifamily	Water Heating	Water Heater - Drainwater Heat Recovery	household	Existing	138.09	40	\$837.67	1%	5%	\$0.43	31.11	37.48	7th Power Plan
Multifamily	Water Heating	Water Heater - Faucet Aerators	aerators	Existing	49.34	15	\$5.13	13%	50%	\$0.01	221.15	270.50	7th Power Plan
Multifamily	Water Heating	Water Heater - Low-Flow Showerheads	showerheads	Existing	154.07	10	\$26.56	19%	75%	\$0.02	676.25	899.33	7th Power Plan
Multifamily	Water Heating	Water Heater - Pipe Insulation	feet pipe	Existing	16.02	15	\$3.26	12%	75%	\$0.02	305.38	400.97	Mid-Atlantic TRM
Multifamily	Water Heating	Water Heater - Desuperheater	household	Existing	849.51	20	\$1,136.89	0%	0%	\$0.11	0.00	0.00	RTF Workbook
Multifamily	Water Heating	Water Heater - Temperature Setback	household	Existing	47.11	2	\$5.00	41%	75%	\$0.04	95.55	131.59	Illinois TRM
Multifamily	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	showerheads	Existing	25.63	10	\$19.30	16%	45%	\$0.09	58.11	79.61	RTF Workbook
Multifamily	Water Heating	Water Heater - Solar System	household	Existing	628.67	20	\$8,847.45	2%	30%	\$1.14	670.67	847.14	7th Power Plan
Multifamily	Interior Lighting	Interior Lighting - Occupancy Sensors	occ sens	Existing	73.42	8	\$99.16	0%	10%	\$0.17	82.06	165.84	Pacific Gas and Electric Research

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Multifamily	Exterior Lighting	Exterior Lighting - Photosensor Control	ext fixt	Existing	14.50	15	\$10.19	1%	50%	\$0.06	116.39	274.25	Michigan Energy Measures Database
Multifamily	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	ext fixt pv	Existing	18.28	3	\$28.00	1%	30%	\$0.35	38.91	107.76	AEG Research
Multifamily	Exterior Lighting	Exterior Lighting - Timeclock Installation	ext fixt	Existing	9.89	10	\$19.15	1%	50%	\$0.19	74.90	193.61	Ontario Power TRM
Multifamily	Appliances	Refrigerator - Decommissioning and Recycling	household	Existing	297.87	6	\$143.58	0%	65%	\$0.09	262.29	292.11	PacifiCorp '13-'14 Evaluation
Multifamily	Appliances	Freezer - Decommissioning and Recycling	household	Existing	290.47	5	\$143.58	0%	10%	\$0.11	118.86	133.56	PacifiCorp '13-'14 Evaluation
Multifamily	Electronics	Advanced Power Strips - Tier 1	smart strip	Existing	28.82	5	\$15.83	8%	25%	\$0.12	175.60	172.34	7th Power Plan
Multifamily	Electronics	Advanced Power Strips - Tier 2	smart strip	Existing	183.93	5	\$50.49	8%	25%	\$0.06	1,154.02	1,098.13	7th Power Plan
Multifamily	Miscellaneous	Pool Pump - Timer	household	Existing	0.00	10	\$85.22	0%	75%	\$0.00	0.00	0.00	Ontario Power TRM
Multifamily	Miscellaneous	Pool Heater - Solar Water Heating System	household	Existing	0.00	20	\$3,767.92	0%	30%	\$0.00	0.00	0.00	AEG Research
Multifamily	Cooling	ENERGY STAR Home Design	household	Existing	22.93	20	\$4,253.40	0%	0%	\$0.57	0.00	0.00	RTF Workbook
Multifamily	Heating	ENERGY STAR Home Design	household	Existing	173.00	20	\$4,253.40	0%	0%	\$0.57	0.00	0.00	RTF Workbook
Multifamily	Water Heating	ENERGY STAR Home Design	household	Existing	262.32	20	\$4,253.40	0%	0%	\$0.57	0.00	0.00	RTF Workbook
Multifamily	Interior Lighting	ENERGY STAR Home Design	household	Existing	112.38	20	\$4,253.40	0%	0%	\$0.57	0.00	0.00	RTF Workbook
Multifamily	Cooling	Behavioral Programs	household	Existing	1.30	1	\$5.00	39%	97%	\$0.07	10.12	18.44	AEG Research
Multifamily	Heating	Behavioral Programs	household	Existing	16.30	1	\$5.00	39%	97%	\$0.07	156.67	196.18	AEG Research
Multifamily	Water Heating	Behavioral Programs	household	Existing	7.83	1	\$5.00	39%	97%	\$0.07	62.35	100.77	AEG Research
Multifamily	Interior Lighting	Behavioral Programs	household	Existing	3.48	1	\$5.00	39%	97%	\$0.07	23.33	64.49	AEG Research
Multifamily	Exterior Lighting	Behavioral Programs	household	Existing	0.64	1	\$5.00	39%	97%	\$0.07	3.42	15.00	AEG Research
Multifamily	Appliances	Behavioral Programs	household	Existing	19.20	1	\$5.00	39%	97%	\$0.07	185.56	211.35	AEG Research
Multifamily	Electronics	Behavioral Programs	household	Existing	10.07	1	\$5.00	39%	97%	\$0.07	104.83	109.26	AEG Research
Multifamily	Miscellaneous	Behavioral Programs	household	Existing	2.00	1	\$5.00	39%	97%	\$0.07	20.98	20.49	AEG Research
Multifamily	Interior Lighting	Interior Lighting - General Service CFLs	GSL lamp	Existing	8.23	9	-\$0.13	0%	45%	\$0.00	125.74	380.38	RTF Workbook

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Multifamily	Interior Lighting	Interior Lighting - Exempted CFLs	Exempt lamp	Existing	20.64	5	-\$2.74	0%	45%	-\$0.02	46.84	60.75	RTF Workbook
Multifamily	Cooling	Insulation - Ceiling Installation	sqft roof - mf	New	0.06	45	\$0.75	9%	38%	\$0.09	10.14	11.32	7th Power Plan
Multifamily	Heating	Insulation - Ceiling Installation	sqft roof - mf	New	0.64	45	\$0.75	9%	38%	\$0.09	77.30	77.36	7th Power Plan
Multifamily	Cooling	Insulation - Ceiling Upgrade	sqft roof - mf	New	0.01	45	\$1.01	9%	38%	\$0.70	1.54	1.70	7th Power Plan
Multifamily	Heating	Insulation - Ceiling Upgrade	sqft roof - mf	New	0.10	45	\$1.01	9%	38%	\$0.70	12.14	12.08	7th Power Plan
Multifamily	Cooling	Insulation - Radiant Barrier	sqft roof - mf	New	0.06	15	\$0.67	1%	5%	\$0.11	1.21	1.34	AEG Research
Multifamily	Heating	Insulation - Radiant Barrier	sqft roof - mf	New	0.57	15	\$0.67	1%	5%	\$0.11	8.72	8.68	AEG Research
Multifamily	Cooling	Insulation - Wall Cavity Installation	sqft wall	New	0.01	45	\$1.06	80%	80%	\$0.06	0.00	0.00	7th Power Plan
Multifamily	Heating	Insulation - Wall Cavity Installation	sqft wall	New	1.30	45	\$1.06	80%	80%	\$0.06	0.00	0.00	7th Power Plan
Multifamily	Cooling	Insulation - Wall Sheathing	sqft wall	New	0.01	20	\$0.93	15%	20%	\$0.53	0.26	0.28	AEG-BEST
Multifamily	Heating	Insulation - Wall Sheathing	sqft wall	New	0.15	20	\$0.93	15%	20%	\$0.53	5.82	5.78	AEG-BEST
Multifamily	Cooling	Insulation - Floor Installation	sqft floor cs - mh	New	-0.01	45	\$1.01	15%	38%	\$0.11	-0.62	-0.69	7th Power Plan
Multifamily	Heating	Insulation - Floor Installation	sqft floor cs - mh	New	0.75	45	\$1.01	15%	38%	\$0.11	70.05	69.97	7th Power Plan
Multifamily	Cooling	Insulation - Floor Upgrade	sqft floor cs - mh	New	0.00	25	\$3.39	15%	38%	\$12.07	0.00	0.00	7th Power Plan
Multifamily	Heating	Insulation - Floor Upgrade	sqft floor cs - mh	New	0.02	25	\$3.39	15%	38%	\$12.07	2.20	2.21	7th Power Plan
Multifamily	Cooling	Insulation - Foundation	household	New	-7.91	70	\$1,241.19	43%	75%	\$0.40	-2.02	-2.24	RTF Workbook
Multifamily	Heating	Insulation - Foundation	household	New	242.31	70	\$1,241.19	43%	75%	\$0.40	46.85	46.68	RTF Workbook
Multifamily	Cooling	Insulation - Ducting	household	New	4.82	18	\$528.00	14%	80%	\$0.93	1.85	2.09	AEG-BEST
Multifamily	Heating	Insulation - Ducting	household	New	46.31	18	\$528.00	14%	80%	\$0.93	1.45	1.46	AEG-BEST
Multifamily	Cooling	Ducting - Repair and Sealing	household	New	13.07	20	\$384.79	30%	75%	\$0.18	3.41	3.81	7th Power Plan
Multifamily	Heating	Ducting - Repair and Sealing	household	New	183.02	20	\$384.79	30%	75%	\$0.18	3.89	3.87	7th Power Plan
Multifamily	Cooling	Building Shell - Infiltration Control	sqft home	New	0.00	15	\$0.68	16%	75%	\$0.70	0.99	1.11	7th Power Plan

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Multifamily	Heating	Building Shell - Infiltration Control	sqft home	New	0.10	15	\$0.68	16%	75%	\$0.70	46.57	46.87	7th Power Plan
Multifamily	Cooling	Windows - High Efficiency/ENERGY STAR	sqft window	New	0.16	45	\$18.29	37%	75%	\$0.91	7.37	8.15	7th Power Plan
Multifamily	Heating	Windows - High Efficiency/ENERGY STAR	sqft window	New	1.37	45	\$18.29	37%	75%	\$0.91	47.04	46.79	7th Power Plan
Multifamily	Cooling	Windows - Install Reflective Film	sqft window	New	0.01	45	\$5.61	53%	75%	\$0.23	0.30	0.34	7th Power Plan
Multifamily	Heating	Windows - Install Reflective Film	sqft window	New	1.89	45	\$5.61	53%	75%	\$0.23	38.00	37.89	7th Power Plan
Multifamily	Cooling	Doors - Storm and Thermal	household	New	0.35	20	\$682.67	80%	80%	\$3.17	0.00	0.00	AEG-BEST
Multifamily	Heating	Doors - Storm and Thermal	household	New	18.21	20	\$682.67	80%	80%	\$3.17	0.00	0.00	AEG-BEST
Multifamily	Cooling	Ductless Mini Split Heat Pump (Zonal)	household	New	60.55	15	\$3,448.86	3%	38%	\$0.61	4.95	5.46	7th Power Plan
Multifamily	Heating	Ductless Mini Split Heat Pump (Zonal)	household	New	519.55	15	\$3,448.86	3%	38%	\$0.61	122.85	121.17	7th Power Plan
Multifamily	Cooling	Ductless Mini Split Heat Pump (Ducted Forced Air)	household	New	26.31	15	\$3,517.21	3%	38%	\$0.42	6.48	7.14	7th Power Plan
Multifamily	Heating	Ductless Mini Split Heat Pump (Ducted Forced Air)	household	New	835.17	15	\$3,517.21	3%	38%	\$0.42	16.50	16.29	7th Power Plan
Multifamily	Cooling	Space Heating - Heat Recovery Ventilator	household	New	1.85	20	\$1,303.92	0%	0%	\$0.67	0.00	0.00	7th Power Plan
Multifamily	Heating	Space Heating - Heat Recovery Ventilator	household	New	172.69	20	\$1,303.92	0%	0%	\$0.67	0.00	0.00	7th Power Plan
Multifamily	Cooling	Furnace - Conversion to Air-Source Heat Pump	household	New	0.00	15	\$2,955.28	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Multifamily	Heating	Furnace - Conversion to Air-Source Heat Pump	household	New	0.00	15	\$2,955.28	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Multifamily	Cooling	Room AC - Removal of Second Unit	household	New	289.08	3	\$18.00	0%	50%	\$0.02	5.89	6.86	CA DEER
Multifamily	Cooling	Central AC - Maintenance and Tune-Up	household	New	16.48	6	\$275.74	1%	75%	\$2.75	2.12	2.46	Illinois TRM
Multifamily	Cooling	Central Heat Pump - Controls and Commissioning	household	New	0.18	15	\$581.99	25%	75%	\$0.00	0.00	0.00	7th Power Plan
Multifamily	Heating	Central Heat Pump - Controls and Commissioning	household	New	0.00	15	\$581.99	25%	75%	\$0.00	0.00	0.00	7th Power Plan

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Multifamily	Cooling	Ceiling Fan - ENERGY STAR	ceiling fans	New	8.24	10	\$47.23	40%	75%	\$0.68	3.56	3.87	ENERGY STAR
Multifamily	Cooling	Whole-House Fan - Installation	household	New	10.98	20	\$714.44	2%	10%	\$5.22	0.54	0.61	California Public Utilities Commission
Multifamily	Cooling	Thermostat - WiFi/Interactive	household	New	12.63	10	\$256.67	5%	50%	\$0.25	4.81	5.30	7th Power Plan
Multifamily	Heating	Thermostat - WiFi/Interactive	household	New	120.85	10	\$256.67	5%	50%	\$0.25	34.71	34.33	7th Power Plan
Multifamily	Water Heating	Water Heater - Drainwater Heat Recovery	household	New	134.80	40	\$837.67	1%	10%	\$0.45	5.85	6.56	7th Power Plan
Multifamily	Water Heating	Water Heater - Faucet Aerators	aerators	New	39.86	15	\$5.13	9%	50%	\$0.01	13.03	15.29	7th Power Plan
Multifamily	Water Heating	Water Heater - Low-Flow Showerheads	showerheads	New	126.09	10	\$26.56	14%	75%	\$0.03	19.49	24.47	7th Power Plan
Multifamily	Water Heating	Water Heater - Pipe Insulation	feet pipe	New	15.06	15	\$3.26	12%	75%	\$0.02	11.80	14.51	Mid-Atlantic TRM
Multifamily	Water Heating	Water Heater - Desuperheater	household	New	773.70	20	\$1,136.89	0%	0%	\$0.12	0.00	0.00	RTF Workbook
Multifamily	Water Heating	Water Heater - Temperature Setback	household	New	45.89	2	\$5.00	51%	75%	\$0.05	0.25	0.32	Illinois TRM
Multifamily	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	showerheads	New	21.46	10	\$19.30	16%	45%	\$0.11	1.60	2.00	RTF Workbook
Multifamily	Water Heating	Water Heater - Solar System	household	New	615.93	20	\$8,847.45	2%	30%	\$1.19	48.06	54.50	7th Power Plan
Multifamily	Interior Lighting	Interior Lighting - Occupancy Sensors	occ sens	New	70.25	8	\$99.16	2%	10%	\$0.16	2.93	5.36	Pacific Gas and Electric Research
Multifamily	Exterior Lighting	Exterior Lighting - Photosensor Control	ext fixt	New	10.59	15	\$10.19	0%	50%	\$0.08	7.60	13.70	Michigan Energy Measures Database
Multifamily	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	ext fixt pv	New	11.27	3	\$28.00	1%	30%	\$0.58	0.41	1.25	AEG Research
Multifamily	Exterior Lighting	Exterior Lighting - Timeclock Installation	ext fixt	New	7.64	10	\$19.15	0%	50%	\$0.24	4.26	8.55	Ontario Power TRM
Multifamily	Appliances	Refrigerator - Decommissioning and Recycling	household	New	279.88	6	\$143.58	0%	65%	\$0.09	31.96	34.36	PacificCorp '13-'14 Evaluation
Multifamily	Appliances	Freezer - Decommissioning and Recycling	household	New	272.55	5	\$143.58	0%	10%	\$0.11	0.48	0.52	PacificCorp '13-'14 Evaluation

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Multifamily	Electronics	Advanced Power Strips - Tier 1	smart strip	New	34.59	5	\$15.83	8%	25%	\$0.10	8.87	8.08	7th Power Plan
Multifamily	Electronics	Advanced Power Strips - Tier 2	smart strip	New	215.74	5	\$50.49	8%	25%	\$0.05	55.29	50.49	7th Power Plan
Multifamily	Miscellaneous	Pool Pump - Timer	household	New	0.00	10	\$85.22	0%	75%	\$0.00	0.00	0.00	Ontario Power TRM
Multifamily	Miscellaneous	Pool Heater - Solar Water Heating System	household	New	0.00	20	\$3,767.92	0%	30%	\$0.00	0.00	0.00	AEG Research
Multifamily	Cooling	ENERGY STAR Home Design	household	New	27.51	20	\$4,253.40	15%	75%	\$0.54	23.13	24.18	RTF Workbook
Multifamily	Heating	ENERGY STAR Home Design	household	New	192.90	20	\$4,253.40	15%	75%	\$0.54	120.22	118.81	RTF Workbook
Multifamily	Water Heating	ENERGY STAR Home Design	household	New	260.06	20	\$4,253.40	15%	75%	\$0.54	67.20	75.63	RTF Workbook
Multifamily	Interior Lighting	ENERGY STAR Home Design	household	New	132.52	20	\$4,253.40	15%	75%	\$0.54	109.81	130.15	RTF Workbook
Multifamily	Cooling	Behavioral Programs	household	New	2.61	1	\$5.00	39%	97%	\$0.07	0.56	0.66	AEG Research
Multifamily	Heating	Behavioral Programs	household	New	17.16	1	\$5.00	39%	97%	\$0.07	3.86	4.19	AEG Research
Multifamily	Water Heating	Behavioral Programs	household	New	4.54	1	\$5.00	39%	97%	\$0.07	0.84	1.22	AEG Research
Multifamily	Interior Lighting	Behavioral Programs	household	New	3.76	1	\$5.00	39%	97%	\$0.07	0.57	1.58	AEG Research
Multifamily	Exterior Lighting	Behavioral Programs	household	New	0.83	1	\$5.00	39%	97%	\$0.07	0.12	0.39	AEG Research
Multifamily	Appliances	Behavioral Programs	household	New	20.62	1	\$5.00	39%	97%	\$0.07	4.48	4.85	AEG Research
Multifamily	Electronics	Behavioral Programs	household	New	12.14	1	\$5.00	39%	97%	\$0.07	2.95	2.70	AEG Research
Multifamily	Miscellaneous	Behavioral Programs	household	New	1.82	1	\$5.00	39%	97%	\$0.07	0.43	0.41	AEG Research
Multifamily	Interior Lighting	Interior Lighting - General Service CFLs	GSL lamp	New	7.76	9	-\$0.13	0%	45%	\$0.00	13.19	38.86	RTF Workbook
Multifamily	Interior Lighting	Interior Lighting - Exempted CFLs	Exempt lamp	New	19.66	5	-\$2.74	0%	45%	-\$0.02	3.31	4.29	RTF Workbook
Mobile Home	Cooling	Insulation - Ceiling Installation	sqft roof	Existing	0.13	25	\$2.16	10%	38%	\$0.44	236.73	301.13	7th Power Plan
Mobile Home	Heating	Insulation - Ceiling Installation	sqft roof	Existing	0.24	25	\$2.16	10%	38%	\$0.44	82.04	100.41	7th Power Plan
Mobile Home	Cooling	Insulation - Ceiling Upgrade	sqft roof	Existing	0.02	25	\$2.16	10%	38%	\$1.47	34.98	45.54	7th Power Plan
Mobile Home	Heating	Insulation - Ceiling Upgrade	sqft roof	Existing	0.09	25	\$2.16	10%	38%	\$1.47	30.43	37.74	7th Power Plan
Mobile Home	Cooling	Insulation - Radiant Barrier	sqft roof	Existing	0.14	15	\$0.67	4%	19%	\$0.03	138.12	164.14	AEG Research
Mobile Home	Heating	Insulation - Radiant Barrier	sqft roof	Existing	1.96	15	\$0.67	4%	19%	\$0.03	402.79	404.42	AEG Research

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Mobile Home	Cooling	Insulation - Wall Cavity Installation	sqft wall	Existing	0.02	25	\$1.42	40%	40%	\$0.09	0.00	0.00	7th Power Plan
Mobile Home	Heating	Insulation - Wall Cavity Installation	sqft wall	Existing	1.29	25	\$1.42	40%	40%	\$0.09	0.00	0.00	7th Power Plan
Mobile Home	Cooling	Insulation - Wall Sheathing	sqft wall	Existing	0.01	20	\$0.93	15%	15%	\$0.17	0.00	0.00	AEG-BEST
Mobile Home	Heating	Insulation - Wall Sheathing	sqft wall	Existing	0.42	20	\$0.93	15%	15%	\$0.17	0.00	0.00	AEG-BEST
Mobile Home	Cooling	Insulation - Floor Installation	sqft floor cs	Existing	-0.02	25	\$3.39	18%	30%	\$0.83	-7.74	-10.04	7th Power Plan
Mobile Home	Heating	Insulation - Floor Installation	sqft floor cs	Existing	0.32	25	\$3.39	18%	30%	\$0.83	23.51	28.87	7th Power Plan
Mobile Home	Cooling	Insulation - Floor Upgrade	sqft floor cs	Existing	0.00	25	\$3.39	18%	30%	\$1.82	0.00	0.00	7th Power Plan
Mobile Home	Heating	Insulation - Floor Upgrade	sqft floor cs	Existing	0.14	25	\$3.39	18%	30%	\$1.82	10.06	12.37	7th Power Plan
Mobile Home	Cooling	Insulation - Foundation	household	Existing	-19.56	70	\$1,241.19	0%	0%	\$0.11	0.00	0.00	RTF Workbook
Mobile Home	Heating	Insulation - Foundation	household	Existing	894.89	70	\$1,241.19	0%	0%	\$0.11	0.00	0.00	RTF Workbook
Mobile Home	Cooling	Insulation - Ducting	household	Existing	45.59	18	\$528.00	48%	60%	\$0.10	17.53	21.63	AEG-BEST
Mobile Home	Heating	Insulation - Ducting	household	Existing	425.39	18	\$528.00	48%	60%	\$0.10	68.00	78.46	AEG-BEST
Mobile Home	Cooling	Ducting - Repair and Sealing	household	Existing	47.98	20	\$769.57	30%	75%	\$0.05	70.58	86.03	7th Power Plan
Mobile Home	Heating	Ducting - Repair and Sealing	household	Existing	1,425.23	20	\$769.57	30%	75%	\$0.05	931.79	943.42	7th Power Plan
Mobile Home	Cooling	Building Shell - Infiltration Control	sqft home	Existing	0.00	25	\$3.18	16%	75%	\$1.43	25.32	32.90	7th Power Plan
Mobile Home	Heating	Building Shell - Infiltration Control	sqft home	Existing	0.16	25	\$3.18	16%	75%	\$1.43	238.57	293.23	7th Power Plan
Mobile Home	Cooling	Windows - High Efficiency/ENERGY STAR	sqft window	Existing	0.46	25	\$21.16	8%	75%	\$0.37	336.43	418.32	7th Power Plan
Mobile Home	Heating	Windows - High Efficiency/ENERGY STAR	sqft window	Existing	3.98	25	\$21.16	8%	75%	\$0.37	552.60	658.27	7th Power Plan
Mobile Home	Cooling	Windows - Install Reflective Film	sqft window	Existing	0.03	25	\$1.40	16%	75%	\$0.08	21.99	26.43	7th Power Plan
Mobile Home	Heating	Windows - Install Reflective Film	sqft window	Existing	1.56	25	\$1.40	16%	75%	\$0.08	206.91	215.27	7th Power Plan
Mobile Home	Cooling	Doors - Storm and Thermal	household	Existing	5.41	20	\$682.67	3%	80%	\$0.32	36.52	46.35	AEG-BEST
Mobile Home	Heating	Doors - Storm and Thermal	household	Existing	163.50	20	\$682.67	3%	80%	\$0.32	208.32	253.06	AEG-BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Mobile Home	Cooling	Ductless Mini Split Heat Pump (Zonal)	household	Existing	195.26	15	\$3,448.86	0%	38%	\$0.18	127.51	147.02	7th Power Plan
Mobile Home	Heating	Ductless Mini Split Heat Pump (Zonal)	household	Existing	1,593.43	15	\$3,448.86	0%	38%	\$0.18	214.85	244.67	7th Power Plan
Mobile Home	Cooling	Ductless Mini Split Heat Pump (Ducted Forced Air)	household	Existing	86.27	15	\$3,517.21	0%	38%	\$0.07	103.88	123.57	7th Power Plan
Mobile Home	Heating	Ductless Mini Split Heat Pump (Ducted Forced Air)	household	Existing	5,356.70	15	\$3,517.21	0%	38%	\$0.07	2,659.90	2,751.61	7th Power Plan
Mobile Home	Cooling	Space Heating - Heat Recovery Ventilator	household	Existing	5.97	20	\$1,303.92	0%	0%	\$0.20	0.00	0.00	7th Power Plan
Mobile Home	Heating	Space Heating - Heat Recovery Ventilator	household	Existing	530.96	20	\$1,303.92	0%	0%	\$0.20	0.00	0.00	7th Power Plan
Mobile Home	Cooling	Furnace - Conversion to Air-Source Heat Pump	household	Existing	0.00	15	\$2,955.28	0%	0%	\$0.11	0.00	0.00	7th Power Plan
Mobile Home	Heating	Furnace - Conversion to Air-Source Heat Pump	household	Existing	2,660.65	15	\$2,955.28	0%	0%	\$0.11	0.00	0.00	7th Power Plan
Mobile Home	Cooling	Room AC - Removal of Second Unit	household	Existing	1,003.34	3	\$18.00	0%	50%	\$0.01	920.00	982.57	CA DEER
Mobile Home	Cooling	Central AC - Maintenance and Tune-Up	household	Existing	50.29	6	\$275.74	7%	75%	\$0.86	106.47	126.36	Illinois TRM
Mobile Home	Cooling	Central Heat Pump - Controls and Commissioning	household	Existing	-4.89	15	\$581.99	65%	75%	\$0.13	-0.03	-0.03	7th Power Plan
Mobile Home	Heating	Central Heat Pump - Controls and Commissioning	household	Existing	409.58	15	\$581.99	65%	75%	\$0.13	2.47	2.85	7th Power Plan
Mobile Home	Cooling	Ceiling Fan - ENERGY STAR	ceiling fans	Existing	8.69	10	\$47.23	40%	75%	\$0.60	52.95	61.91	ENERGY STAR
Mobile Home	Cooling	Whole-House Fan - Installation	household	Existing	33.76	20	\$714.44	15%	40%	\$1.63	26.28	34.70	California Public Utilities Commission
Mobile Home	Cooling	Thermostat - WiFi/Interactive	household	Existing	30.72	10	\$256.67	5%	75%	\$0.07	193.81	228.78	7th Power Plan
Mobile Home	Heating	Thermostat - WiFi/Interactive	household	Existing	393.44	10	\$256.67	5%	75%	\$0.07	460.52	518.64	7th Power Plan
Mobile Home	Water Heating	Water Heater - Drainwater Heat Recovery	household	Existing	228.48	40	\$837.67	1%	5%	\$0.26	40.06	47.92	7th Power Plan
Mobile Home	Water Heating	Water Heater - Faucet Aerators	aerators	Existing	93.71	15	\$5.13	28%	50%	\$0.01	190.66	233.11	7th Power Plan

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Mobile Home	Water Heating	Water Heater - Low-Flow Showerheads	showerheads	Existing	203.66	10	\$26.56	42%	75%	\$0.02	406.94	536.93	7th Power Plan
Mobile Home	Water Heating	Water Heater - Pipe Insulation	feet pipe	Existing	25.84	15	\$3.26	12%	75%	\$0.01	379.43	494.29	Mid-Atlantic TRM
Mobile Home	Water Heating	Water Heater - Desuperheater	household	Existing	1,400.42	20	\$1,136.89	0%	0%	\$0.07	0.00	0.00	RTF Workbook
Mobile Home	Water Heating	Water Heater - Temperature Setback	household	Existing	77.76	2	\$5.00	41%	75%	\$0.03	122.65	164.80	Illinois TRM
Mobile Home	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	showerheads	Existing	26.45	10	\$19.30	16%	45%	\$0.09	46.53	62.41	RTF Workbook
Mobile Home	Water Heating	Water Heater - Solar System	household	Existing	1,037.74	20	\$8,847.45	1%	30%	\$0.71	890.59	1,109.90	7th Power Plan
Mobile Home	Interior Lighting	Interior Lighting - Occupancy Sensors	occ sens	Existing	89.68	8	\$99.16	0%	10%	\$0.13	87.83	157.82	Pacific Gas and Electric Research
Mobile Home	Exterior Lighting	Exterior Lighting - Photosensor Control	ext fixt	Existing	12.73	15	\$10.19	7%	50%	\$0.07	76.67	174.03	Michigan Energy Measures Database
Mobile Home	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	ext fixt pv	Existing	20.70	3	\$28.00	1%	30%	\$0.32	38.45	99.58	AEG Research
Mobile Home	Exterior Lighting	Exterior Lighting - Timeclock Installation	ext fixt	Existing	11.22	10	\$19.15	0%	50%	\$0.17	74.85	180.87	Ontario Power TRM
Mobile Home	Appliances	Refrigerator - Decommissioning and Recycling	household	Existing	299.58	6	\$143.58	0%	65%	\$0.09	584.39	646.29	PacifiCorp '13-'14 Evaluation
Mobile Home	Appliances	Freezer - Decommissioning and Recycling	household	Existing	290.17	5	\$143.58	0%	10%	\$0.11	235.58	264.19	PacifiCorp '13-'14 Evaluation
Mobile Home	Electronics	Advanced Power Strips - Tier 1	smart strip	Existing	28.33	5	\$15.83	8%	25%	\$0.12	136.64	134.94	7th Power Plan
Mobile Home	Electronics	Advanced Power Strips - Tier 2	smart strip	Existing	179.73	5	\$50.49	8%	25%	\$0.06	888.46	855.12	7th Power Plan
Mobile Home	Miscellaneous	Pool Pump - Timer	household	Existing	0.00	10	\$85.22	0%	75%	\$0.00	0.00	0.00	Ontario Power TRM
Mobile Home	Miscellaneous	Pool Heater - Solar Water Heating System	household	Existing	0.00	20	\$3,767.92	0%	30%	\$0.00	0.00	0.00	AEG Research
Mobile Home	Cooling	ENERGY STAR Home Design	household	Existing	62.87	20	\$4,253.40	0%	0%	\$0.26	0.00	0.00	RTF Workbook
Mobile Home	Heating	ENERGY STAR Home Design	household	Existing	606.55	20	\$4,253.40	0%	0%	\$0.26	0.00	0.00	RTF Workbook
Mobile Home	Water Heating	ENERGY STAR Home Design	household	Existing	432.42	20	\$4,253.40	0%	0%	\$0.26	0.00	0.00	RTF Workbook

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Mobile Home	Interior Lighting	ENERGY STAR Home Design	household	Existing	167.90	20	\$4,253.40	0%	0%	\$0.26	0.00	0.00	RTF Workbook
Mobile Home	Cooling	Behavioral Programs	household	Existing	4.41	1	\$5.00	39%	97%	\$0.07	32.01	44.34	AEG Research
Mobile Home	Heating	Behavioral Programs	household	Existing	10.01	1	\$5.00	39%	97%	\$0.07	66.37	108.56	AEG Research
Mobile Home	Water Heating	Behavioral Programs	household	Existing	9.13	1	\$5.00	39%	97%	\$0.07	58.68	91.25	AEG Research
Mobile Home	Interior Lighting	Behavioral Programs	household	Existing	3.82	1	\$5.00	39%	97%	\$0.07	22.15	52.94	AEG Research
Mobile Home	Exterior Lighting	Behavioral Programs	household	Existing	0.56	1	\$5.00	39%	97%	\$0.07	2.47	9.85	AEG Research
Mobile Home	Appliances	Behavioral Programs	household	Existing	17.74	1	\$5.00	39%	97%	\$0.07	136.08	156.92	AEG Research
Mobile Home	Electronics	Behavioral Programs	household	Existing	8.70	1	\$5.00	39%	97%	\$0.07	71.75	76.12	AEG Research
Mobile Home	Miscellaneous	Behavioral Programs	household	Existing	5.70	1	\$5.00	39%	97%	\$0.07	48.46	45.78	AEG Research
Mobile Home	Interior Lighting	Interior Lighting - General Service CFLs	GSL lamp	Existing	12.28	9	-\$0.13	0%	46%	\$0.00	90.23	278.04	RTF Workbook
Mobile Home	Interior Lighting	Interior Lighting - Exempted CFLs	Exempt lamp	Existing	31.69	5	-\$2.74	0%	46%	-\$0.01	129.10	167.38	RTF Workbook
Mobile Home	Cooling	Insulation - Ceiling Installation	sqft roof	New	0.13	25	\$2.16	28%	38%	\$0.46	5.52	5.82	7th Power Plan
Mobile Home	Heating	Insulation - Ceiling Installation	sqft roof	New	0.27	25	\$2.16	28%	38%	\$0.46	2.16	2.19	7th Power Plan
Mobile Home	Cooling	Insulation - Ceiling Upgrade	sqft roof	New	0.02	25	\$2.16	28%	38%	\$1.49	0.83	0.88	7th Power Plan
Mobile Home	Heating	Insulation - Ceiling Upgrade	sqft roof	New	0.10	25	\$2.16	28%	38%	\$1.49	0.80	0.82	7th Power Plan
Mobile Home	Cooling	Insulation - Radiant Barrier	sqft roof	New	0.13	15	\$0.67	1%	5%	\$0.03	2.18	2.31	AEG Research
Mobile Home	Heating	Insulation - Radiant Barrier	sqft roof	New	1.96	15	\$0.67	1%	5%	\$0.03	6.43	6.45	AEG Research
Mobile Home	Cooling	Insulation - Wall Cavity Installation	sqft wall	New	0.02	25	\$1.42	68%	80%	\$0.09	2.07	2.19	7th Power Plan
Mobile Home	Heating	Insulation - Wall Cavity Installation	sqft wall	New	1.34	25	\$1.42	68%	80%	\$0.09	28.38	28.42	7th Power Plan
Mobile Home	Cooling	Insulation - Wall Sheathing	sqft wall	New	0.01	20	\$0.93	15%	20%	\$0.17	0.42	0.45	AEG-BEST
Mobile Home	Heating	Insulation - Wall Sheathing	sqft wall	New	0.45	20	\$0.93	15%	20%	\$0.17	3.98	4.02	AEG-BEST
Mobile Home	Cooling	Insulation - Floor Installation	sqft floor cs	New	-0.02	25	\$3.39	33%	38%	\$0.83	-0.20	-0.22	7th Power Plan
Mobile Home	Heating	Insulation - Floor Installation	sqft floor cs	New	0.36	25	\$3.39	33%	38%	\$0.83	0.68	0.70	7th Power Plan
Mobile Home	Cooling	Insulation - Floor Upgrade	sqft floor cs	New	0.00	25	\$3.39	33%	38%	\$1.82	0.00	0.00	7th Power Plan

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Mobile Home	Heating	Insulation - Floor Upgrade	sqft floor cs	New	0.15	25	\$3.39	33%	38%	\$1.82	0.29	0.30	7th Power Plan
Mobile Home	Cooling	Insulation - Foundation	household	New	-19.04	70	\$1,241.19	0%	0%	\$0.11	0.00	0.00	RTF Workbook
Mobile Home	Heating	Insulation - Foundation	household	New	894.44	70	\$1,241.19	0%	0%	\$0.11	0.00	0.00	RTF Workbook
Mobile Home	Cooling	Insulation - Ducting	household	New	43.87	18	\$528.00	48%	80%	\$0.09	3.45	3.61	AEG-BEST
Mobile Home	Heating	Insulation - Ducting	household	New	479.98	18	\$528.00	48%	80%	\$0.09	14.97	15.10	AEG-BEST
Mobile Home	Cooling	Ducting - Repair and Sealing	household	New	43.36	20	\$769.57	29%	75%	\$0.05	4.96	5.20	7th Power Plan
Mobile Home	Heating	Ducting - Repair and Sealing	household	New	1,437.51	20	\$769.57	29%	75%	\$0.05	65.59	65.65	7th Power Plan
Mobile Home	Cooling	Building Shell - Infiltration Control	sqft home	New	0.00	25	\$3.18	16%	75%	\$1.43	1.84	1.96	7th Power Plan
Mobile Home	Heating	Building Shell - Infiltration Control	sqft home	New	0.18	25	\$3.18	16%	75%	\$1.43	19.09	19.53	7th Power Plan
Mobile Home	Cooling	Windows - High Efficiency/ENERGY STAR	sqft window	New	0.46	25	\$21.16	55%	75%	\$0.37	6.74	7.11	7th Power Plan
Mobile Home	Heating	Windows - High Efficiency/ENERGY STAR	sqft window	New	4.29	25	\$21.16	55%	75%	\$0.37	12.50	12.65	7th Power Plan
Mobile Home	Cooling	Windows - Install Reflective Film	sqft window	New	0.03	25	\$1.40	16%	75%	\$0.08	1.46	1.54	7th Power Plan
Mobile Home	Heating	Windows - Install Reflective Film	sqft window	New	1.60	25	\$1.40	16%	75%	\$0.08	14.24	14.26	7th Power Plan
Mobile Home	Cooling	Doors - Storm and Thermal	household	New	2.15	20	\$682.67	1%	80%	\$0.64	1.03	1.10	AEG-BEST
Mobile Home	Heating	Doors - Storm and Thermal	household	New	89.12	20	\$682.67	1%	80%	\$0.64	8.45	8.65	AEG-BEST
Mobile Home	Cooling	Ductless Mini Split Heat Pump (Zonal)	household	New	205.91	15	\$3,448.86	0%	38%	\$0.18	8.55	8.91	7th Power Plan
Mobile Home	Heating	Ductless Mini Split Heat Pump (Zonal)	household	New	1,712.41	15	\$3,448.86	0%	38%	\$0.18	17.65	17.55	7th Power Plan
Mobile Home	Cooling	Ductless Mini Split Heat Pump (Ducted Forced Air)	household	New	98.98	15	\$3,517.21	0%	38%	\$0.07	11.08	11.58	7th Power Plan
Mobile Home	Heating	Ductless Mini Split Heat Pump (Ducted Forced Air)	household	New	5,495.91	15	\$3,517.21	0%	38%	\$0.07	234.30	233.43	7th Power Plan
Mobile Home	Cooling	Space Heating - Heat Recovery Ventilator	household	New	5.45	20	\$1,303.92	0%	0%	\$0.20	0.00	0.00	7th Power Plan
Mobile Home	Heating	Space Heating - Heat Recovery Ventilator	household	New	568.71	20	\$1,303.92	0%	0%	\$0.20	0.00	0.00	7th Power Plan
Mobile Home	Cooling	Furnace - Conversion to Air-Source Heat Pump	household	New	0.00	15	\$2,955.28	0%	0%	\$0.12	0.00	0.00	7th Power Plan

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Mobile Home	Heating	Furnace - Conversion to Air-Source Heat Pump	household	New	2,692.37	15	\$2,955.28	0%	0%	\$0.12	0.00	0.00	7th Power Plan
Mobile Home	Cooling	Room AC - Removal of Second Unit	household	New	975.81	3	\$18.00	0%	50%	\$0.01	9.25	9.83	CA DEER
Mobile Home	Cooling	Central AC - Maintenance and Tune-Up	household	New	61.06	6	\$275.74	7%	75%	\$0.81	3.03	3.25	Illinois TRM
Mobile Home	Cooling	Central Heat Pump - Controls and Commissioning	household	New	-5.40	15	\$581.99	25%	75%	\$0.14	-0.01	-0.01	7th Power Plan
Mobile Home	Heating	Central Heat Pump - Controls and Commissioning	household	New	411.26	15	\$581.99	25%	75%	\$0.14	1.12	1.11	7th Power Plan
Mobile Home	Cooling	Ceiling Fan - ENERGY STAR	ceiling fans	New	6.65	10	\$47.23	40%	75%	\$0.89	2.20	2.33	ENERGY STAR
Mobile Home	Cooling	Whole-House Fan - Installation	household	New	32.20	20	\$714.44	15%	40%	\$1.94	1.98	2.10	California Public Utilities Commission
Mobile Home	Cooling	Thermostat - WiFi/Interactive	household	New	30.34	10	\$256.67	5%	75%	\$0.07	13.54	14.31	7th Power Plan
Mobile Home	Heating	Thermostat - WiFi/Interactive	household	New	419.59	10	\$256.67	5%	75%	\$0.07	36.67	36.75	7th Power Plan
Mobile Home	Water Heating	Water Heater - Drainwater Heat Recovery	household	New	221.74	40	\$837.67	1%	10%	\$0.27	12.63	14.31	7th Power Plan
Mobile Home	Water Heating	Water Heater - Faucet Aerators	aerators	New	123.68	15	\$5.13	29%	50%	\$0.00	27.78	32.93	7th Power Plan
Mobile Home	Water Heating	Water Heater - Low-Flow Showerheads	showerheads	New	271.57	10	\$26.56	43%	75%	\$0.01	28.86	36.69	7th Power Plan
Mobile Home	Water Heating	Water Heater - Pipe Insulation	feet pipe	New	24.64	15	\$3.26	12%	75%	\$0.01	25.36	31.58	Mid-Atlantic TRM
Mobile Home	Water Heating	Water Heater - Desuperheater	household	New	1,272.73	20	\$1,136.89	0%	0%	\$0.07	0.00	0.00	RTF Workbook
Mobile Home	Water Heating	Water Heater - Temperature Setback	household	New	75.48	2	\$5.00	51%	75%	\$0.03	0.53	0.71	Illinois TRM
Mobile Home	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	showerheads	New	35.54	10	\$19.30	16%	45%	\$0.06	3.47	4.41	RTF Workbook
Mobile Home	Water Heating	Water Heater - Solar System	household	New	1,013.19	20	\$8,847.45	1%	30%	\$0.72	107.31	122.91	7th Power Plan
Mobile Home	Interior Lighting	Interior Lighting - Occupancy Sensors	occ sens	New	96.79	8	\$99.16	0%	10%	\$0.11	4.25	6.88	Pacific Gas and Electric Research

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Mobile Home	Exterior Lighting	Exterior Lighting - Photosensor Control	ext fixt	New	12.03	15	\$10.19	11%	50%	\$0.07	4.93	8.88	Michigan Energy Measures Database
Mobile Home	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	ext fixt pv	New	11.38	3	\$28.00	1%	30%	\$0.58	0.31	0.92	AEG Research
Mobile Home	Exterior Lighting	Exterior Lighting - Timeclock Installation	ext fixt	New	8.84	10	\$19.15	3%	50%	\$0.21	3.42	6.88	Ontario Power TRM
Mobile Home	Appliances	Refrigerator - Decommissioning and Recycling	household	New	282.53	6	\$143.58	0%	65%	\$0.09	36.64	39.42	PacifiCorp '13-'14 Evaluation
Mobile Home	Appliances	Freezer - Decommissioning and Recycling	household	New	274.89	5	\$143.58	0%	10%	\$0.11	11.66	12.55	PacifiCorp '13-'14 Evaluation
Mobile Home	Electronics	Advanced Power Strips - Tier 1	smart strip	New	32.65	5	\$15.83	8%	25%	\$0.11	6.63	6.09	7th Power Plan
Mobile Home	Electronics	Advanced Power Strips - Tier 2	smart strip	New	203.30	5	\$50.49	8%	25%	\$0.05	41.28	37.98	7th Power Plan
Mobile Home	Miscellaneous	Pool Pump - Timer	household	New	0.00	10	\$85.22	0%	75%	\$0.00	0.00	0.00	Ontario Power TRM
Mobile Home	Miscellaneous	Pool Heater - Solar Water Heating System	household	New	0.00	20	\$3,767.92	0%	30%	\$0.00	0.00	0.00	AEG Research
Mobile Home	Cooling	ENERGY STAR Home Design	household	New	66.08	20	\$4,253.40	15%	75%	\$0.25	42.42	43.53	RTF Workbook
Mobile Home	Heating	ENERGY STAR Home Design	household	New	675.76	20	\$4,253.40	15%	75%	\$0.25	78.91	78.27	RTF Workbook
Mobile Home	Water Heating	ENERGY STAR Home Design	household	New	427.53	20	\$4,253.40	15%	75%	\$0.25	144.89	164.52	RTF Workbook
Mobile Home	Interior Lighting	ENERGY STAR Home Design	household	New	182.41	20	\$4,253.40	15%	75%	\$0.25	130.23	148.09	RTF Workbook
Mobile Home	Cooling	Behavioral Programs	household	New	4.22	1	\$5.00	39%	97%	\$0.07	0.76	0.79	AEG Research
Mobile Home	Heating	Behavioral Programs	household	New	10.77	1	\$5.00	39%	97%	\$0.07	1.75	2.32	AEG Research
Mobile Home	Water Heating	Behavioral Programs	household	New	9.10	1	\$5.00	39%	97%	\$0.07	1.34	1.95	AEG Research
Mobile Home	Interior Lighting	Behavioral Programs	household	New	3.79	1	\$5.00	39%	97%	\$0.07	0.49	1.17	AEG Research
Mobile Home	Exterior Lighting	Behavioral Programs	household	New	0.64	1	\$5.00	39%	97%	\$0.07	0.07	0.24	AEG Research
Mobile Home	Appliances	Behavioral Programs	household	New	18.93	1	\$5.00	39%	97%	\$0.07	3.25	3.59	AEG Research
Mobile Home	Electronics	Behavioral Programs	household	New	9.86	1	\$5.00	39%	97%	\$0.07	1.90	1.76	AEG Research
Mobile Home	Miscellaneous	Behavioral Programs	household	New	5.65	1	\$5.00	39%	97%	\$0.07	1.07	1.00	AEG Research
Mobile Home	Interior Lighting	Interior Lighting - General Service CFLs	GSL lamp	New	11.70	9	-\$0.13	0%	46%	\$0.00	8.59	25.10	RTF Workbook

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Mobile Home	Interior Lighting	Interior Lighting - Exempted CFLs	Exempt lamp	New	30.54	5	-\$2.74	0%	46%	-\$0.01	8.17	10.50	RTF Workbook

COMMERCIAL MEASURES

California Commercial Measures Assumptions

Table H-6 Comparison of 7th Plan and RTF Commercial Measures in California

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Large Office	Cooling	Air-Cooled Chiller	1 kBTU/hr	Existing	30.97	20	\$26.36	15%	at stock turnover	\$0.08	14.23	16.50	Annual Energy Outlook, 2015
Large Office	Cooling	Water-Cooled Chiller	1 kBTU/hr	Existing	45.98	25	\$12.65	10%	at stock turnover	\$0.03	13.01	15.08	Annual Energy Outlook, 2015
Large Office	Cooling	RTU	1 kBTU/hr	Existing	4.72	15	\$6.75	50%	at stock turnover	\$0.16	8.37	9.96	Annual Energy Outlook, 2015
Large Office	Cooling	Room AC	1 kBTU/hr	Existing	16.84	15	\$23.62	3%	at stock turnover	\$0.15	1.58	1.88	Annual Energy Outlook, 2015
Large Office	Cooling	Evaporative AC	11 per TR	Existing	0.00	15	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	New Buildings Institute Study, 2006
Large Office	Cooling	Air-Source Heat Pump	1 kBTU/hr	Existing	9.09	15	\$21.65	7%	at stock turnover	\$0.22	1.74	1.98	Annual Energy Outlook, 2015
Large Office	Heating	Air-Source Heat Pump	1 kBTU/hr	Existing	1.90	15	\$21.65	7%	at stock turnover	\$0.22	0.36	0.41	Annual Energy Outlook, 2015
Large Office	Cooling	Geothermal Heat Pump	1 kBTU/hr	Existing	22.09	25	\$26.36	7%	at stock turnover	\$0.08	2.90	3.27	Annual Energy Outlook, 2015
Large Office	Heating	Geothermal Heat Pump	1 kBTU/hr	Existing	7.75	25	\$26.36	7%	at stock turnover	\$0.08	1.02	1.15	Annual Energy Outlook, 2015
Large Office	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Large Office	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	40%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Large Office	Ventilation	Ventilation	1000 CFM	Existing	7,784.18	20	\$1,219.71	100%	at stock turnover	\$0.01	18.67	21.01	AEG-BEST
Large Office	Water Heating	Water Heater	65 gallons	Existing	1,803.80	13	\$3,537.01	56%	at stock turnover	\$0.23	31.22	36.82	7th Power Plan
Large Office	Interior Lighting	Screw-in	lamps	Existing	33.92	8	\$3.95	100%	at stock turnover	\$0.00	10.25	13.38	7th Power Plan
Large Office	Interior Lighting	Linear Lighting	lamps	Existing	55.87	17	\$52.83	100%	at stock turnover	\$0.07	103.92	114.64	7th Power Plan
Large Office	Interior Lighting	High-Bay Fixtures	lamps	Existing	289.59	15	\$123.86	100%	at stock turnover	\$0.05	55.69	64.06	Annual Energy Outlook, 2015

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Large Office	Exterior Lighting	Screw-in	lamps	Existing	51.06	8	\$3.95	100%	at stock turnover	\$0.00	2.64	3.44	7th Power Plan
Large Office	Exterior Lighting	Linear Lighting	lamps	Existing	77.05	17	\$52.83	100%	at stock turnover	\$0.05	10.84	11.96	7th Power Plan
Large Office	Exterior Lighting	Area Lighting	lamps	Existing	1,061.99	15	\$44.55	100%	at stock turnover	\$0.00	75.64	84.69	Annual Energy Outlook, 2015
Large Office	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	Existing	1,507.00	11	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Large Office	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	Existing	605.00	15	\$0.00	14%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Large Office	Refrigeration	Glass Door Display	1 unit	Existing	767.00	15	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Large Office	Refrigeration	Open Display Case	1 unit	Existing	1,438.00	10	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Large Office	Refrigeration	Icemaker	1 unit	Existing	388.40	9	\$1,056.09	45%	at stock turnover	\$0.43	0.13	0.15	ENERGY STAR
Large Office	Refrigeration	Vending Machine	1 unit	Existing	69.80	10	\$42.81	45%	at stock turnover	\$0.08	0.07	0.08	EIA 2011-2012 Ref. Case
Large Office	Food Preparation	Oven	1 unit	Existing	13,015.66	10	\$1,067.99	66%	at stock turnover	\$0.01	1.34	1.56	RTF Workbook
Large Office	Food Preparation	Fryer	1 unit	Existing	2,482.63	10	\$782.02	76%	at stock turnover	\$0.04	1.20	1.40	RTF Workbook
Large Office	Food Preparation	Dishwasher	1 unit	Existing	1,161.85	15	\$564.57	43%	at stock turnover	\$0.05	0.32	0.36	ENERGY STAR
Large Office	Food Preparation	Hot Food Container	1 unit	Existing	691.28	20	\$490.95	43%	at stock turnover	\$0.07	0.35	0.39	RTF Workbook
Large Office	Food Preparation	Steamer	1 unit	Existing	57,034.43	9	\$837.45	43%	at stock turnover	\$0.00	4.30	5.02	RTF Workbook
Large Office	Office Equipment	Desktop Computer	1 unit	Existing	106.43	5	\$0.01	100%	at stock turnover	\$0.00	48.32	62.78	7th Power Plan
Large Office	Office Equipment	Laptop	1 unit	Existing	31.76	4	\$0.01	100%	at stock turnover	\$0.00	5.93	7.31	7th Power Plan
Large Office	Office Equipment	Monitor	1 unit	Existing	26.41	5	\$0.01	100%	at stock turnover	\$0.00	3.03	3.93	7th Power Plan
Large Office	Office Equipment	Server	1 unit	Existing	63.85	4	\$0.01	100%	at stock turnover	\$0.00	4.49	5.50	AEG Research
Large Office	Office Equipment	Printer/Copier/Fax	1 unit	Existing	192.16	6	\$0.01	100%	at stock turnover	\$0.00	0.92	1.10	ENERGY STAR

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Large Office	Office Equipment	POS Terminal	1 unit	Existing	106.43	5	\$0.01	40%	at stock turnover	\$0.00	0.38	0.46	7th Power Plan
Large Office	Miscellaneous	Non-HVAC Motors	1 unit	Existing	0.00	15	\$0.00	90%	at stock turnover	\$0.00	0.00	0.00	N/A
Large Office	Miscellaneous	Pool Pump	1 unit	Existing	0.00	10	\$246.30	0%	at stock turnover	\$0.00	0.00	0.00	Southern California Edison
Large Office	Miscellaneous	Pool Heater	1 unit	Existing	0.00	15	\$3,546.07	0%	at stock turnover	\$0.00	0.00	0.00	AEG Research
Large Office	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Large Office	Cooling	Air-Cooled Chiller	1 kBTU/hr	New	30.25	20	\$26.36	15%	at stock turnover	\$0.08	10.04	11.48	Annual Energy Outlook, 2015
Large Office	Cooling	Water-Cooled Chiller	1 kBTU/hr	New	44.06	25	\$12.65	10%	at stock turnover	\$0.03	7.68	8.89	Annual Energy Outlook, 2015
Large Office	Cooling	RTU	1 kBTU/hr	New	4.08	15	\$6.75	50%	at stock turnover	\$0.18	4.12	4.76	Annual Energy Outlook, 2015
Large Office	Cooling	Room AC	1 kBTU/hr	New	14.74	15	\$23.62	3%	at stock turnover	\$0.18	0.79	0.91	Annual Energy Outlook, 2015
Large Office	Cooling	Evaporative AC	11 per TR	New	0.00	15	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	New Buildings Institute Study, 2006
Large Office	Cooling	Air-Source Heat Pump	1 kBTU/hr	New	7.85	15	\$21.65	7%	at stock turnover	\$0.24	0.90	1.00	Annual Energy Outlook, 2015
Large Office	Heating	Air-Source Heat Pump	1 kBTU/hr	New	1.82	15	\$21.65	7%	at stock turnover	\$0.24	0.21	0.23	Annual Energy Outlook, 2015
Large Office	Cooling	Geothermal Heat Pump	1 kBTU/hr	New	19.03	25	\$26.36	7%	at stock turnover	\$0.09	1.55	1.74	Annual Energy Outlook, 2015
Large Office	Heating	Geothermal Heat Pump	1 kBTU/hr	New	7.64	25	\$26.36	7%	at stock turnover	\$0.09	0.62	0.70	Annual Energy Outlook, 2015
Large Office	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Large Office	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	40%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Large Office	Ventilation	Ventilation	1000 CFM	New	6,445.85	20	\$1,219.71	100%	at stock turnover	\$0.02	11.09	12.33	AEG-BEST
Large Office	Water Heating	Water Heater	65 gallons	New	1,864.71	13	\$3,537.01	56%	at stock turnover	\$0.22	16.93	19.26	7th Power Plan
Large Office	Interior Lighting	Screw-in	lamps	New	33.96	8	\$3.95	100%	at stock turnover	\$0.00	5.28	5.82	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Large Office	Interior Lighting	Linear Lighting	lamps	New	55.87	17	\$52.83	100%	at stock turnover	\$0.07	51.77	56.36	7th Power Plan
Large Office	Interior Lighting	High-Bay Fixtures	lamps	New	288.73	15	\$123.86	100%	at stock turnover	\$0.05	31.67	35.66	Annual Energy Outlook, 2015
Large Office	Exterior Lighting	Screw-in	lamps	New	51.11	8	\$3.95	100%	at stock turnover	\$0.00	1.36	1.50	7th Power Plan
Large Office	Exterior Lighting	Linear Lighting	lamps	New	77.05	17	\$52.83	100%	at stock turnover	\$0.05	5.40	5.88	7th Power Plan
Large Office	Exterior Lighting	Area Lighting	lamps	New	1,061.99	15	\$44.55	100%	at stock turnover	\$0.00	43.54	48.04	Annual Energy Outlook, 2015
Large Office	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	New	1,507.00	11	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Large Office	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	New	605.00	15	\$0.00	14%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Large Office	Refrigeration	Glass Door Display	1 unit	New	767.00	15	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Large Office	Refrigeration	Open Display Case	1 unit	New	1,438.00	10	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Large Office	Refrigeration	Icemaker	1 unit	New	388.40	9	\$1,056.09	45%	at stock turnover	\$0.43	0.07	0.08	ENERGY STAR
Large Office	Refrigeration	Vending Machine	1 unit	New	69.80	10	\$42.81	45%	at stock turnover	\$0.08	0.05	0.05	EIA 2011-2012 Ref. Case
Large Office	Food Preparation	Oven	1 unit	New	13,015.66	10	\$1,067.99	66%	at stock turnover	\$0.01	0.71	0.80	RTF Workbook
Large Office	Food Preparation	Fryer	1 unit	New	2,482.63	10	\$782.02	76%	at stock turnover	\$0.04	0.61	0.69	RTF Workbook
Large Office	Food Preparation	Dishwasher	1 unit	New	1,161.85	15	\$564.57	43%	at stock turnover	\$0.05	0.13	0.15	ENERGY STAR
Large Office	Food Preparation	Hot Food Container	1 unit	New	691.28	20	\$490.95	43%	at stock turnover	\$0.07	0.23	0.25	RTF Workbook
Large Office	Food Preparation	Steamer	1 unit	New	57,034.43	9	\$837.45	43%	at stock turnover	\$0.00	2.37	2.68	RTF Workbook
Large Office	Office Equipment	Desktop Computer	1 unit	New	106.43	5	\$0.01	100%	at stock turnover	\$0.00	17.99	21.99	7th Power Plan
Large Office	Office Equipment	Laptop	1 unit	New	31.76	4	\$0.01	100%	at stock turnover	\$0.00	2.37	2.81	7th Power Plan
Large Office	Office Equipment	Monitor	1 unit	New	26.41	5	\$0.01	100%	at stock turnover	\$0.00	1.13	1.38	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Large Office	Office Equipment	Server	1 unit	New	63.85	4	\$0.01	100%	at stock turnover	\$0.00	1.73	2.04	AEG Research
Large Office	Office Equipment	Printer/Copier/Fax	1 unit	New	192.16	6	\$0.01	100%	at stock turnover	\$0.00	0.43	0.49	ENERGY STAR
Large Office	Office Equipment	POS Terminal	1 unit	New	106.43	5	\$0.01	40%	at stock turnover	\$0.00	0.16	0.18	7th Power Plan
Large Office	Miscellaneous	Non-HVAC Motors	1 unit	New	0.00	15	\$0.00	90%	at stock turnover	\$0.00	0.00	0.00	N/A
Large Office	Miscellaneous	Pool Pump	1 unit	New	0.00	10	\$246.30	0%	at stock turnover	\$0.00	0.00	0.00	Southern California Edison
Large Office	Miscellaneous	Pool Heater	1 unit	New	0.00	15	\$3,546.07	0%	at stock turnover	\$0.00	0.00	0.00	AEG Research
Large Office	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Small Office	Cooling	Air-Cooled Chiller	1 kBTU/hr	Existing	0.00	20	\$26.36	15%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Small Office	Cooling	Water-Cooled Chiller	1 kBTU/hr	Existing	0.00	25	\$12.65	10%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Small Office	Cooling	RTU	1 kBTU/hr	Existing	5.53	15	\$6.75	50%	at stock turnover	\$0.13	200.55	238.68	Annual Energy Outlook, 2015
Small Office	Cooling	Room AC	1 kBTU/hr	Existing	19.73	15	\$23.62	3%	at stock turnover	\$0.13	25.26	30.06	Annual Energy Outlook, 2015
Small Office	Cooling	Evaporative AC	11 per TR	Existing	0.00	15	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	New Buildings Institute Study, 2006
Small Office	Cooling	Air-Source Heat Pump	1 kBTU/hr	Existing	10.65	15	\$21.65	7%	at stock turnover	\$0.18	46.85	53.26	Annual Energy Outlook, 2015
Small Office	Heating	Air-Source Heat Pump	1 kBTU/hr	Existing	2.47	15	\$21.65	7%	at stock turnover	\$0.18	10.86	12.35	Annual Energy Outlook, 2015
Small Office	Cooling	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	7%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Small Office	Heating	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	7%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Small Office	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Small Office	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	40%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Small Office	Ventilation	Ventilation	1000 CFM	Existing	4,407.08	20	\$1,219.71	100%	at stock turnover	\$0.03	257.77	290.05	AEG-BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Small Office	Water Heating	Water Heater	65 gallons	Existing	1,767.68	13	\$3,537.01	56%	at stock turnover	\$0.24	451.65	532.74	7th Power Plan
Small Office	Interior Lighting	Screw-in	lamps	Existing	35.41	8	\$3.95	100%	at stock turnover	\$0.00	175.16	228.74	7th Power Plan
Small Office	Interior Lighting	Linear Lighting	lamps	Existing	60.77	17	\$52.83	100%	at stock turnover	\$0.06	1,365.75	1,506.67	7th Power Plan
Small Office	Interior Lighting	High-Bay Fixtures	lamps	Existing	419.54	15	\$123.86	100%	at stock turnover	\$0.03	1,328.08	1,531.41	Annual Energy Outlook, 2015
Small Office	Exterior Lighting	Screw-in	lamps	Existing	57.99	8	\$3.95	100%	at stock turnover	\$0.00	75.13	98.11	7th Power Plan
Small Office	Exterior Lighting	Linear Lighting	lamps	Existing	100.51	17	\$52.83	100%	at stock turnover	\$0.04	64.42	71.07	7th Power Plan
Small Office	Exterior Lighting	Area Lighting	lamps	Existing	950.60	15	\$44.55	100%	at stock turnover	\$0.01	1,378.91	1,543.98	Annual Energy Outlook, 2015
Small Office	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	Existing	1,507.00	11	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Small Office	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	Existing	605.00	15	\$0.00	14%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Small Office	Refrigeration	Glass Door Display	1 unit	Existing	767.00	15	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Small Office	Refrigeration	Open Display Case	1 unit	Existing	1,438.00	10	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Small Office	Refrigeration	Icemaker	1 unit	Existing	388.40	9	\$1,056.09	45%	at stock turnover	\$0.43	0.51	0.59	ENERGY STAR
Small Office	Refrigeration	Vending Machine	1 unit	Existing	69.80	10	\$42.81	45%	at stock turnover	\$0.08	0.46	0.53	EIA 2011-2012 Ref. Case
Small Office	Food Preparation	Oven	1 unit	Existing	13,015.66	10	\$1,067.99	66%	at stock turnover	\$0.01	15.40	17.62	RTF Workbook
Small Office	Food Preparation	Fryer	1 unit	Existing	2,482.63	10	\$782.02	76%	at stock turnover	\$0.04	1.65	1.93	RTF Workbook
Small Office	Food Preparation	Dishwasher	1 unit	Existing	1,161.85	15	\$564.57	43%	at stock turnover	\$0.05	4.78	5.36	ENERGY STAR
Small Office	Food Preparation	Hot Food Container	1 unit	Existing	691.28	20	\$490.95	43%	at stock turnover	\$0.07	2.87	3.24	RTF Workbook
Small Office	Food Preparation	Steamer	1 unit	Existing	57,034.43	9	\$837.45	43%	at stock turnover	\$0.00	33.83	38.88	RTF Workbook
Small Office	Office Equipment	Desktop Computer	1 unit	Existing	106.43	5	\$0.01	100%	at stock turnover	\$0.00	348.78	453.15	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Small Office	Office Equipment	Laptop	1 unit	Existing	31.76	4	\$0.01	100%	at stock turnover	\$0.00	42.78	52.75	7th Power Plan
Small Office	Office Equipment	Monitor	1 unit	Existing	26.41	5	\$0.01	100%	at stock turnover	\$0.00	21.84	28.37	7th Power Plan
Small Office	Office Equipment	Server	1 unit	Existing	63.85	4	\$0.01	100%	at stock turnover	\$0.00	97.26	119.15	AEG Research
Small Office	Office Equipment	Printer/Copier/Fax	1 unit	Existing	192.16	6	\$0.01	100%	at stock turnover	\$0.00	9.97	11.95	ENERGY STAR
Small Office	Office Equipment	POS Terminal	1 unit	Existing	106.43	5	\$0.01	40%	at stock turnover	\$0.00	8.42	10.26	7th Power Plan
Small Office	Miscellaneous	Non-HVAC Motors	1 unit	Existing	0.00	15	\$0.00	90%	at stock turnover	\$0.00	0.00	0.00	N/A
Small Office	Miscellaneous	Pool Pump	1 unit	Existing	0.00	10	\$246.30	0%	at stock turnover	\$0.00	0.00	0.00	Southern California Edison
Small Office	Miscellaneous	Pool Heater	1 unit	Existing	0.00	15	\$3,546.07	0%	at stock turnover	\$0.00	0.00	0.00	AEG Research
Small Office	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Small Office	Cooling	Air-Cooled Chiller	1 kBTU/hr	New	0.00	20	\$26.36	15%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Small Office	Cooling	Water-Cooled Chiller	1 kBTU/hr	New	0.00	25	\$12.65	10%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Small Office	Cooling	RTU	1 kBTU/hr	New	4.54	15	\$6.75	50%	at stock turnover	\$0.16	93.80	108.29	Annual Energy Outlook, 2015
Small Office	Cooling	Room AC	1 kBTU/hr	New	17.27	15	\$23.62	3%	at stock turnover	\$0.15	12.60	14.54	Annual Energy Outlook, 2015
Small Office	Cooling	Evaporative AC	11 per TR	New	0.00	15	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	New Buildings Institute Study, 2006
Small Office	Cooling	Air-Source Heat Pump	1 kBTU/hr	New	9.20	15	\$21.65	7%	at stock turnover	\$0.20	24.27	26.98	Annual Energy Outlook, 2015
Small Office	Heating	Air-Source Heat Pump	1 kBTU/hr	New	2.37	15	\$21.65	7%	at stock turnover	\$0.20	6.25	6.95	Annual Energy Outlook, 2015
Small Office	Cooling	Geothermal Heat Pump	1 kBTU/hr	New	21.14	25	\$26.36	7%	at stock turnover	\$0.08	37.46	42.10	Annual Energy Outlook, 2015
Small Office	Heating	Geothermal Heat Pump	1 kBTU/hr	New	7.43	25	\$26.36	7%	at stock turnover	\$0.08	13.17	14.80	Annual Energy Outlook, 2015
Small Office	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Small Office	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	40%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Small Office	Ventilation	Ventilation	1000 CFM	New	4,005.87	20	\$1,219.71	100%	at stock turnover	\$0.03	140.09	155.70	AEG-BEST
Small Office	Water Heating	Water Heater	65 gallons	New	1,864.43	13	\$3,537.01	56%	at stock turnover	\$0.22	249.88	284.22	7th Power Plan
Small Office	Interior Lighting	Screw-in	lamps	New	35.54	8	\$3.95	100%	at stock turnover	\$0.00	90.23	99.51	7th Power Plan
Small Office	Interior Lighting	Linear Lighting	lamps	New	60.77	17	\$52.83	100%	at stock turnover	\$0.06	680.37	740.73	7th Power Plan
Small Office	Interior Lighting	High-Bay Fixtures	lamps	New	398.04	15	\$123.86	100%	at stock turnover	\$0.03	718.61	809.70	Annual Energy Outlook, 2015
Small Office	Exterior Lighting	Screw-in	lamps	New	58.21	8	\$3.95	100%	at stock turnover	\$0.00	38.70	42.68	7th Power Plan
Small Office	Exterior Lighting	Linear Lighting	lamps	New	100.51	17	\$52.83	100%	at stock turnover	\$0.04	32.09	34.94	7th Power Plan
Small Office	Exterior Lighting	Area Lighting	lamps	New	950.60	15	\$44.55	100%	at stock turnover	\$0.01	793.80	875.85	Annual Energy Outlook, 2015
Small Office	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	New	1,507.00	11	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Small Office	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	New	605.00	15	\$0.00	14%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Small Office	Refrigeration	Glass Door Display	1 unit	New	767.00	15	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Small Office	Refrigeration	Open Display Case	1 unit	New	1,438.00	10	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Small Office	Refrigeration	Icemaker	1 unit	New	388.40	9	\$1,056.09	45%	at stock turnover	\$0.43	0.29	0.32	ENERGY STAR
Small Office	Refrigeration	Vending Machine	1 unit	New	69.80	10	\$42.81	45%	at stock turnover	\$0.08	0.15	0.17	EIA 2011-2012 Ref. Case
Small Office	Food Preparation	Oven	1 unit	New	13,015.66	10	\$1,067.99	66%	at stock turnover	\$0.01	8.48	9.40	RTF Workbook
Small Office	Food Preparation	Fryer	1 unit	New	2,482.63	10	\$782.02	76%	at stock turnover	\$0.04	0.84	0.95	RTF Workbook
Small Office	Food Preparation	Dishwasher	1 unit	New	1,161.85	15	\$564.57	43%	at stock turnover	\$0.05	1.11	1.22	ENERGY STAR
Small Office	Food Preparation	Hot Food Container	1 unit	New	691.28	20	\$490.95	43%	at stock turnover	\$0.07	1.98	2.19	RTF Workbook

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Small Office	Food Preparation	Steamer	1 unit	New	57,034.43	9	\$837.45	43%	at stock turnover	\$0.00	19.00	21.13	RTF Workbook
Small Office	Office Equipment	Desktop Computer	1 unit	New	106.43	5	\$0.01	100%	at stock turnover	\$0.00	129.87	158.74	7th Power Plan
Small Office	Office Equipment	Laptop	1 unit	New	31.76	4	\$0.01	100%	at stock turnover	\$0.00	17.10	20.29	7th Power Plan
Small Office	Office Equipment	Monitor	1 unit	New	26.41	5	\$0.01	100%	at stock turnover	\$0.00	8.13	9.94	7th Power Plan
Small Office	Office Equipment	Server	1 unit	New	63.85	4	\$0.01	100%	at stock turnover	\$0.00	37.48	44.17	AEG Research
Small Office	Office Equipment	Printer/Copier/Fax	1 unit	New	192.16	6	\$0.01	100%	at stock turnover	\$0.00	4.64	5.31	ENERGY STAR
Small Office	Office Equipment	POS Terminal	1 unit	New	106.43	5	\$0.01	40%	at stock turnover	\$0.00	3.43	4.01	7th Power Plan
Small Office	Miscellaneous	Non-HVAC Motors	1 unit	New	0.00	15	\$0.00	90%	at stock turnover	\$0.00	0.00	0.00	N/A
Small Office	Miscellaneous	Pool Pump	1 unit	New	0.00	10	\$246.30	0%	at stock turnover	\$0.00	0.00	0.00	Southern California Edison
Small Office	Miscellaneous	Pool Heater	1 unit	New	0.00	15	\$3,546.07	0%	at stock turnover	\$0.00	0.00	0.00	AEG Research
Small Office	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Large Retail	Cooling	Air-Cooled Chiller	1 kBTU/hr	Existing	22.68	20	\$26.36	15%	at stock turnover	\$0.11	1.43	1.66	Annual Energy Outlook, 2015
Large Retail	Cooling	Water-Cooled Chiller	1 kBTU/hr	Existing	34.56	25	\$12.65	10%	at stock turnover	\$0.03	1.34	1.55	Annual Energy Outlook, 2015
Large Retail	Cooling	RTU	1 kBTU/hr	Existing	3.69	15	\$6.75	50%	at stock turnover	\$0.20	19.47	23.13	Annual Energy Outlook, 2015
Large Retail	Cooling	Room AC	1 kBTU/hr	Existing	13.17	15	\$23.62	3%	at stock turnover	\$0.20	3.04	3.61	Annual Energy Outlook, 2015
Large Retail	Cooling	Evaporative AC	11 per TR	Existing	0.00	15	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	New Buildings Institute Study, 2006
Large Retail	Cooling	Air-Source Heat Pump	1 kBTU/hr	Existing	7.10	15	\$21.65	7%	at stock turnover	\$0.27	1.05	1.19	Annual Energy Outlook, 2015
Large Retail	Heating	Air-Source Heat Pump	1 kBTU/hr	Existing	1.53	15	\$21.65	7%	at stock turnover	\$0.27	0.23	0.26	Annual Energy Outlook, 2015
Large Retail	Cooling	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	7%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Large Retail	Heating	Geothermal Heat Pump	1 kBtu/hr	Existing	0.00	25	\$26.36	7%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Large Retail	Heating	Electric Furnace	1 kBtu/hr	Existing	0.00	18	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Large Retail	Heating	Electric Room Heat	3.5 kBtu/hr	Existing	0.00	18	\$0.00	40%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Large Retail	Ventilation	Ventilation	1000 CFM	Existing	6,499.47	20	\$1,219.71	100%	at stock turnover	\$0.02	113.14	127.19	AEG-BEST
Large Retail	Water Heating	Water Heater	65 gallons	Existing	1,792.52	13	\$3,537.01	56%	at stock turnover	\$0.23	64.66	76.13	7th Power Plan
Large Retail	Interior Lighting	Screw-in	lamps	Existing	65.89	8	\$3.95	100%	at stock turnover	\$0.00	28.65	37.62	7th Power Plan
Large Retail	Interior Lighting	Linear Lighting	lamps	Existing	122.79	17	\$52.83	100%	at stock turnover	\$0.03	299.89	330.74	7th Power Plan
Large Retail	Interior Lighting	High-Bay Fixtures	lamps	Existing	681.61	15	\$123.86	100%	at stock turnover	\$0.02	165.40	189.76	Annual Energy Outlook, 2015
Large Retail	Exterior Lighting	Screw-in	lamps	Existing	58.18	8	\$3.95	100%	at stock turnover	\$0.00	10.24	13.44	7th Power Plan
Large Retail	Exterior Lighting	Linear Lighting	lamps	Existing	115.80	17	\$52.83	100%	at stock turnover	\$0.03	7.96	8.78	7th Power Plan
Large Retail	Exterior Lighting	Area Lighting	lamps	Existing	985.05	15	\$44.55	100%	at stock turnover	\$0.00	93.68	104.84	Annual Energy Outlook, 2015
Large Retail	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	Existing	1,507.00	11	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Large Retail	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	Existing	605.00	15	\$0.00	14%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Large Retail	Refrigeration	Glass Door Display	1 unit	Existing	767.00	15	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Large Retail	Refrigeration	Open Display Case	1 unit	Existing	1,438.00	10	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Large Retail	Refrigeration	Icemaker	1 unit	Existing	388.40	9	\$1,056.09	45%	at stock turnover	\$0.43	1.55	1.83	ENERGY STAR
Large Retail	Refrigeration	Vending Machine	1 unit	Existing	69.80	10	\$42.81	45%	at stock turnover	\$0.08	0.32	0.37	EIA 2011-2012 Ref. Case
Large Retail	Food Preparation	Oven	1 unit	Existing	13,015.66	10	\$1,067.99	66%	at stock turnover	\$0.01	4.40	5.12	RTF Workbook
Large Retail	Food Preparation	Fryer	1 unit	Existing	2,482.63	10	\$782.02	76%	at stock turnover	\$0.04	2.91	3.41	RTF Workbook

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Large Retail	Food Preparation	Dishwasher	1 unit	Existing	1,161.85	15	\$564.57	43%	at stock turnover	\$0.05	1.28	1.45	ENERGY STAR
Large Retail	Food Preparation	Hot Food Container	1 unit	Existing	691.28	20	\$490.95	43%	at stock turnover	\$0.07	1.33	1.50	RTF Workbook
Large Retail	Food Preparation	Steamer	1 unit	Existing	57,034.43	9	\$837.45	43%	at stock turnover	\$0.00	16.57	19.29	RTF Workbook
Large Retail	Office Equipment	Desktop Computer	1 unit	Existing	106.43	5	\$0.01	100%	at stock turnover	\$0.00	13.84	17.96	7th Power Plan
Large Retail	Office Equipment	Laptop	1 unit	Existing	31.76	4	\$0.01	100%	at stock turnover	\$0.00	1.71	2.11	7th Power Plan
Large Retail	Office Equipment	Monitor	1 unit	Existing	26.41	5	\$0.01	100%	at stock turnover	\$0.00	0.87	1.12	7th Power Plan
Large Retail	Office Equipment	Server	1 unit	Existing	63.85	4	\$0.01	100%	at stock turnover	\$0.00	1.72	2.10	AEG Research
Large Retail	Office Equipment	Printer/Copier/Fax	1 unit	Existing	192.16	6	\$0.01	100%	at stock turnover	\$0.00	0.40	0.48	ENERGY STAR
Large Retail	Office Equipment	POS Terminal	1 unit	Existing	106.43	5	\$0.01	40%	at stock turnover	\$0.00	0.48	0.58	7th Power Plan
Large Retail	Miscellaneous	Non-HVAC Motors	1 unit	Existing	0.00	15	\$0.00	90%	at stock turnover	\$0.00	0.00	0.00	N/A
Large Retail	Miscellaneous	Pool Pump	1 unit	Existing	0.00	10	\$246.30	0%	at stock turnover	\$0.00	0.00	0.00	Southern California Edison
Large Retail	Miscellaneous	Pool Heater	1 unit	Existing	0.00	15	\$3,546.07	0%	at stock turnover	\$0.00	0.00	0.00	AEG Research
Large Retail	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Large Retail	Cooling	Air-Cooled Chiller	1 kBTU/hr	New	19.52	20	\$26.36	15%	at stock turnover	\$0.13	0.79	0.90	Annual Energy Outlook, 2015
Large Retail	Cooling	Water-Cooled Chiller	1 kBTU/hr	New	30.08	25	\$12.65	10%	at stock turnover	\$0.04	0.64	0.74	Annual Energy Outlook, 2015
Large Retail	Cooling	RTU	1 kBTU/hr	New	3.58	15	\$6.75	50%	at stock turnover	\$0.21	9.55	11.01	Annual Energy Outlook, 2015
Large Retail	Cooling	Room AC	1 kBTU/hr	New	11.52	15	\$23.62	3%	at stock turnover	\$0.22	1.34	1.55	Annual Energy Outlook, 2015
Large Retail	Cooling	Evaporative AC	11 per TR	New	0.00	15	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	New Buildings Institute Study, 2006
Large Retail	Cooling	Air-Source Heat Pump	1 kBTU/hr	New	6.14	15	\$21.65	7%	at stock turnover	\$0.31	0.48	0.53	Annual Energy Outlook, 2015

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Large Retail	Heating	Air-Source Heat Pump	1 kBTU/hr	New	1.47	15	\$21.65	7%	at stock turnover	\$0.31	0.11	0.13	Annual Energy Outlook, 2015
Large Retail	Cooling	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	7%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Large Retail	Heating	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	7%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Large Retail	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Large Retail	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	40%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Large Retail	Ventilation	Ventilation	1000 CFM	New	5,625.11	20	\$1,219.71	100%	at stock turnover	\$0.02	53.04	58.92	AEG-BEST
Large Retail	Water Heating	Water Heater	65 gallons	New	1,808.21	13	\$3,537.01	56%	at stock turnover	\$0.23	30.32	34.47	7th Power Plan
Large Retail	Interior Lighting	Screw-in	lamps	New	65.93	8	\$3.95	100%	at stock turnover	\$0.00	13.06	14.41	7th Power Plan
Large Retail	Interior Lighting	Linear Lighting	lamps	New	122.79	17	\$52.83	100%	at stock turnover	\$0.03	132.21	143.96	7th Power Plan
Large Retail	Interior Lighting	High-Bay Fixtures	lamps	New	681.36	15	\$123.86	100%	at stock turnover	\$0.02	83.41	93.78	Annual Energy Outlook, 2015
Large Retail	Exterior Lighting	Screw-in	lamps	New	58.22	8	\$3.95	100%	at stock turnover	\$0.00	4.67	5.15	7th Power Plan
Large Retail	Exterior Lighting	Linear Lighting	lamps	New	115.80	17	\$52.83	100%	at stock turnover	\$0.03	3.51	3.82	7th Power Plan
Large Retail	Exterior Lighting	Area Lighting	lamps	New	985.05	15	\$44.55	100%	at stock turnover	\$0.00	47.71	52.63	Annual Energy Outlook, 2015
Large Retail	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	New	1,507.00	11	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Large Retail	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	New	605.00	15	\$0.00	14%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Large Retail	Refrigeration	Glass Door Display	1 unit	New	767.00	15	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Large Retail	Refrigeration	Open Display Case	1 unit	New	1,438.00	10	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Large Retail	Refrigeration	Icemaker	1 unit	New	388.40	9	\$1,056.09	45%	at stock turnover	\$0.43	0.73	0.83	ENERGY STAR
Large Retail	Refrigeration	Vending Machine	1 unit	New	69.80	10	\$42.81	45%	at stock turnover	\$0.08	0.14	0.16	EIA 2011-2012 Ref. Case

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Large Retail	Food Preparation	Oven	1 unit	New	13,015.66	10	\$1,067.99	66%	at stock turnover	\$0.01	2.00	2.24	RTF Workbook
Large Retail	Food Preparation	Fryer	1 unit	New	2,482.63	10	\$782.02	76%	at stock turnover	\$0.04	1.30	1.47	RTF Workbook
Large Retail	Food Preparation	Dishwasher	1 unit	New	1,161.85	15	\$564.57	43%	at stock turnover	\$0.05	0.46	0.51	ENERGY STAR
Large Retail	Food Preparation	Hot Food Container	1 unit	New	691.28	20	\$490.95	43%	at stock turnover	\$0.07	0.78	0.87	RTF Workbook
Large Retail	Food Preparation	Steamer	1 unit	New	57,034.43	9	\$837.45	43%	at stock turnover	\$0.00	8.04	9.07	RTF Workbook
Large Retail	Office Equipment	Desktop Computer	1 unit	New	106.43	5	\$0.01	100%	at stock turnover	\$0.00	4.58	5.60	7th Power Plan
Large Retail	Office Equipment	Laptop	1 unit	New	31.76	4	\$0.01	100%	at stock turnover	\$0.00	0.60	0.72	7th Power Plan
Large Retail	Office Equipment	Monitor	1 unit	New	26.41	5	\$0.01	100%	at stock turnover	\$0.00	0.29	0.35	7th Power Plan
Large Retail	Office Equipment	Server	1 unit	New	63.85	4	\$0.01	100%	at stock turnover	\$0.00	0.58	0.68	AEG Research
Large Retail	Office Equipment	Printer/Copier/Fax	1 unit	New	192.16	6	\$0.01	100%	at stock turnover	\$0.00	0.16	0.19	ENERGY STAR
Large Retail	Office Equipment	POS Terminal	1 unit	New	106.43	5	\$0.01	40%	at stock turnover	\$0.00	0.18	0.21	7th Power Plan
Large Retail	Miscellaneous	Non-HVAC Motors	1 unit	New	0.00	15	\$0.00	90%	at stock turnover	\$0.00	0.00	0.00	N/A
Large Retail	Miscellaneous	Pool Pump	1 unit	New	0.00	10	\$246.30	0%	at stock turnover	\$0.00	0.00	0.00	Southern California Edison
Large Retail	Miscellaneous	Pool Heater	1 unit	New	0.00	15	\$3,546.07	0%	at stock turnover	\$0.00	0.00	0.00	AEG Research
Large Retail	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Small Retail	Cooling	Air-Cooled Chiller	1 kBTU/hr	Existing	0.00	20	\$26.36	15%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Small Retail	Cooling	Water-Cooled Chiller	1 kBTU/hr	Existing	0.00	25	\$12.65	10%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Small Retail	Cooling	RTU	1 kBTU/hr	Existing	3.23	15	\$6.75	50%	at stock turnover	\$0.23	53.97	64.13	Annual Energy Outlook, 2015
Small Retail	Cooling	Room AC	1 kBTU/hr	Existing	11.17	15	\$23.62	3%	at stock turnover	\$0.23	6.07	7.21	Annual Energy Outlook, 2015

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Small Retail	Cooling	Evaporative AC	11 per TR	Existing	0.00	15	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	New Buildings Institute Study, 2006
Small Retail	Cooling	Air-Source Heat Pump	1 kBTU/hr	Existing	6.22	15	\$21.65	7%	at stock turnover	\$0.31	8.22	9.33	Annual Energy Outlook, 2015
Small Retail	Heating	Air-Source Heat Pump	1 kBTU/hr	Existing	1.45	15	\$21.65	7%	at stock turnover	\$0.31	1.91	2.17	Annual Energy Outlook, 2015
Small Retail	Cooling	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	7%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Small Retail	Heating	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	7%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Small Retail	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Small Retail	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	40%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Small Retail	Ventilation	Ventilation	1000 CFM	Existing	2,423.52	20	\$1,219.71	100%	at stock turnover	\$0.05	138.79	156.04	AEG-BEST
Small Retail	Water Heating	Water Heater	65 gallons	Existing	1,792.56	13	\$3,537.01	56%	at stock turnover	\$0.23	254.29	299.41	7th Power Plan
Small Retail	Interior Lighting	Screw-in	lamps	Existing	43.48	8	\$3.95	100%	at stock turnover	\$0.00	62.21	81.68	7th Power Plan
Small Retail	Interior Lighting	Linear Lighting	lamps	Existing	81.04	17	\$52.83	100%	at stock turnover	\$0.05	651.19	718.18	7th Power Plan
Small Retail	Interior Lighting	High-Bay Fixtures	lamps	Existing	449.86	15	\$123.86	100%	at stock turnover	\$0.03	359.15	412.04	Annual Energy Outlook, 2015
Small Retail	Exterior Lighting	Screw-in	lamps	Existing	58.18	8	\$3.95	100%	at stock turnover	\$0.00	33.68	44.22	7th Power Plan
Small Retail	Exterior Lighting	Linear Lighting	lamps	Existing	115.80	17	\$52.83	100%	at stock turnover	\$0.03	26.19	28.88	7th Power Plan
Small Retail	Exterior Lighting	Area Lighting	lamps	Existing	985.05	15	\$44.55	100%	at stock turnover	\$0.00	308.21	344.91	Annual Energy Outlook, 2015
Small Retail	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	Existing	1,507.00	11	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Small Retail	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	Existing	605.00	15	\$0.00	14%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Small Retail	Refrigeration	Glass Door Display	1 unit	Existing	767.00	15	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Small Retail	Refrigeration	Open Display Case	1 unit	Existing	1,438.00	10	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Small Retail	Refrigeration	Icemaker	1 unit	Existing	388.40	9	\$1,056.09	45%	at stock turnover	\$0.43	0.75	0.87	ENERGY STAR
Small Retail	Refrigeration	Vending Machine	1 unit	Existing	69.80	10	\$42.81	45%	at stock turnover	\$0.08	0.20	0.23	EIA 2011-2012 Ref. Case
Small Retail	Food Preparation	Oven	1 unit	Existing	13,015.66	10	\$1,067.99	66%	at stock turnover	\$0.01	4.67	5.34	RTF Workbook
Small Retail	Food Preparation	Fryer	1 unit	Existing	2,482.63	10	\$782.02	76%	at stock turnover	\$0.04	1.02	1.20	RTF Workbook
Small Retail	Food Preparation	Dishwasher	1 unit	Existing	1,161.85	15	\$564.57	43%	at stock turnover	\$0.05	3.01	3.38	ENERGY STAR
Small Retail	Food Preparation	Hot Food Container	1 unit	Existing	691.28	20	\$490.95	43%	at stock turnover	\$0.07	1.82	2.06	RTF Workbook
Small Retail	Food Preparation	Steamer	1 unit	Existing	57,034.43	9	\$837.45	43%	at stock turnover	\$0.00	21.31	24.46	RTF Workbook
Small Retail	Office Equipment	Desktop Computer	1 unit	Existing	106.43	5	\$0.01	100%	at stock turnover	\$0.00	17.70	22.98	7th Power Plan
Small Retail	Office Equipment	Laptop	1 unit	Existing	31.76	4	\$0.01	100%	at stock turnover	\$0.00	2.19	2.70	7th Power Plan
Small Retail	Office Equipment	Monitor	1 unit	Existing	26.41	5	\$0.01	100%	at stock turnover	\$0.00	1.11	1.44	7th Power Plan
Small Retail	Office Equipment	Server	1 unit	Existing	63.85	4	\$0.01	100%	at stock turnover	\$0.00	19.99	24.47	AEG Research
Small Retail	Office Equipment	Printer/Copier/Fax	1 unit	Existing	192.16	6	\$0.01	100%	at stock turnover	\$0.00	0.41	0.49	ENERGY STAR
Small Retail	Office Equipment	POS Terminal	1 unit	Existing	106.43	5	\$0.01	40%	at stock turnover	\$0.00	8.15	9.95	7th Power Plan
Small Retail	Miscellaneous	Non-HVAC Motors	1 unit	Existing	0.00	15	\$0.00	90%	at stock turnover	\$0.00	0.00	0.00	N/A
Small Retail	Miscellaneous	Pool Pump	1 unit	Existing	0.00	10	\$246.30	0%	at stock turnover	\$0.00	0.00	0.00	Southern California Edison
Small Retail	Miscellaneous	Pool Heater	1 unit	Existing	0.00	15	\$3,546.07	0%	at stock turnover	\$0.00	0.00	0.00	AEG Research
Small Retail	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Small Retail	Cooling	Air-Cooled Chiller	1 kBTU/hr	New	0.00	20	\$26.36	15%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Small Retail	Cooling	Water-Cooled Chiller	1 kBTU/hr	New	0.00	25	\$12.65	10%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Small Retail	Cooling	RTU	1 kBTU/hr	New	3.18	15	\$6.75	50%	at stock turnover	\$0.23	26.76	30.87	Annual Energy Outlook, 2015
Small Retail	Cooling	Room AC	1 kBTU/hr	New	9.77	15	\$23.62	3%	at stock turnover	\$0.26	2.68	3.09	Annual Energy Outlook, 2015
Small Retail	Cooling	Evaporative AC	11 per TR	New	0.00	15	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	New Buildings Institute Study, 2006
Small Retail	Cooling	Air-Source Heat Pump	1 kBTU/hr	New	5.38	15	\$21.65	7%	at stock turnover	\$0.35	3.76	4.18	Annual Energy Outlook, 2015
Small Retail	Heating	Air-Source Heat Pump	1 kBTU/hr	New	1.39	15	\$21.65	7%	at stock turnover	\$0.35	0.97	1.08	Annual Energy Outlook, 2015
Small Retail	Cooling	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	7%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Small Retail	Heating	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	7%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Small Retail	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Small Retail	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	40%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Small Retail	Ventilation	Ventilation	1000 CFM	New	2,285.93	20	\$1,219.71	100%	at stock turnover	\$0.05	70.91	78.78	AEG-BEST
Small Retail	Water Heating	Water Heater	65 gallons	New	1,808.25	13	\$3,537.01	56%	at stock turnover	\$0.23	119.24	135.56	7th Power Plan
Small Retail	Interior Lighting	Screw-in	lamps	New	43.51	8	\$3.95	100%	at stock turnover	\$0.00	28.37	31.29	7th Power Plan
Small Retail	Interior Lighting	Linear Lighting	lamps	New	81.04	17	\$52.83	100%	at stock turnover	\$0.05	287.07	312.59	7th Power Plan
Small Retail	Interior Lighting	High-Bay Fixtures	lamps	New	449.69	15	\$123.86	100%	at stock turnover	\$0.03	181.11	203.64	Annual Energy Outlook, 2015
Small Retail	Exterior Lighting	Screw-in	lamps	New	58.22	8	\$3.95	100%	at stock turnover	\$0.00	15.36	16.94	7th Power Plan
Small Retail	Exterior Lighting	Linear Lighting	lamps	New	115.80	17	\$52.83	100%	at stock turnover	\$0.03	11.54	12.57	7th Power Plan
Small Retail	Exterior Lighting	Area Lighting	lamps	New	985.05	15	\$44.55	100%	at stock turnover	\$0.00	156.97	173.17	Annual Energy Outlook, 2015
Small Retail	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	New	1,507.00	11	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Small Retail	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	New	605.00	15	\$0.00	14%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Small Retail	Refrigeration	Glass Door Display	1 unit	New	767.00	15	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Small Retail	Refrigeration	Open Display Case	1 unit	New	1,438.00	10	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Small Retail	Refrigeration	Icemaker	1 unit	New	388.40	9	\$1,056.09	45%	at stock turnover	\$0.43	0.31	0.35	ENERGY STAR
Small Retail	Refrigeration	Vending Machine	1 unit	New	69.80	10	\$42.81	45%	at stock turnover	\$0.08	0.06	0.07	EIA 2011-2012 Ref. Case
Small Retail	Food Preparation	Oven	1 unit	New	13,015.66	10	\$1,067.99	66%	at stock turnover	\$0.01	2.16	2.40	RTF Workbook
Small Retail	Food Preparation	Fryer	1 unit	New	2,482.63	10	\$782.02	76%	at stock turnover	\$0.04	0.46	0.52	RTF Workbook
Small Retail	Food Preparation	Dishwasher	1 unit	New	1,161.85	15	\$564.57	43%	at stock turnover	\$0.05	0.60	0.67	ENERGY STAR
Small Retail	Food Preparation	Hot Food Container	1 unit	New	691.28	20	\$490.95	43%	at stock turnover	\$0.07	1.09	1.20	RTF Workbook
Small Retail	Food Preparation	Steamer	1 unit	New	57,034.43	9	\$837.45	43%	at stock turnover	\$0.00	10.39	11.55	RTF Workbook
Small Retail	Office Equipment	Desktop Computer	1 unit	New	106.43	5	\$0.01	100%	at stock turnover	\$0.00	5.87	7.16	7th Power Plan
Small Retail	Office Equipment	Laptop	1 unit	New	31.76	4	\$0.01	100%	at stock turnover	\$0.00	0.77	0.92	7th Power Plan
Small Retail	Office Equipment	Monitor	1 unit	New	26.41	5	\$0.01	100%	at stock turnover	\$0.00	0.37	0.45	7th Power Plan
Small Retail	Office Equipment	Server	1 unit	New	63.85	4	\$0.01	100%	at stock turnover	\$0.00	6.78	7.99	AEG Research
Small Retail	Office Equipment	Printer/Copier/Fax	1 unit	New	192.16	6	\$0.01	100%	at stock turnover	\$0.00	0.17	0.19	ENERGY STAR
Small Retail	Office Equipment	POS Terminal	1 unit	New	106.43	5	\$0.01	40%	at stock turnover	\$0.00	3.11	3.62	7th Power Plan
Small Retail	Miscellaneous	Non-HVAC Motors	1 unit	New	0.00	15	\$0.00	90%	at stock turnover	\$0.00	0.00	0.00	N/A
Small Retail	Miscellaneous	Pool Pump	1 unit	New	0.00	10	\$246.30	0%	at stock turnover	\$0.00	0.00	0.00	Southern California Edison
Small Retail	Miscellaneous	Pool Heater	1 unit	New	0.00	15	\$3,546.07	0%	at stock turnover	\$0.00	0.00	0.00	AEG Research
Small Retail	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Restaurant	Cooling	Air-Cooled Chiller	1 kBTU/hr	Existing	0.00	20	\$26.36	15%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Restaurant	Cooling	Water-Cooled Chiller	1 kBTU/hr	Existing	0.00	25	\$12.65	10%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Restaurant	Cooling	RTU	1 kBTU/hr	Existing	3.91	15	\$6.75	50%	at stock turnover	\$0.19	29.19	34.69	Annual Energy Outlook, 2015
Restaurant	Cooling	Room AC	1 kBTU/hr	Existing	13.98	15	\$23.62	3%	at stock turnover	\$0.18	3.83	4.55	Annual Energy Outlook, 2015
Restaurant	Cooling	Evaporative AC	11 per TR	Existing	0.00	15	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	New Buildings Institute Study, 2006
Restaurant	Cooling	Air-Source Heat Pump	1 kBTU/hr	Existing	7.54	15	\$21.65	7%	at stock turnover	\$0.27	4.27	4.85	Annual Energy Outlook, 2015
Restaurant	Heating	Air-Source Heat Pump	1 kBTU/hr	Existing	1.27	15	\$21.65	7%	at stock turnover	\$0.27	0.72	0.82	Annual Energy Outlook, 2015
Restaurant	Cooling	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	7%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Restaurant	Heating	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	7%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Restaurant	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Restaurant	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	40%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Restaurant	Ventilation	Ventilation	1000 CFM	Existing	807.85	20	\$1,219.71	100%	at stock turnover	\$0.14	27.90	31.37	AEG-BEST
Restaurant	Water Heating	Water Heater	65 gallons	Existing	1,864.71	13	\$3,537.01	56%	at stock turnover	\$0.22	404.71	476.52	7th Power Plan
Restaurant	Interior Lighting	Screw-in	lamps	Existing	61.42	8	\$3.95	100%	at stock turnover	\$0.00	76.72	87.67	7th Power Plan
Restaurant	Interior Lighting	Linear Lighting	lamps	Existing	141.59	17	\$52.83	100%	at stock turnover	\$0.03	166.10	183.19	7th Power Plan
Restaurant	Interior Lighting	High-Bay Fixtures	lamps	Existing	796.30	15	\$123.86	100%	at stock turnover	\$0.02	205.99	236.71	Annual Energy Outlook, 2015
Restaurant	Exterior Lighting	Screw-in	lamps	Existing	51.18	8	\$3.95	100%	at stock turnover	\$0.00	13.29	15.18	7th Power Plan
Restaurant	Exterior Lighting	Linear Lighting	lamps	Existing	117.47	17	\$52.83	100%	at stock turnover	\$0.03	35.86	39.55	7th Power Plan
Restaurant	Exterior Lighting	Area Lighting	lamps	Existing	967.43	15	\$44.55	100%	at stock turnover	\$0.00	200.67	224.56	Annual Energy Outlook, 2015

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Restaurant	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	Existing	1,507.00	11	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Restaurant	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	Existing	605.00	15	\$0.00	14%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Restaurant	Refrigeration	Glass Door Display	1 unit	Existing	767.00	15	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Restaurant	Refrigeration	Open Display Case	1 unit	Existing	1,438.00	10	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Restaurant	Refrigeration	Icemaker	1 unit	Existing	388.40	9	\$1,056.09	45%	at stock turnover	\$0.43	19.88	23.53	ENERGY STAR
Restaurant	Refrigeration	Vending Machine	1 unit	Existing	69.80	10	\$42.81	45%	at stock turnover	\$0.08	3.89	4.54	EIA 2011-2012 Ref. Case
Restaurant	Food Preparation	Oven	1 unit	Existing	13,015.66	10	\$1,067.99	66%	at stock turnover	\$0.01	40.49	46.86	RTF Workbook
Restaurant	Food Preparation	Fryer	1 unit	Existing	2,482.63	10	\$782.02	76%	at stock turnover	\$0.04	95.20	111.50	RTF Workbook
Restaurant	Food Preparation	Dishwasher	1 unit	Existing	1,161.85	15	\$564.57	43%	at stock turnover	\$0.05	13.46	15.22	ENERGY STAR
Restaurant	Food Preparation	Hot Food Container	1 unit	Existing	691.28	20	\$490.95	43%	at stock turnover	\$0.07	23.38	26.46	RTF Workbook
Restaurant	Food Preparation	Steamer	1 unit	Existing	57,034.43	9	\$837.45	43%	at stock turnover	\$0.00	78.50	90.89	RTF Workbook
Restaurant	Office Equipment	Desktop Computer	1 unit	Existing	106.43	5	\$0.01	100%	at stock turnover	\$0.00	9.86	12.80	7th Power Plan
Restaurant	Office Equipment	Laptop	1 unit	Existing	31.76	4	\$0.01	100%	at stock turnover	\$0.00	0.97	1.20	7th Power Plan
Restaurant	Office Equipment	Monitor	1 unit	Existing	26.41	5	\$0.01	100%	at stock turnover	\$0.00	0.62	0.80	7th Power Plan
Restaurant	Office Equipment	Server	1 unit	Existing	63.85	4	\$0.01	100%	at stock turnover	\$0.00	7.45	9.08	AEG Research
Restaurant	Office Equipment	Printer/Copier/Fax	1 unit	Existing	192.16	6	\$0.01	100%	at stock turnover	\$0.00	0.46	0.55	ENERGY STAR
Restaurant	Office Equipment	POS Terminal	1 unit	Existing	106.43	5	\$0.01	40%	at stock turnover	\$0.00	4.54	5.54	7th Power Plan
Restaurant	Miscellaneous	Non-HVAC Motors	1 unit	Existing	0.00	15	\$0.00	90%	at stock turnover	\$0.00	0.00	0.00	N/A
Restaurant	Miscellaneous	Pool Pump	1 unit	Existing	0.00	10	\$246.30	0%	at stock turnover	\$0.00	0.00	0.00	Southern California Edison

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Restaurant	Miscellaneous	Pool Heater	1 unit	Existing	0.00	15	\$3,546.07	0%	at stock turnover	\$0.00	0.00	0.00	AEG Research
Restaurant	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Restaurant	Cooling	Air-Cooled Chiller	1 kBTU/hr	New	0.00	20	\$26.36	15%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Restaurant	Cooling	Water-Cooled Chiller	1 kBTU/hr	New	0.00	25	\$12.65	10%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Restaurant	Cooling	RTU	1 kBTU/hr	New	3.80	15	\$6.75	50%	at stock turnover	\$0.19	14.37	16.58	Annual Energy Outlook, 2015
Restaurant	Cooling	Room AC	1 kBTU/hr	New	12.23	15	\$23.62	3%	at stock turnover	\$0.21	1.69	1.95	Annual Energy Outlook, 2015
Restaurant	Cooling	Evaporative AC	11 per TR	New	0.00	15	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	New Buildings Institute Study, 2006
Restaurant	Cooling	Air-Source Heat Pump	1 kBTU/hr	New	7.32	15	\$21.65	7%	at stock turnover	\$0.28	2.20	2.44	Annual Energy Outlook, 2015
Restaurant	Heating	Air-Source Heat Pump	1 kBTU/hr	New	1.23	15	\$21.65	7%	at stock turnover	\$0.28	0.37	0.41	Annual Energy Outlook, 2015
Restaurant	Cooling	Geothermal Heat Pump	1 kBTU/hr	New	17.80	25	\$26.36	7%	at stock turnover	\$0.11	2.27	2.55	Annual Energy Outlook, 2015
Restaurant	Heating	Geothermal Heat Pump	1 kBTU/hr	New	4.61	25	\$26.36	7%	at stock turnover	\$0.11	0.59	0.66	Annual Energy Outlook, 2015
Restaurant	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Restaurant	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	40%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Restaurant	Ventilation	Ventilation	1000 CFM	New	681.94	20	\$1,219.71	100%	at stock turnover	\$0.17	11.60	12.89	AEG-BEST
Restaurant	Water Heating	Water Heater	65 gallons	New	1,864.71	13	\$3,537.01	56%	at stock turnover	\$0.22	186.98	212.58	7th Power Plan
Restaurant	Interior Lighting	Screw-in	lamps	New	61.58	8	\$3.95	100%	at stock turnover	\$0.00	35.02	37.51	7th Power Plan
Restaurant	Interior Lighting	Linear Lighting	lamps	New	141.59	17	\$52.83	100%	at stock turnover	\$0.03	73.22	79.73	7th Power Plan
Restaurant	Interior Lighting	High-Bay Fixtures	lamps	New	862.37	15	\$123.86	100%	at stock turnover	\$0.02	111.85	126.13	Annual Energy Outlook, 2015
Restaurant	Exterior Lighting	Screw-in	lamps	New	51.31	8	\$3.95	100%	at stock turnover	\$0.00	6.07	6.50	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Restaurant	Exterior Lighting	Linear Lighting	lamps	New	117.47	17	\$52.83	100%	at stock turnover	\$0.03	15.81	17.21	7th Power Plan
Restaurant	Exterior Lighting	Area Lighting	lamps	New	967.43	15	\$44.55	100%	at stock turnover	\$0.00	102.20	112.75	Annual Energy Outlook, 2015
Restaurant	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	New	1,507.00	11	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Restaurant	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	New	605.00	15	\$0.00	14%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Restaurant	Refrigeration	Glass Door Display	1 unit	New	767.00	15	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Restaurant	Refrigeration	Open Display Case	1 unit	New	1,438.00	10	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Restaurant	Refrigeration	Icemaker	1 unit	New	388.40	9	\$1,056.09	45%	at stock turnover	\$0.43	10.23	11.64	ENERGY STAR
Restaurant	Refrigeration	Vending Machine	1 unit	New	69.80	10	\$42.81	45%	at stock turnover	\$0.08	1.66	1.87	EIA 2011-2012 Ref. Case
Restaurant	Food Preparation	Oven	1 unit	New	13,015.66	10	\$1,067.99	66%	at stock turnover	\$0.01	19.32	21.62	RTF Workbook
Restaurant	Food Preparation	Fryer	1 unit	New	2,482.63	10	\$782.02	76%	at stock turnover	\$0.04	42.61	48.09	RTF Workbook
Restaurant	Food Preparation	Dishwasher	1 unit	New	1,161.85	15	\$564.57	43%	at stock turnover	\$0.05	5.16	5.74	ENERGY STAR
Restaurant	Food Preparation	Hot Food Container	1 unit	New	691.28	20	\$490.95	43%	at stock turnover	\$0.07	12.89	14.43	RTF Workbook
Restaurant	Food Preparation	Steamer	1 unit	New	57,034.43	9	\$837.45	43%	at stock turnover	\$0.00	39.04	43.78	RTF Workbook
Restaurant	Office Equipment	Desktop Computer	1 unit	New	106.43	5	\$0.01	100%	at stock turnover	\$0.00	3.27	3.99	7th Power Plan
Restaurant	Office Equipment	Laptop	1 unit	New	31.76	4	\$0.01	100%	at stock turnover	\$0.00	0.34	0.41	7th Power Plan
Restaurant	Office Equipment	Monitor	1 unit	New	26.41	5	\$0.01	100%	at stock turnover	\$0.00	0.20	0.25	7th Power Plan
Restaurant	Office Equipment	Server	1 unit	New	63.85	4	\$0.01	100%	at stock turnover	\$0.00	2.46	2.88	AEG Research
Restaurant	Office Equipment	Printer/Copier/Fax	1 unit	New	192.16	6	\$0.01	100%	at stock turnover	\$0.00	0.19	0.21	ENERGY STAR
Restaurant	Office Equipment	POS Terminal	1 unit	New	106.43	5	\$0.01	40%	at stock turnover	\$0.00	1.73	2.02	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Restaurant	Miscellaneous	Non-HVAC Motors	1 unit	New	0.00	15	\$0.00	90%	at stock turnover	\$0.00	0.00	0.00	N/A
Restaurant	Miscellaneous	Pool Pump	1 unit	New	0.00	10	\$246.30	0%	at stock turnover	\$0.00	0.00	0.00	Southern California Edison
Restaurant	Miscellaneous	Pool Heater	1 unit	New	0.00	15	\$3,546.07	0%	at stock turnover	\$0.00	0.00	0.00	AEG Research
Restaurant	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Grocery	Cooling	Air-Cooled Chiller	1 kBTU/hr	Existing	45.24	20	\$26.36	15%	at stock turnover	\$0.06	1.17	1.35	Annual Energy Outlook, 2015
Grocery	Cooling	Water-Cooled Chiller	1 kBTU/hr	Existing	68.94	25	\$12.65	10%	at stock turnover	\$0.02	1.09	1.27	Annual Energy Outlook, 2015
Grocery	Cooling	RTU	1 kBTU/hr	Existing	7.36	15	\$6.75	50%	at stock turnover	\$0.10	31.25	37.19	Annual Energy Outlook, 2015
Grocery	Cooling	Room AC	1 kBTU/hr	Existing	26.26	15	\$23.62	3%	at stock turnover	\$0.10	3.33	3.96	Annual Energy Outlook, 2015
Grocery	Cooling	Evaporative AC	11 per TR	Existing	0.00	15	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	New Buildings Institute Study, 2006
Grocery	Cooling	Air-Source Heat Pump	1 kBTU/hr	Existing	12.96	15	\$21.65	7%	at stock turnover	\$0.16	2.31	2.63	Annual Energy Outlook, 2015
Grocery	Heating	Air-Source Heat Pump	1 kBTU/hr	Existing	1.41	15	\$21.65	7%	at stock turnover	\$0.16	0.25	0.29	Annual Energy Outlook, 2015
Grocery	Cooling	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	7%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Grocery	Heating	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	7%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Grocery	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Grocery	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	40%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Grocery	Ventilation	Ventilation	1000 CFM	Existing	7,959.67	20	\$1,219.71	100%	at stock turnover	\$0.01	53.07	59.71	AEG-BEST
Grocery	Water Heating	Water Heater	65 gallons	Existing	1,864.71	13	\$3,537.01	56%	at stock turnover	\$0.22	144.14	170.02	7th Power Plan
Grocery	Interior Lighting	Screw-in	lamps	Existing	92.92	8	\$3.95	100%	at stock turnover	\$0.00	19.75	26.01	7th Power Plan
Grocery	Interior Lighting	Linear Lighting	lamps	Existing	174.34	17	\$52.83	100%	at stock turnover	\$0.02	423.18	466.84	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Grocery	Interior Lighting	High-Bay Fixtures	lamps	Existing	926.12	15	\$123.86	100%	at stock turnover	\$0.01	136.05	156.25	Annual Energy Outlook, 2015
Grocery	Exterior Lighting	Screw-in	lamps	Existing	57.55	8	\$3.95	100%	at stock turnover	\$0.00	11.46	15.10	7th Power Plan
Grocery	Exterior Lighting	Linear Lighting	lamps	Existing	113.88	17	\$52.83	100%	at stock turnover	\$0.03	32.15	35.47	7th Power Plan
Grocery	Exterior Lighting	Area Lighting	lamps	Existing	953.44	15	\$44.55	100%	at stock turnover	\$0.01	148.80	166.62	Annual Energy Outlook, 2015
Grocery	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	Existing	1,507.00	11	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Grocery	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	Existing	605.00	15	\$0.00	14%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Grocery	Refrigeration	Glass Door Display	1 unit	Existing	767.00	15	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Grocery	Refrigeration	Open Display Case	1 unit	Existing	1,438.00	10	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Grocery	Refrigeration	Icemaker	1 unit	Existing	388.40	9	\$1,056.09	45%	at stock turnover	\$0.43	4.59	5.44	ENERGY STAR
Grocery	Refrigeration	Vending Machine	1 unit	Existing	69.80	10	\$42.81	45%	at stock turnover	\$0.08	1.91	2.23	EIA 2011-2012 Ref. Case
Grocery	Food Preparation	Oven	1 unit	Existing	13,015.66	10	\$1,067.99	66%	at stock turnover	\$0.01	2.21	2.55	RTF Workbook
Grocery	Food Preparation	Fryer	1 unit	Existing	2,482.63	10	\$782.02	76%	at stock turnover	\$0.04	16.99	19.92	RTF Workbook
Grocery	Food Preparation	Dishwasher	1 unit	Existing	1,161.85	15	\$564.57	43%	at stock turnover	\$0.05	4.58	5.18	ENERGY STAR
Grocery	Food Preparation	Hot Food Container	1 unit	Existing	691.28	20	\$490.95	43%	at stock turnover	\$0.07	6.94	7.86	RTF Workbook
Grocery	Food Preparation	Steamer	1 unit	Existing	57,034.43	9	\$837.45	43%	at stock turnover	\$0.00	29.93	34.72	RTF Workbook
Grocery	Office Equipment	Desktop Computer	1 unit	Existing	106.43	5	\$0.01	100%	at stock turnover	\$0.00	5.70	7.40	7th Power Plan
Grocery	Office Equipment	Laptop	1 unit	Existing	31.76	4	\$0.01	100%	at stock turnover	\$0.00	0.46	0.57	7th Power Plan
Grocery	Office Equipment	Monitor	1 unit	Existing	26.41	5	\$0.01	100%	at stock turnover	\$0.00	0.36	0.46	7th Power Plan
Grocery	Office Equipment	Server	1 unit	Existing	63.85	4	\$0.01	100%	at stock turnover	\$0.00	3.18	3.89	AEG Research

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Grocery	Office Equipment	Printer/Copier/Fax	1 unit	Existing	192.16	6	\$0.01	100%	at stock turnover	\$0.00	0.13	0.16	ENERGY STAR
Grocery	Office Equipment	POS Terminal	1 unit	Existing	106.43	5	\$0.01	40%	at stock turnover	\$0.00	3.25	3.97	7th Power Plan
Grocery	Miscellaneous	Non-HVAC Motors	1 unit	Existing	0.00	15	\$0.00	90%	at stock turnover	\$0.00	0.00	0.00	N/A
Grocery	Miscellaneous	Pool Pump	1 unit	Existing	0.00	10	\$246.30	0%	at stock turnover	\$0.00	0.00	0.00	Southern California Edison
Grocery	Miscellaneous	Pool Heater	1 unit	Existing	0.00	15	\$3,546.07	0%	at stock turnover	\$0.00	0.00	0.00	AEG Research
Grocery	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Grocery	Cooling	Air-Cooled Chiller	1 kBTU/hr	New	38.94	20	\$26.36	15%	at stock turnover	\$0.06	0.73	0.83	Annual Energy Outlook, 2015
Grocery	Cooling	Water-Cooled Chiller	1 kBTU/hr	New	59.99	25	\$12.65	10%	at stock turnover	\$0.02	0.59	0.68	Annual Energy Outlook, 2015
Grocery	Cooling	RTU	1 kBTU/hr	New	8.08	15	\$6.75	50%	at stock turnover	\$0.09	19.57	22.59	Annual Energy Outlook, 2015
Grocery	Cooling	Room AC	1 kBTU/hr	New	22.98	15	\$23.62	3%	at stock turnover	\$0.11	1.66	1.92	Annual Energy Outlook, 2015
Grocery	Cooling	Evaporative AC	11 per TR	New	0.00	15	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	New Buildings Institute Study, 2006
Grocery	Cooling	Air-Source Heat Pump	1 kBTU/hr	New	11.19	15	\$21.65	7%	at stock turnover	\$0.19	1.20	1.33	Annual Energy Outlook, 2015
Grocery	Heating	Air-Source Heat Pump	1 kBTU/hr	New	1.35	15	\$21.65	7%	at stock turnover	\$0.19	0.14	0.16	Annual Energy Outlook, 2015
Grocery	Cooling	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	7%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Grocery	Heating	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	7%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Grocery	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Grocery	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	40%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Grocery	Ventilation	Ventilation	1000 CFM	New	6,888.87	20	\$1,219.71	100%	at stock turnover	\$0.02	23.25	25.84	AEG-BEST
Grocery	Water Heating	Water Heater	65 gallons	New	1,864.71	13	\$3,537.01	56%	at stock turnover	\$0.22	75.61	86.00	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Grocery	Interior Lighting	Screw-in	lamps	New	92.73	8	\$3.95	100%	at stock turnover	\$0.00	10.16	11.22	7th Power Plan
Grocery	Interior Lighting	Linear Lighting	lamps	New	174.34	17	\$52.83	100%	at stock turnover	\$0.02	210.82	229.52	7th Power Plan
Grocery	Interior Lighting	High-Bay Fixtures	lamps	New	918.55	15	\$123.86	100%	at stock turnover	\$0.01	76.97	86.57	Annual Energy Outlook, 2015
Grocery	Exterior Lighting	Screw-in	lamps	New	57.43	8	\$3.95	100%	at stock turnover	\$0.00	5.90	6.51	7th Power Plan
Grocery	Exterior Lighting	Linear Lighting	lamps	New	113.88	17	\$52.83	100%	at stock turnover	\$0.03	16.02	17.44	7th Power Plan
Grocery	Exterior Lighting	Area Lighting	lamps	New	953.44	15	\$44.55	100%	at stock turnover	\$0.01	85.66	94.52	Annual Energy Outlook, 2015
Grocery	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	New	1,507.00	11	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Grocery	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	New	605.00	15	\$0.00	14%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Grocery	Refrigeration	Glass Door Display	1 unit	New	767.00	15	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Grocery	Refrigeration	Open Display Case	1 unit	New	1,438.00	10	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Grocery	Refrigeration	Icemaker	1 unit	New	388.40	9	\$1,056.09	45%	at stock turnover	\$0.43	2.39	2.73	ENERGY STAR
Grocery	Refrigeration	Vending Machine	1 unit	New	69.80	10	\$42.81	45%	at stock turnover	\$0.08	0.94	1.06	EIA 2011-2012 Ref. Case
Grocery	Food Preparation	Oven	1 unit	New	13,015.66	10	\$1,067.99	66%	at stock turnover	\$0.01	1.66	1.85	RTF Workbook
Grocery	Food Preparation	Fryer	1 unit	New	2,482.63	10	\$782.02	76%	at stock turnover	\$0.04	8.64	9.75	RTF Workbook
Grocery	Food Preparation	Dishwasher	1 unit	New	1,161.85	15	\$564.57	43%	at stock turnover	\$0.05	2.04	2.27	ENERGY STAR
Grocery	Food Preparation	Hot Food Container	1 unit	New	691.28	20	\$490.95	43%	at stock turnover	\$0.07	4.35	4.87	RTF Workbook
Grocery	Food Preparation	Steamer	1 unit	New	57,034.43	9	\$837.45	43%	at stock turnover	\$0.00	17.08	19.20	RTF Workbook
Grocery	Office Equipment	Desktop Computer	1 unit	New	106.43	5	\$0.01	100%	at stock turnover	\$0.00	2.12	2.59	7th Power Plan
Grocery	Office Equipment	Laptop	1 unit	New	31.76	4	\$0.01	100%	at stock turnover	\$0.00	0.19	0.22	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Grocery	Office Equipment	Monitor	1 unit	New	26.41	5	\$0.01	100%	at stock turnover	\$0.00	0.13	0.16	7th Power Plan
Grocery	Office Equipment	Server	1 unit	New	63.85	4	\$0.01	100%	at stock turnover	\$0.00	1.22	1.44	AEG Research
Grocery	Office Equipment	Printer/Copier/Fax	1 unit	New	192.16	6	\$0.01	100%	at stock turnover	\$0.00	0.06	0.07	ENERGY STAR
Grocery	Office Equipment	POS Terminal	1 unit	New	106.43	5	\$0.01	40%	at stock turnover	\$0.00	1.40	1.64	7th Power Plan
Grocery	Miscellaneous	Non-HVAC Motors	1 unit	New	0.00	15	\$0.00	90%	at stock turnover	\$0.00	0.00	0.00	N/A
Grocery	Miscellaneous	Pool Pump	1 unit	New	0.00	10	\$246.30	0%	at stock turnover	\$0.00	0.00	0.00	Southern California Edison
Grocery	Miscellaneous	Pool Heater	1 unit	New	0.00	15	\$3,546.07	0%	at stock turnover	\$0.00	0.00	0.00	AEG Research
Grocery	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Health	Cooling	Air-Cooled Chiller	1 kBTU/hr	Existing	41.40	20	\$26.36	15%	at stock turnover	\$0.06	50.42	58.45	Annual Energy Outlook, 2015
Health	Cooling	Water-Cooled Chiller	1 kBTU/hr	Existing	71.58	25	\$12.65	10%	at stock turnover	\$0.02	348.70	404.27	Annual Energy Outlook, 2015
Health	Cooling	RTU	1 kBTU/hr	Existing	6.11	15	\$6.75	50%	at stock turnover	\$0.12	5.06	6.03	Annual Energy Outlook, 2015
Health	Cooling	Room AC	1 kBTU/hr	Existing	21.83	15	\$23.62	3%	at stock turnover	\$0.12	0.73	0.87	Annual Energy Outlook, 2015
Health	Cooling	Evaporative AC	11 per TR	Existing	0.00	15	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	New Buildings Institute Study, 2006
Health	Cooling	Air-Source Heat Pump	1 kBTU/hr	Existing	11.75	15	\$21.65	7%	at stock turnover	\$0.16	1.19	1.35	Annual Energy Outlook, 2015
Health	Heating	Air-Source Heat Pump	1 kBTU/hr	Existing	3.32	15	\$21.65	7%	at stock turnover	\$0.16	0.34	0.38	Annual Energy Outlook, 2015
Health	Cooling	Geothermal Heat Pump	1 kBTU/hr	Existing	28.52	25	\$26.36	7%	at stock turnover	\$0.06	1.20	1.35	Annual Energy Outlook, 2015
Health	Heating	Geothermal Heat Pump	1 kBTU/hr	Existing	11.02	25	\$26.36	7%	at stock turnover	\$0.06	0.46	0.52	Annual Energy Outlook, 2015
Health	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Health	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	40%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Health	Ventilation	Ventilation	1000 CFM	Existing	5,050.28	20	\$1,219.71	100%	at stock turnover	\$0.02	46.17	51.96	AEG-BEST
Health	Water Heating	Water Heater	65 gallons	Existing	1,864.71	13	\$3,537.01	56%	at stock turnover	\$0.22	120.79	142.57	7th Power Plan
Health	Interior Lighting	Screw-in	lamps	Existing	85.08	8	\$3.95	100%	at stock turnover	\$0.00	51.10	67.58	7th Power Plan
Health	Interior Lighting	Linear Lighting	lamps	Existing	149.64	17	\$52.83	100%	at stock turnover	\$0.03	473.27	522.16	7th Power Plan
Health	Interior Lighting	High-Bay Fixtures	lamps	Existing	898.70	15	\$123.86	100%	at stock turnover	\$0.01	269.51	310.12	Annual Energy Outlook, 2015
Health	Exterior Lighting	Screw-in	lamps	Existing	60.17	8	\$3.95	100%	at stock turnover	\$0.00	3.17	4.19	7th Power Plan
Health	Exterior Lighting	Linear Lighting	lamps	Existing	113.23	17	\$52.83	100%	at stock turnover	\$0.03	9.54	10.52	7th Power Plan
Health	Exterior Lighting	Area Lighting	lamps	Existing	947.81	15	\$44.55	100%	at stock turnover	\$0.01	75.83	84.92	Annual Energy Outlook, 2015
Health	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	Existing	1,507.00	11	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Health	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	Existing	605.00	15	\$0.00	14%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Health	Refrigeration	Glass Door Display	1 unit	Existing	767.00	15	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Health	Refrigeration	Open Display Case	1 unit	Existing	1,438.00	10	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Health	Refrigeration	Icemaker	1 unit	Existing	388.40	9	\$1,056.09	45%	at stock turnover	\$0.43	1.78	2.11	ENERGY STAR
Health	Refrigeration	Vending Machine	1 unit	Existing	69.80	10	\$42.81	45%	at stock turnover	\$0.08	0.68	0.80	EIA 2011-2012 Ref. Case
Health	Food Preparation	Oven	1 unit	Existing	13,015.66	10	\$1,067.99	66%	at stock turnover	\$0.01	19.18	22.40	RTF Workbook
Health	Food Preparation	Fryer	1 unit	Existing	2,482.63	10	\$782.02	76%	at stock turnover	\$0.04	17.22	20.21	RTF Workbook
Health	Food Preparation	Dishwasher	1 unit	Existing	1,161.85	15	\$564.57	43%	at stock turnover	\$0.05	4.91	5.55	ENERGY STAR
Health	Food Preparation	Hot Food Container	1 unit	Existing	691.28	20	\$490.95	43%	at stock turnover	\$0.07	5.75	6.50	RTF Workbook
Health	Food Preparation	Steamer	1 unit	Existing	57,034.43	9	\$837.45	43%	at stock turnover	\$0.00	70.39	82.30	RTF Workbook

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Health	Office Equipment	Desktop Computer	1 unit	Existing	106.43	5	\$0.01	100%	at stock turnover	\$0.00	21.68	28.17	7th Power Plan
Health	Office Equipment	Laptop	1 unit	Existing	31.76	4	\$0.01	100%	at stock turnover	\$0.00	1.06	1.31	7th Power Plan
Health	Office Equipment	Monitor	1 unit	Existing	26.41	5	\$0.01	100%	at stock turnover	\$0.00	1.36	1.76	7th Power Plan
Health	Office Equipment	Server	1 unit	Existing	63.85	4	\$0.01	100%	at stock turnover	\$0.00	2.41	2.95	AEG Research
Health	Office Equipment	Printer/Copier/Fax	1 unit	Existing	192.16	6	\$0.01	100%	at stock turnover	\$0.00	0.49	0.59	ENERGY STAR
Health	Office Equipment	POS Terminal	1 unit	Existing	106.43	5	\$0.01	40%	at stock turnover	\$0.00	2.46	3.01	7th Power Plan
Health	Miscellaneous	Non-HVAC Motors	1 unit	Existing	0.00	15	\$0.00	90%	at stock turnover	\$0.00	0.00	0.00	N/A
Health	Miscellaneous	Pool Pump	1 unit	Existing	0.00	10	\$246.30	0%	at stock turnover	\$0.00	0.00	0.00	Southern California Edison
Health	Miscellaneous	Pool Heater	1 unit	Existing	0.00	15	\$3,546.07	0%	at stock turnover	\$0.00	0.00	0.00	AEG Research
Health	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Health	Cooling	Air-Cooled Chiller	1 kBTU/hr	New	31.13	20	\$26.36	15%	at stock turnover	\$0.08	28.42	32.49	Annual Energy Outlook, 2015
Health	Cooling	Water-Cooled Chiller	1 kBTU/hr	New	54.80	25	\$12.65	10%	at stock turnover	\$0.02	170.53	197.41	Annual Energy Outlook, 2015
Health	Cooling	RTU	1 kBTU/hr	New	6.78	15	\$6.75	50%	at stock turnover	\$0.11	3.82	4.41	Annual Energy Outlook, 2015
Health	Cooling	Room AC	1 kBTU/hr	New	19.10	15	\$23.62	3%	at stock turnover	\$0.14	0.38	0.44	Annual Energy Outlook, 2015
Health	Cooling	Evaporative AC	11 per TR	New	0.00	15	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	New Buildings Institute Study, 2006
Health	Cooling	Air-Source Heat Pump	1 kBTU/hr	New	10.15	15	\$21.65	7%	at stock turnover	\$0.18	0.64	0.71	Annual Energy Outlook, 2015
Health	Heating	Air-Source Heat Pump	1 kBTU/hr	New	3.18	15	\$21.65	7%	at stock turnover	\$0.18	0.20	0.22	Annual Energy Outlook, 2015
Health	Cooling	Geothermal Heat Pump	1 kBTU/hr	New	31.74	25	\$26.36	7%	at stock turnover	\$0.06	0.86	0.96	Annual Energy Outlook, 2015
Health	Heating	Geothermal Heat Pump	1 kBTU/hr	New	6.31	25	\$26.36	7%	at stock turnover	\$0.06	0.17	0.19	Annual Energy Outlook, 2015

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Health	Heating	Electric Furnace	1 kBtu/hr	New	0.00	18	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Health	Heating	Electric Room Heat	3.5 kBtu/hr	New	0.00	18	\$0.00	40%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Health	Ventilation	Ventilation	1000 CFM	New	4,370.87	20	\$1,219.71	100%	at stock turnover	\$0.03	32.53	36.16	AEG-BEST
Health	Water Heating	Water Heater	65 gallons	New	1,864.71	13	\$3,537.01	56%	at stock turnover	\$0.22	65.93	75.00	7th Power Plan
Health	Interior Lighting	Screw-in	lamps	New	85.32	8	\$3.95	100%	at stock turnover	\$0.00	27.34	30.24	7th Power Plan
Health	Interior Lighting	Linear Lighting	lamps	New	149.64	17	\$52.83	100%	at stock turnover	\$0.03	244.94	266.65	7th Power Plan
Health	Interior Lighting	High-Bay Fixtures	lamps	New	880.21	15	\$123.86	100%	at stock turnover	\$0.02	156.58	176.27	Annual Energy Outlook, 2015
Health	Exterior Lighting	Screw-in	lamps	New	60.34	8	\$3.95	100%	at stock turnover	\$0.00	1.70	1.88	7th Power Plan
Health	Exterior Lighting	Linear Lighting	lamps	New	113.23	17	\$52.83	100%	at stock turnover	\$0.03	4.94	5.37	7th Power Plan
Health	Exterior Lighting	Area Lighting	lamps	New	947.81	15	\$44.55	100%	at stock turnover	\$0.01	45.35	50.05	Annual Energy Outlook, 2015
Health	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	New	1,507.00	11	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Health	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	New	605.00	15	\$0.00	14%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Health	Refrigeration	Glass Door Display	1 unit	New	767.00	15	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Health	Refrigeration	Open Display Case	1 unit	New	1,438.00	10	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Health	Refrigeration	Icemaker	1 unit	New	388.40	9	\$1,056.09	45%	at stock turnover	\$0.43	0.66	0.76	ENERGY STAR
Health	Refrigeration	Vending Machine	1 unit	New	69.80	10	\$42.81	45%	at stock turnover	\$0.08	0.35	0.39	EIA 2011-2012 Ref. Case
Health	Food Preparation	Oven	1 unit	New	13,015.66	10	\$1,067.99	66%	at stock turnover	\$0.01	22.55	25.38	RTF Workbook
Health	Food Preparation	Fryer	1 unit	New	2,482.63	10	\$782.02	76%	at stock turnover	\$0.04	9.11	10.29	RTF Workbook
Health	Food Preparation	Dishwasher	1 unit	New	1,161.85	15	\$564.57	43%	at stock turnover	\$0.05	2.27	2.53	ENERGY STAR

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Health	Food Preparation	Hot Food Container	1 unit	New	691.28	20	\$490.95	43%	at stock turnover	\$0.07	3.83	4.28	RTF Workbook
Health	Food Preparation	Steamer	1 unit	New	57,034.43	9	\$837.45	43%	at stock turnover	\$0.00	40.10	45.30	RTF Workbook
Health	Office Equipment	Desktop Computer	1 unit	New	106.43	5	\$0.01	100%	at stock turnover	\$0.00	8.37	10.23	7th Power Plan
Health	Office Equipment	Laptop	1 unit	New	31.76	4	\$0.01	100%	at stock turnover	\$0.00	0.44	0.52	7th Power Plan
Health	Office Equipment	Monitor	1 unit	New	26.41	5	\$0.01	100%	at stock turnover	\$0.00	0.52	0.64	7th Power Plan
Health	Office Equipment	Server	1 unit	New	63.85	4	\$0.01	100%	at stock turnover	\$0.00	0.97	1.14	AEG Research
Health	Office Equipment	Printer/Copier/Fax	1 unit	New	192.16	6	\$0.01	100%	at stock turnover	\$0.00	0.24	0.27	ENERGY STAR
Health	Office Equipment	POS Terminal	1 unit	New	106.43	5	\$0.01	40%	at stock turnover	\$0.00	1.10	1.29	7th Power Plan
Health	Miscellaneous	Non-HVAC Motors	1 unit	New	0.00	15	\$0.00	90%	at stock turnover	\$0.00	0.00	0.00	N/A
Health	Miscellaneous	Pool Pump	1 unit	New	0.00	10	\$246.30	0%	at stock turnover	\$0.00	0.00	0.00	Southern California Edison
Health	Miscellaneous	Pool Heater	1 unit	New	0.00	15	\$3,546.07	0%	at stock turnover	\$0.00	0.00	0.00	AEG Research
Health	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
College	Cooling	Air-Cooled Chiller	1 kBtu/hr	Existing	29.27	20	\$26.36	15%	at stock turnover	\$0.09	38.58	44.75	Annual Energy Outlook, 2015
College	Cooling	Water-Cooled Chiller	1 kBtu/hr	Existing	0.00	25	\$12.65	10%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
College	Cooling	RTU	1 kBtu/hr	Existing	2.80	15	\$6.75	50%	at stock turnover	\$0.26	7.18	8.55	Annual Energy Outlook, 2015
College	Cooling	Room AC	1 kBtu/hr	Existing	9.98	15	\$23.62	3%	at stock turnover	\$0.26	1.66	1.98	Annual Energy Outlook, 2015
College	Cooling	Evaporative AC	11 per TR	Existing	0.00	15	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	New Buildings Institute Study, 2006
College	Cooling	Air-Source Heat Pump	1 kBtu/hr	Existing	5.38	15	\$21.65	7%	at stock turnover	\$0.33	1.16	1.32	Annual Energy Outlook, 2015
College	Heating	Air-Source Heat Pump	1 kBtu/hr	Existing	1.84	15	\$21.65	7%	at stock turnover	\$0.33	0.39	0.45	Annual Energy Outlook, 2015

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
College	Cooling	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	7%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
College	Heating	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	7%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
College	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
College	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	40%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
College	Ventilation	Ventilation	1000 CFM	Existing	1,219.18	20	\$1,219.71	100%	at stock turnover	\$0.10	33.58	37.81	AEG-BEST
College	Water Heating	Water Heater	65 gallons	Existing	1,813.20	13	\$3,537.01	56%	at stock turnover	\$0.23	84.14	99.41	7th Power Plan
College	Interior Lighting	Screw-in	lamps	Existing	48.37	8	\$3.95	100%	at stock turnover	\$0.00	4.53	6.00	7th Power Plan
College	Interior Lighting	Linear Lighting	lamps	Existing	83.68	17	\$52.83	100%	at stock turnover	\$0.05	133.36	147.15	7th Power Plan
College	Interior Lighting	High-Bay Fixtures	lamps	Existing	516.47	15	\$123.86	100%	at stock turnover	\$0.03	74.49	85.88	Annual Energy Outlook, 2015
College	Exterior Lighting	Screw-in	lamps	Existing	58.91	8	\$3.95	100%	at stock turnover	\$0.00	0.55	0.74	7th Power Plan
College	Exterior Lighting	Linear Lighting	lamps	Existing	106.29	17	\$52.83	100%	at stock turnover	\$0.04	45.67	50.40	7th Power Plan
College	Exterior Lighting	Area Lighting	lamps	Existing	718.82	15	\$44.55	100%	at stock turnover	\$0.01	16.60	18.60	Annual Energy Outlook, 2015
College	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	Existing	1,507.00	11	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
College	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	Existing	605.00	15	\$0.00	14%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
College	Refrigeration	Glass Door Display	1 unit	Existing	767.00	15	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
College	Refrigeration	Open Display Case	1 unit	Existing	1,438.00	10	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
College	Refrigeration	Icemaker	1 unit	Existing	388.40	9	\$1,056.09	45%	at stock turnover	\$0.43	0.13	0.16	ENERGY STAR
College	Refrigeration	Vending Machine	1 unit	Existing	69.80	10	\$42.81	45%	at stock turnover	\$0.08	0.10	0.11	EIA 2011-2012 Ref. Case
College	Food Preparation	Oven	1 unit	Existing	13,015.66	10	\$1,067.99	66%	at stock turnover	\$0.01	3.04	3.52	RTF Workbook

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
College	Food Preparation	Fryer	1 unit	Existing	2,482.63	10	\$782.02	76%	at stock turnover	\$0.04	1.13	1.32	RTF Workbook
College	Food Preparation	Dishwasher	1 unit	Existing	1,161.85	15	\$564.57	43%	at stock turnover	\$0.05	0.79	0.89	ENERGY STAR
College	Food Preparation	Hot Food Container	1 unit	Existing	691.28	20	\$490.95	43%	at stock turnover	\$0.07	0.67	0.76	RTF Workbook
College	Food Preparation	Steamer	1 unit	Existing	57,034.43	9	\$837.45	43%	at stock turnover	\$0.00	8.47	9.84	RTF Workbook
College	Office Equipment	Desktop Computer	1 unit	Existing	106.43	5	\$0.01	100%	at stock turnover	\$0.00	12.62	16.41	7th Power Plan
College	Office Equipment	Laptop	1 unit	Existing	31.76	4	\$0.01	100%	at stock turnover	\$0.00	0.46	0.57	7th Power Plan
College	Office Equipment	Monitor	1 unit	Existing	26.41	5	\$0.01	100%	at stock turnover	\$0.00	0.79	1.03	7th Power Plan
College	Office Equipment	Server	1 unit	Existing	63.85	4	\$0.01	100%	at stock turnover	\$0.00	1.39	1.71	AEG Research
College	Office Equipment	Printer/Copier/Fax	1 unit	Existing	192.16	6	\$0.01	100%	at stock turnover	\$0.00	0.36	0.43	ENERGY STAR
College	Office Equipment	POS Terminal	1 unit	Existing	106.43	5	\$0.01	40%	at stock turnover	\$0.00	0.71	0.87	7th Power Plan
College	Miscellaneous	Non-HVAC Motors	1 unit	Existing	0.00	15	\$0.00	90%	at stock turnover	\$0.00	0.00	0.00	N/A
College	Miscellaneous	Pool Pump	1 unit	Existing	1,234.20	10	\$246.30	0%	at stock turnover	\$0.03	1.54	1.74	Southern California Edison
College	Miscellaneous	Pool Heater	1 unit	Existing	13,164.62	15	\$3,546.07	0%	at stock turnover	\$0.03	1.08	1.20	AEG Research
College	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
College	Cooling	Air-Cooled Chiller	1 kBtu/hr	New	28.59	20	\$26.36	15%	at stock turnover	\$0.09	29.94	34.25	Annual Energy Outlook, 2015
College	Cooling	Water-Cooled Chiller	1 kBtu/hr	New	0.00	25	\$12.65	10%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
College	Cooling	RTU	1 kBtu/hr	New	2.56	15	\$6.75	50%	at stock turnover	\$0.29	4.13	4.77	Annual Energy Outlook, 2015
College	Cooling	Room AC	1 kBtu/hr	New	8.86	15	\$23.62	3%	at stock turnover	\$0.29	0.93	1.07	Annual Energy Outlook, 2015
College	Cooling	Evaporative AC	11 per TR	New	0.00	15	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	New Buildings Institute Study, 2006

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
College	Cooling	Air-Source Heat Pump	1 kBTU/hr	New	4.92	15	\$21.65	7%	at stock turnover	\$0.36	0.70	0.78	Annual Energy Outlook, 2015
College	Heating	Air-Source Heat Pump	1 kBTU/hr	New	1.73	15	\$21.65	7%	at stock turnover	\$0.36	0.25	0.27	Annual Energy Outlook, 2015
College	Cooling	Geothermal Heat Pump	1 kBTU/hr	New	11.95	25	\$26.36	7%	at stock turnover	\$0.13	0.13	0.15	Annual Energy Outlook, 2015
College	Heating	Geothermal Heat Pump	1 kBTU/hr	New	6.79	25	\$26.36	7%	at stock turnover	\$0.13	0.07	0.08	Annual Energy Outlook, 2015
College	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
College	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	40%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
College	Ventilation	Ventilation	1000 CFM	New	1,233.56	20	\$1,219.71	100%	at stock turnover	\$0.09	27.62	30.71	AEG-BEST
College	Water Heating	Water Heater	65 gallons	New	1,864.73	13	\$3,537.01	56%	at stock turnover	\$0.22	50.30	57.24	7th Power Plan
College	Interior Lighting	Screw-in	lamps	New	48.26	8	\$3.95	100%	at stock turnover	\$0.00	2.57	2.84	7th Power Plan
College	Interior Lighting	Linear Lighting	lamps	New	83.68	17	\$52.83	100%	at stock turnover	\$0.05	73.31	79.80	7th Power Plan
College	Interior Lighting	High-Bay Fixtures	lamps	New	513.14	15	\$123.86	100%	at stock turnover	\$0.03	46.56	52.50	Annual Energy Outlook, 2015
College	Exterior Lighting	Screw-in	lamps	New	58.79	8	\$3.95	100%	at stock turnover	\$0.00	0.31	0.35	7th Power Plan
College	Exterior Lighting	Linear Lighting	lamps	New	106.29	17	\$52.83	100%	at stock turnover	\$0.04	25.11	27.33	7th Power Plan
College	Exterior Lighting	Area Lighting	lamps	New	718.82	15	\$44.55	100%	at stock turnover	\$0.01	10.55	11.64	Annual Energy Outlook, 2015
College	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	New	1,507.00	11	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
College	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	New	605.00	15	\$0.00	14%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
College	Refrigeration	Glass Door Display	1 unit	New	767.00	15	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
College	Refrigeration	Open Display Case	1 unit	New	1,438.00	10	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
College	Refrigeration	Icemaker	1 unit	New	388.40	9	\$1,056.09	45%	at stock turnover	\$0.43	0.13	0.15	ENERGY STAR

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
College	Refrigeration	Vending Machine	1 unit	New	69.80	10	\$42.81	45%	at stock turnover	\$0.08	0.05	0.05	EIA 2011-2012 Ref. Case
College	Food Preparation	Oven	1 unit	New	13,015.66	10	\$1,067.99	66%	at stock turnover	\$0.01	2.41	2.69	RTF Workbook
College	Food Preparation	Fryer	1 unit	New	2,482.63	10	\$782.02	76%	at stock turnover	\$0.04	0.63	0.72	RTF Workbook
College	Food Preparation	Dishwasher	1 unit	New	1,161.85	15	\$564.57	43%	at stock turnover	\$0.05	0.31	0.34	ENERGY STAR
College	Food Preparation	Hot Food Container	1 unit	New	691.28	20	\$490.95	43%	at stock turnover	\$0.07	0.53	0.59	RTF Workbook
College	Food Preparation	Steamer	1 unit	New	57,034.43	9	\$837.45	43%	at stock turnover	\$0.00	5.36	6.03	RTF Workbook
College	Office Equipment	Desktop Computer	1 unit	New	106.43	5	\$0.01	100%	at stock turnover	\$0.00	5.16	6.31	7th Power Plan
College	Office Equipment	Laptop	1 unit	New	31.76	4	\$0.01	100%	at stock turnover	\$0.00	0.20	0.24	7th Power Plan
College	Office Equipment	Monitor	1 unit	New	26.41	5	\$0.01	100%	at stock turnover	\$0.00	0.32	0.40	7th Power Plan
College	Office Equipment	Server	1 unit	New	63.85	4	\$0.01	100%	at stock turnover	\$0.00	0.59	0.70	AEG Research
College	Office Equipment	Printer/Copier/Fax	1 unit	New	192.16	6	\$0.01	100%	at stock turnover	\$0.00	0.18	0.21	ENERGY STAR
College	Office Equipment	POS Terminal	1 unit	New	106.43	5	\$0.01	40%	at stock turnover	\$0.00	0.34	0.40	7th Power Plan
College	Miscellaneous	Non-HVAC Motors	1 unit	New	0.00	15	\$0.00	90%	at stock turnover	\$0.00	0.00	0.00	N/A
College	Miscellaneous	Pool Pump	1 unit	New	1,234.20	10	\$246.30	0%	at stock turnover	\$0.03	1.01	1.12	Southern California Edison
College	Miscellaneous	Pool Heater	1 unit	New	13,164.62	15	\$3,546.07	0%	at stock turnover	\$0.03	0.71	0.78	AEG Research
College	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
School	Cooling	Air-Cooled Chiller	1 kBTU/hr	Existing	17.77	20	\$26.36	15%	at stock turnover	\$0.14	99.31	115.10	Annual Energy Outlook, 2015
School	Cooling	Water-Cooled Chiller	1 kBTU/hr	Existing	0.00	25	\$12.65	10%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
School	Cooling	RTU	1 kBTU/hr	Existing	1.70	15	\$6.75	50%	at stock turnover	\$0.43	18.54	22.07	Annual Energy Outlook, 2015

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
School	Cooling	Room AC	1 kBTU/hr	Existing	6.06	15	\$23.62	3%	at stock turnover	\$0.43	4.30	5.11	Annual Energy Outlook, 2015
School	Cooling	Evaporative AC	11 per TR	Existing	0.00	15	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	New Buildings Institute Study, 2006
School	Cooling	Air-Source Heat Pump	1 kBTU/hr	Existing	3.27	15	\$21.65	7%	at stock turnover	\$0.51	4.42	5.03	Annual Energy Outlook, 2015
School	Heating	Air-Source Heat Pump	1 kBTU/hr	Existing	1.36	15	\$21.65	7%	at stock turnover	\$0.51	1.84	2.10	Annual Energy Outlook, 2015
School	Cooling	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	7%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
School	Heating	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	7%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
School	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
School	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	40%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
School	Ventilation	Ventilation	1000 CFM	Existing	712.14	20	\$1,219.71	100%	at stock turnover	\$0.16	85.24	95.92	AEG-BEST
School	Water Heating	Water Heater	65 gallons	Existing	1,813.20	13	\$3,537.01	56%	at stock turnover	\$0.23	187.99	221.74	7th Power Plan
School	Interior Lighting	Screw-in	lamps	Existing	35.01	8	\$3.95	100%	at stock turnover	\$0.00	25.55	33.71	7th Power Plan
School	Interior Lighting	Linear Lighting	lamps	Existing	64.16	17	\$52.83	100%	at stock turnover	\$0.06	466.26	514.37	7th Power Plan
School	Interior Lighting	High-Bay Fixtures	lamps	Existing	386.95	15	\$123.86	100%	at stock turnover	\$0.03	221.13	254.70	Annual Energy Outlook, 2015
School	Exterior Lighting	Screw-in	lamps	Existing	60.17	8	\$3.95	100%	at stock turnover	\$0.00	0.88	1.17	7th Power Plan
School	Exterior Lighting	Linear Lighting	lamps	Existing	108.79	17	\$52.83	100%	at stock turnover	\$0.03	202.48	223.38	7th Power Plan
School	Exterior Lighting	Area Lighting	lamps	Existing	658.43	15	\$44.55	100%	at stock turnover	\$0.01	33.76	37.80	Annual Energy Outlook, 2015
School	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	Existing	1,507.00	11	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
School	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	Existing	605.00	15	\$0.00	14%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
School	Refrigeration	Glass Door Display	1 unit	Existing	767.00	15	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
School	Refrigeration	Open Display Case	1 unit	Existing	1,438.00	10	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
School	Refrigeration	Icemaker	1 unit	Existing	388.40	9	\$1,056.09	45%	at stock turnover	\$0.43	1.60	1.90	ENERGY STAR
School	Refrigeration	Vending Machine	1 unit	Existing	69.80	10	\$42.81	45%	at stock turnover	\$0.08	1.10	1.29	EIA 2011-2012 Ref. Case
School	Food Preparation	Oven	1 unit	Existing	13,015.66	10	\$1,067.99	66%	at stock turnover	\$0.01	18.34	21.40	RTF Workbook
School	Food Preparation	Fryer	1 unit	Existing	2,482.63	10	\$782.02	76%	at stock turnover	\$0.04	7.65	8.97	RTF Workbook
School	Food Preparation	Dishwasher	1 unit	Existing	1,161.85	15	\$564.57	43%	at stock turnover	\$0.05	2.97	3.36	ENERGY STAR
School	Food Preparation	Hot Food Container	1 unit	Existing	691.28	20	\$490.95	43%	at stock turnover	\$0.07	3.44	3.90	RTF Workbook
School	Food Preparation	Steamer	1 unit	Existing	57,034.43	9	\$837.45	43%	at stock turnover	\$0.00	42.31	49.43	RTF Workbook
School	Office Equipment	Desktop Computer	1 unit	Existing	106.43	5	\$0.01	100%	at stock turnover	\$0.00	39.60	51.46	7th Power Plan
School	Office Equipment	Laptop	1 unit	Existing	31.76	4	\$0.01	100%	at stock turnover	\$0.00	1.94	2.40	7th Power Plan
School	Office Equipment	Monitor	1 unit	Existing	26.41	5	\$0.01	100%	at stock turnover	\$0.00	2.48	3.22	7th Power Plan
School	Office Equipment	Server	1 unit	Existing	63.85	4	\$0.01	100%	at stock turnover	\$0.00	8.83	10.82	AEG Research
School	Office Equipment	Printer/Copier/Fax	1 unit	Existing	192.16	6	\$0.01	100%	at stock turnover	\$0.00	0.91	1.09	ENERGY STAR
School	Office Equipment	POS Terminal	1 unit	Existing	106.43	5	\$0.01	40%	at stock turnover	\$0.00	0.67	0.81	7th Power Plan
School	Miscellaneous	Non-HVAC Motors	1 unit	Existing	0.00	15	\$0.00	90%	at stock turnover	\$0.00	0.00	0.00	N/A
School	Miscellaneous	Pool Pump	1 unit	Existing	1,234.20	10	\$246.30	0%	at stock turnover	\$0.03	0.60	0.67	Southern California Edison
School	Miscellaneous	Pool Heater	1 unit	Existing	13,164.62	15	\$3,546.07	0%	at stock turnover	\$0.03	0.09	0.10	AEG Research
School	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
School	Cooling	Air-Cooled Chiller	1 kBTU/hr	New	17.36	20	\$26.36	15%	at stock turnover	\$0.14	70.07	80.10	Annual Energy Outlook, 2015

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
School	Cooling	Water-Cooled Chiller	1 kBTU/hr	New	0.00	25	\$12.65	10%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
School	Cooling	RTU	1 kBTU/hr	New	1.55	15	\$6.75	50%	at stock turnover	\$0.47	9.67	11.16	Annual Energy Outlook, 2015
School	Cooling	Room AC	1 kBTU/hr	New	5.38	15	\$23.62	3%	at stock turnover	\$0.48	2.17	2.51	Annual Energy Outlook, 2015
School	Cooling	Evaporative AC	11 per TR	New	0.00	15	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	New Buildings Institute Study, 2006
School	Cooling	Air-Source Heat Pump	1 kBTU/hr	New	2.99	15	\$21.65	7%	at stock turnover	\$0.55	2.43	2.70	Annual Energy Outlook, 2015
School	Heating	Air-Source Heat Pump	1 kBTU/hr	New	1.28	15	\$21.65	7%	at stock turnover	\$0.55	1.04	1.16	Annual Energy Outlook, 2015
School	Cooling	Geothermal Heat Pump	1 kBTU/hr	New	7.25	25	\$26.36	7%	at stock turnover	\$0.20	3.33	3.74	Annual Energy Outlook, 2015
School	Heating	Geothermal Heat Pump	1 kBTU/hr	New	5.04	25	\$26.36	7%	at stock turnover	\$0.20	2.31	2.60	Annual Energy Outlook, 2015
School	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
School	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	40%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
School	Ventilation	Ventilation	1000 CFM	New	720.53	20	\$1,219.71	100%	at stock turnover	\$0.16	63.68	70.78	AEG-BEST
School	Water Heating	Water Heater	65 gallons	New	1,864.73	13	\$3,537.01	56%	at stock turnover	\$0.22	101.41	115.35	7th Power Plan
School	Interior Lighting	Screw-in	lamps	New	34.93	8	\$3.95	100%	at stock turnover	\$0.00	13.14	14.51	7th Power Plan
School	Interior Lighting	Linear Lighting	lamps	New	64.16	17	\$52.83	100%	at stock turnover	\$0.06	232.28	252.88	7th Power Plan
School	Interior Lighting	High-Bay Fixtures	lamps	New	384.45	15	\$123.86	100%	at stock turnover	\$0.03	125.25	141.17	Annual Energy Outlook, 2015
School	Exterior Lighting	Screw-in	lamps	New	60.04	8	\$3.95	100%	at stock turnover	\$0.00	0.45	0.50	7th Power Plan
School	Exterior Lighting	Linear Lighting	lamps	New	108.79	17	\$52.83	100%	at stock turnover	\$0.03	100.87	109.82	7th Power Plan
School	Exterior Lighting	Area Lighting	lamps	New	658.43	15	\$44.55	100%	at stock turnover	\$0.01	19.43	21.44	Annual Energy Outlook, 2015
School	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	New	1,507.00	11	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
School	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	New	605.00	15	\$0.00	14%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
School	Refrigeration	Glass Door Display	1 unit	New	767.00	15	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
School	Refrigeration	Open Display Case	1 unit	New	1,438.00	10	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
School	Refrigeration	Icemaker	1 unit	New	388.40	9	\$1,056.09	45%	at stock turnover	\$0.43	1.44	1.64	ENERGY STAR
School	Refrigeration	Vending Machine	1 unit	New	69.80	10	\$42.81	45%	at stock turnover	\$0.08	0.53	0.60	EIA 2011-2012 Ref. Case
School	Food Preparation	Oven	1 unit	New	13,015.66	10	\$1,067.99	66%	at stock turnover	\$0.01	12.45	14.01	RTF Workbook
School	Food Preparation	Fryer	1 unit	New	2,482.63	10	\$782.02	76%	at stock turnover	\$0.04	3.89	4.39	RTF Workbook
School	Food Preparation	Dishwasher	1 unit	New	1,161.85	15	\$564.57	43%	at stock turnover	\$0.05	1.31	1.46	ENERGY STAR
School	Food Preparation	Hot Food Container	1 unit	New	691.28	20	\$490.95	43%	at stock turnover	\$0.07	2.21	2.47	RTF Workbook
School	Food Preparation	Steamer	1 unit	New	57,034.43	9	\$837.45	43%	at stock turnover	\$0.00	23.16	26.15	RTF Workbook
School	Office Equipment	Desktop Computer	1 unit	New	106.43	5	\$0.01	100%	at stock turnover	\$0.00	14.75	18.03	7th Power Plan
School	Office Equipment	Laptop	1 unit	New	31.76	4	\$0.01	100%	at stock turnover	\$0.00	0.78	0.92	7th Power Plan
School	Office Equipment	Monitor	1 unit	New	26.41	5	\$0.01	100%	at stock turnover	\$0.00	0.92	1.13	7th Power Plan
School	Office Equipment	Server	1 unit	New	63.85	4	\$0.01	100%	at stock turnover	\$0.00	3.40	4.01	AEG Research
School	Office Equipment	Printer/Copier/Fax	1 unit	New	192.16	6	\$0.01	100%	at stock turnover	\$0.00	0.42	0.48	ENERGY STAR
School	Office Equipment	POS Terminal	1 unit	New	106.43	5	\$0.01	40%	at stock turnover	\$0.00	0.28	0.33	7th Power Plan
School	Miscellaneous	Non-HVAC Motors	1 unit	New	0.00	15	\$0.00	90%	at stock turnover	\$0.00	0.00	0.00	N/A
School	Miscellaneous	Pool Pump	1 unit	New	1,234.20	10	\$246.30	0%	at stock turnover	\$0.03	0.35	0.39	Southern California Edison
School	Miscellaneous	Pool Heater	1 unit	New	13,164.62	15	\$3,546.07	0%	at stock turnover	\$0.03	0.05	0.06	AEG Research

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
School	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Lodging	Cooling	Air-Cooled Chiller	1 kBTU/hr	Existing	9.11	20	\$26.36	15%	at stock turnover	\$0.27	3.84	4.45	Annual Energy Outlook, 2015
Lodging	Cooling	Water-Cooled Chiller	1 kBTU/hr	Existing	15.24	25	\$12.65	10%	at stock turnover	\$0.08	23.32	26.99	Annual Energy Outlook, 2015
Lodging	Cooling	RTU	1 kBTU/hr	Existing	3.94	15	\$6.75	50%	at stock turnover	\$0.19	15.53	18.44	Annual Energy Outlook, 2015
Lodging	Cooling	Room AC	1 kBTU/hr	Existing	13.77	15	\$23.62	3%	at stock turnover	\$0.19	134.17	159.31	Annual Energy Outlook, 2015
Lodging	Cooling	Evaporative AC	11 per TR	Existing	0.00	15	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	New Buildings Institute Study, 2006
Lodging	Cooling	Air-Source Heat Pump	1 kBTU/hr	Existing	7.67	15	\$21.65	7%	at stock turnover	\$0.26	24.60	27.93	Annual Energy Outlook, 2015
Lodging	Heating	Air-Source Heat Pump	1 kBTU/hr	Existing	1.32	15	\$21.65	7%	at stock turnover	\$0.26	4.22	4.79	Annual Energy Outlook, 2015
Lodging	Cooling	Geothermal Heat Pump	1 kBTU/hr	Existing	27.97	25	\$26.36	7%	at stock turnover	\$0.08	12.84	14.43	Annual Energy Outlook, 2015
Lodging	Heating	Geothermal Heat Pump	1 kBTU/hr	Existing	3.79	25	\$26.36	7%	at stock turnover	\$0.08	1.74	1.96	Annual Energy Outlook, 2015
Lodging	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Lodging	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	40%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Lodging	Ventilation	Ventilation	1000 CFM	Existing	1,455.99	20	\$1,219.71	100%	at stock turnover	\$0.08	84.10	94.52	AEG-BEST
Lodging	Water Heating	Water Heater	65 gallons	Existing	1,790.77	13	\$3,537.01	56%	at stock turnover	\$0.23	825.74	971.64	7th Power Plan
Lodging	Interior Lighting	Screw-in	lamps	Existing	40.82	8	\$3.95	100%	at stock turnover	\$0.00	282.10	366.36	7th Power Plan
Lodging	Interior Lighting	Linear Lighting	lamps	Existing	70.07	17	\$52.83	100%	at stock turnover	\$0.05	184.36	203.30	7th Power Plan
Lodging	Interior Lighting	High-Bay Fixtures	lamps	Existing	512.41	15	\$123.86	100%	at stock turnover	\$0.03	606.04	696.66	Annual Energy Outlook, 2015
Lodging	Exterior Lighting	Screw-in	lamps	Existing	58.90	8	\$3.95	100%	at stock turnover	\$0.00	11.11	14.43	7th Power Plan
Lodging	Exterior Lighting	Linear Lighting	lamps	Existing	110.93	17	\$52.83	100%	at stock turnover	\$0.03	10.35	11.41	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Lodging	Exterior Lighting	Area Lighting	lamps	Existing	994.17	15	\$44.55	100%	at stock turnover	\$0.00	734.84	822.17	Annual Energy Outlook, 2015
Lodging	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	Existing	1,507.00	11	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Lodging	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	Existing	605.00	15	\$0.00	14%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Lodging	Refrigeration	Glass Door Display	1 unit	Existing	767.00	15	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Lodging	Refrigeration	Open Display Case	1 unit	Existing	1,438.00	10	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Lodging	Refrigeration	Icemaker	1 unit	Existing	388.40	9	\$1,056.09	45%	at stock turnover	\$0.43	4.75	5.61	ENERGY STAR
Lodging	Refrigeration	Vending Machine	1 unit	Existing	69.80	10	\$42.81	45%	at stock turnover	\$0.08	2.31	2.68	EIA 2011-2012 Ref. Case
Lodging	Food Preparation	Oven	1 unit	Existing	13,015.66	10	\$1,067.99	66%	at stock turnover	\$0.01	6.26	7.22	RTF Workbook
Lodging	Food Preparation	Fryer	1 unit	Existing	2,482.63	10	\$782.02	76%	at stock turnover	\$0.04	10.13	11.85	RTF Workbook
Lodging	Food Preparation	Dishwasher	1 unit	Existing	1,161.85	15	\$564.57	43%	at stock turnover	\$0.05	8.47	9.55	ENERGY STAR
Lodging	Food Preparation	Hot Food Container	1 unit	Existing	691.28	20	\$490.95	43%	at stock turnover	\$0.07	7.91	8.92	RTF Workbook
Lodging	Food Preparation	Steamer	1 unit	Existing	57,034.43	9	\$837.45	43%	at stock turnover	\$0.00	99.81	115.89	RTF Workbook
Lodging	Office Equipment	Desktop Computer	1 unit	Existing	106.43	5	\$0.01	100%	at stock turnover	\$0.00	17.84	23.15	7th Power Plan
Lodging	Office Equipment	Laptop	1 unit	Existing	31.76	4	\$0.01	100%	at stock turnover	\$0.00	2.21	2.72	7th Power Plan
Lodging	Office Equipment	Monitor	1 unit	Existing	26.41	5	\$0.01	100%	at stock turnover	\$0.00	1.12	1.45	7th Power Plan
Lodging	Office Equipment	Server	1 unit	Existing	63.85	4	\$0.01	100%	at stock turnover	\$0.00	10.11	12.37	AEG Research
Lodging	Office Equipment	Printer/Copier/Fax	1 unit	Existing	192.16	6	\$0.01	100%	at stock turnover	\$0.00	0.42	0.50	ENERGY STAR
Lodging	Office Equipment	POS Terminal	1 unit	Existing	106.43	5	\$0.01	40%	at stock turnover	\$0.00	2.41	2.94	7th Power Plan
Lodging	Miscellaneous	Non-HVAC Motors	1 unit	Existing	0.00	15	\$0.00	90%	at stock turnover	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Lodging	Miscellaneous	Pool Pump	1 unit	Existing	1,234.20	10	\$246.30	0%	at stock turnover	\$0.03	4.84	5.43	Southern California Edison
Lodging	Miscellaneous	Pool Heater	1 unit	Existing	13,164.62	15	\$3,546.07	0%	at stock turnover	\$0.03	2.97	3.31	AEG Research
Lodging	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Lodging	Cooling	Air-Cooled Chiller	1 kBTU/hr	New	8.22	20	\$26.36	15%	at stock turnover	\$0.30	2.12	2.42	Annual Energy Outlook, 2015
Lodging	Cooling	Water-Cooled Chiller	1 kBTU/hr	New	13.87	25	\$12.65	10%	at stock turnover	\$0.08	11.13	12.86	Annual Energy Outlook, 2015
Lodging	Cooling	RTU	1 kBTU/hr	New	4.02	15	\$6.75	50%	at stock turnover	\$0.18	7.67	8.84	Annual Energy Outlook, 2015
Lodging	Cooling	Room AC	1 kBTU/hr	New	12.05	15	\$23.62	3%	at stock turnover	\$0.21	56.46	65.11	Annual Energy Outlook, 2015
Lodging	Cooling	Evaporative AC	11 per TR	New	0.00	15	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	New Buildings Institute Study, 2006
Lodging	Cooling	Air-Source Heat Pump	1 kBTU/hr	New	7.83	15	\$21.65	7%	at stock turnover	\$0.26	12.69	14.10	Annual Energy Outlook, 2015
Lodging	Heating	Air-Source Heat Pump	1 kBTU/hr	New	1.14	15	\$21.65	7%	at stock turnover	\$0.26	1.84	2.05	Annual Energy Outlook, 2015
Lodging	Cooling	Geothermal Heat Pump	1 kBTU/hr	New	28.86	25	\$26.36	7%	at stock turnover	\$0.08	6.98	7.84	Annual Energy Outlook, 2015
Lodging	Heating	Geothermal Heat Pump	1 kBTU/hr	New	3.35	25	\$26.36	7%	at stock turnover	\$0.08	0.81	0.91	Annual Energy Outlook, 2015
Lodging	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Lodging	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	40%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Lodging	Ventilation	Ventilation	1000 CFM	New	1,209.90	20	\$1,219.71	100%	at stock turnover	\$0.10	38.47	42.73	AEG-BEST
Lodging	Water Heating	Water Heater	65 gallons	New	1,864.71	13	\$3,537.01	56%	at stock turnover	\$0.22	378.10	429.80	7th Power Plan
Lodging	Interior Lighting	Screw-in	lamps	New	40.77	8	\$3.95	100%	at stock turnover	\$0.00	122.51	134.73	7th Power Plan
Lodging	Interior Lighting	Linear Lighting	lamps	New	70.07	17	\$52.83	100%	at stock turnover	\$0.05	77.48	84.37	7th Power Plan
Lodging	Interior Lighting	High-Bay Fixtures	lamps	New	542.13	15	\$123.86	100%	at stock turnover	\$0.02	307.06	346.21	Annual Energy Outlook, 2015

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Lodging	Exterior Lighting	Screw-in	lamps	New	58.82	8	\$3.95	100%	at stock turnover	\$0.00	4.82	5.31	7th Power Plan
Lodging	Exterior Lighting	Linear Lighting	lamps	New	110.93	17	\$52.83	100%	at stock turnover	\$0.03	4.35	4.73	7th Power Plan
Lodging	Exterior Lighting	Area Lighting	lamps	New	994.17	15	\$44.55	100%	at stock turnover	\$0.00	356.78	393.56	Annual Energy Outlook, 2015
Lodging	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	New	1,507.00	11	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Lodging	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	New	605.00	15	\$0.00	14%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Lodging	Refrigeration	Glass Door Display	1 unit	New	767.00	15	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Lodging	Refrigeration	Open Display Case	1 unit	New	1,438.00	10	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Lodging	Refrigeration	Icemaker	1 unit	New	388.40	9	\$1,056.09	45%	at stock turnover	\$0.43	2.11	2.39	ENERGY STAR
Lodging	Refrigeration	Vending Machine	1 unit	New	69.80	10	\$42.81	45%	at stock turnover	\$0.08	1.50	1.69	EIA 2011-2012 Ref. Case
Lodging	Food Preparation	Oven	1 unit	New	13,015.66	10	\$1,067.99	66%	at stock turnover	\$0.01	3.87	4.32	RTF Workbook
Lodging	Food Preparation	Fryer	1 unit	New	2,482.63	10	\$782.02	76%	at stock turnover	\$0.04	4.31	4.87	RTF Workbook
Lodging	Food Preparation	Dishwasher	1 unit	New	1,161.85	15	\$564.57	43%	at stock turnover	\$0.05	2.66	2.95	ENERGY STAR
Lodging	Food Preparation	Hot Food Container	1 unit	New	691.28	20	\$490.95	43%	at stock turnover	\$0.07	4.54	5.06	RTF Workbook
Lodging	Food Preparation	Steamer	1 unit	New	57,034.43	9	\$837.45	43%	at stock turnover	\$0.00	46.61	52.46	RTF Workbook
Lodging	Office Equipment	Desktop Computer	1 unit	New	106.43	5	\$0.01	100%	at stock turnover	\$0.00	5.64	6.89	7th Power Plan
Lodging	Office Equipment	Laptop	1 unit	New	31.76	4	\$0.01	100%	at stock turnover	\$0.00	0.74	0.88	7th Power Plan
Lodging	Office Equipment	Monitor	1 unit	New	26.41	5	\$0.01	100%	at stock turnover	\$0.00	0.35	0.43	7th Power Plan
Lodging	Office Equipment	Server	1 unit	New	63.85	4	\$0.01	100%	at stock turnover	\$0.00	3.26	3.84	AEG Research
Lodging	Office Equipment	Printer/Copier/Fax	1 unit	New	192.16	6	\$0.01	100%	at stock turnover	\$0.00	0.16	0.18	ENERGY STAR

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Lodging	Office Equipment	POS Terminal	1 unit	New	106.43	5	\$0.01	40%	at stock turnover	\$0.00	0.87	1.01	7th Power Plan
Lodging	Miscellaneous	Non-HVAC Motors	1 unit	New	0.00	15	\$0.00	90%	at stock turnover	\$0.00	0.00	0.00	N/A
Lodging	Miscellaneous	Pool Pump	1 unit	New	1,234.20	10	\$246.30	0%	at stock turnover	\$0.03	2.40	2.64	Southern California Edison
Lodging	Miscellaneous	Pool Heater	1 unit	New	13,164.62	15	\$3,546.07	0%	at stock turnover	\$0.03	1.50	1.64	AEG Research
Lodging	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Warehouse	Cooling	Air-Cooled Chiller	1 kBTU/hr	Existing	0.00	20	\$26.36	15%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Warehouse	Cooling	Water-Cooled Chiller	1 kBTU/hr	Existing	0.00	25	\$12.65	10%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Warehouse	Cooling	RTU	1 kBTU/hr	Existing	3.80	15	\$6.75	50%	at stock turnover	\$0.19	10.21	12.15	Annual Energy Outlook, 2015
Warehouse	Cooling	Room AC	1 kBTU/hr	Existing	13.56	15	\$23.62	3%	at stock turnover	\$0.19	2.39	2.85	Annual Energy Outlook, 2015
Warehouse	Cooling	Evaporative AC	11 per TR	Existing	0.00	15	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	New Buildings Institute Study, 2006
Warehouse	Cooling	Air-Source Heat Pump	1 kBTU/hr	Existing	7.32	15	\$21.65	7%	at stock turnover	\$0.20	2.56	2.90	Annual Energy Outlook, 2015
Warehouse	Heating	Air-Source Heat Pump	1 kBTU/hr	Existing	4.38	15	\$21.65	7%	at stock turnover	\$0.20	1.53	1.74	Annual Energy Outlook, 2015
Warehouse	Cooling	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	7%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Warehouse	Heating	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	7%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Warehouse	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Warehouse	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	40%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Warehouse	Ventilation	Ventilation	1000 CFM	Existing	2,197.89	20	\$1,219.71	100%	at stock turnover	\$0.05	50.94	57.30	AEG-BEST
Warehouse	Water Heating	Water Heater	65 gallons	Existing	1,714.37	13	\$3,537.01	56%	at stock turnover	\$0.24	57.71	68.02	7th Power Plan
Warehouse	Interior Lighting	Screw-in	lamps	Existing	36.25	8	\$3.95	100%	at stock turnover	\$0.00	23.37	30.48	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Warehouse	Interior Lighting	Linear Lighting	lamps	Existing	63.78	17	\$52.83	100%	at stock turnover	\$0.06	118.10	130.27	7th Power Plan
Warehouse	Interior Lighting	High-Bay Fixtures	lamps	Existing	343.80	15	\$123.86	100%	at stock turnover	\$0.04	527.85	605.25	Annual Energy Outlook, 2015
Warehouse	Exterior Lighting	Screw-in	lamps	Existing	63.35	8	\$3.95	100%	at stock turnover	\$0.00	7.15	9.33	7th Power Plan
Warehouse	Exterior Lighting	Linear Lighting	lamps	Existing	118.34	17	\$52.83	100%	at stock turnover	\$0.03	31.92	35.21	7th Power Plan
Warehouse	Exterior Lighting	Area Lighting	lamps	Existing	871.18	15	\$44.55	100%	at stock turnover	\$0.01	160.39	179.55	Annual Energy Outlook, 2015
Warehouse	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	Existing	1,507.00	11	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Warehouse	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	Existing	605.00	15	\$0.00	14%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Warehouse	Refrigeration	Glass Door Display	1 unit	Existing	767.00	15	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Warehouse	Refrigeration	Open Display Case	1 unit	Existing	1,438.00	10	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Warehouse	Refrigeration	Icemaker	1 unit	Existing	388.40	9	\$1,056.09	45%	at stock turnover	\$0.43	2.85	3.34	ENERGY STAR
Warehouse	Refrigeration	Vending Machine	1 unit	Existing	69.80	10	\$42.81	45%	at stock turnover	\$0.08	0.21	0.24	EIA 2011-2012 Ref. Case
Warehouse	Food Preparation	Oven	1 unit	Existing	13,015.66	10	\$1,067.99	66%	at stock turnover	\$0.01	2.16	2.46	RTF Workbook
Warehouse	Food Preparation	Fryer	1 unit	Existing	2,482.63	10	\$782.02	76%	at stock turnover	\$0.04	0.16	0.18	RTF Workbook
Warehouse	Food Preparation	Dishwasher	1 unit	Existing	1,161.85	15	\$564.57	43%	at stock turnover	\$0.05	0.71	0.80	ENERGY STAR
Warehouse	Food Preparation	Hot Food Container	1 unit	Existing	691.28	20	\$490.95	43%	at stock turnover	\$0.07	0.41	0.46	RTF Workbook
Warehouse	Food Preparation	Steamer	1 unit	Existing	57,034.43	9	\$837.45	43%	at stock turnover	\$0.00	4.75	5.44	RTF Workbook
Warehouse	Office Equipment	Desktop Computer	1 unit	Existing	106.43	5	\$0.01	100%	at stock turnover	\$0.00	20.16	26.19	7th Power Plan
Warehouse	Office Equipment	Laptop	1 unit	Existing	31.76	4	\$0.01	100%	at stock turnover	\$0.00	1.99	2.45	7th Power Plan
Warehouse	Office Equipment	Monitor	1 unit	Existing	26.41	5	\$0.01	100%	at stock turnover	\$0.00	1.26	1.64	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Warehouse	Office Equipment	Server	1 unit	Existing	63.85	4	\$0.01	100%	at stock turnover	\$0.00	20.95	25.64	AEG Research
Warehouse	Office Equipment	Printer/Copier/Fax	1 unit	Existing	192.16	6	\$0.01	100%	at stock turnover	\$0.00	0.46	0.56	ENERGY STAR
Warehouse	Office Equipment	POS Terminal	1 unit	Existing	106.43	5	\$0.01	40%	at stock turnover	\$0.00	7.14	8.72	7th Power Plan
Warehouse	Miscellaneous	Non-HVAC Motors	1 unit	Existing	0.00	15	\$0.00	90%	at stock turnover	\$0.00	0.00	0.00	N/A
Warehouse	Miscellaneous	Pool Pump	1 unit	Existing	0.00	10	\$246.30	0%	at stock turnover	\$0.00	0.00	0.00	Southern California Edison
Warehouse	Miscellaneous	Pool Heater	1 unit	Existing	0.00	15	\$3,546.07	0%	at stock turnover	\$0.00	0.00	0.00	AEG Research
Warehouse	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Warehouse	Cooling	Air-Cooled Chiller	1 kBTU/hr	New	0.00	20	\$26.36	15%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Warehouse	Cooling	Water-Cooled Chiller	1 kBTU/hr	New	0.00	25	\$12.65	10%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Warehouse	Cooling	RTU	1 kBTU/hr	New	3.69	15	\$6.75	50%	at stock turnover	\$0.20	5.36	6.19	Annual Energy Outlook, 2015
Warehouse	Cooling	Room AC	1 kBTU/hr	New	11.87	15	\$23.62	3%	at stock turnover	\$0.22	1.13	1.30	Annual Energy Outlook, 2015
Warehouse	Cooling	Evaporative AC	11 per TR	New	0.00	15	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	New Buildings Institute Study, 2006
Warehouse	Cooling	Air-Source Heat Pump	1 kBTU/hr	New	6.32	15	\$21.65	7%	at stock turnover	\$0.22	1.25	1.39	Annual Energy Outlook, 2015
Warehouse	Heating	Air-Source Heat Pump	1 kBTU/hr	New	4.20	15	\$21.65	7%	at stock turnover	\$0.22	0.83	0.93	Annual Energy Outlook, 2015
Warehouse	Cooling	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	7%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Warehouse	Heating	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	7%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Warehouse	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Warehouse	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	40%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Warehouse	Ventilation	Ventilation	1000 CFM	New	1,902.21	20	\$1,219.71	100%	at stock turnover	\$0.06	27.15	30.17	AEG-BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Warehouse	Water Heating	Water Heater	65 gallons	New	1,864.71	13	\$3,537.01	56%	at stock turnover	\$0.22	31.12	35.39	7th Power Plan
Warehouse	Interior Lighting	Screw-in	lamps	New	36.30	8	\$3.95	100%	at stock turnover	\$0.00	11.40	12.56	7th Power Plan
Warehouse	Interior Lighting	Linear Lighting	lamps	New	63.78	17	\$52.83	100%	at stock turnover	\$0.06	55.72	60.67	7th Power Plan
Warehouse	Interior Lighting	High-Bay Fixtures	lamps	New	343.51	15	\$123.86	100%	at stock turnover	\$0.04	284.73	319.96	Annual Energy Outlook, 2015
Warehouse	Exterior Lighting	Screw-in	lamps	New	63.43	8	\$3.95	100%	at stock turnover	\$0.00	3.49	3.84	7th Power Plan
Warehouse	Exterior Lighting	Linear Lighting	lamps	New	118.34	17	\$52.83	100%	at stock turnover	\$0.03	15.06	16.40	7th Power Plan
Warehouse	Exterior Lighting	Area Lighting	lamps	New	871.18	15	\$44.55	100%	at stock turnover	\$0.01	87.43	96.46	Annual Energy Outlook, 2015
Warehouse	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	New	1,507.00	11	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Warehouse	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	New	605.00	15	\$0.00	14%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Warehouse	Refrigeration	Glass Door Display	1 unit	New	767.00	15	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Warehouse	Refrigeration	Open Display Case	1 unit	New	1,438.00	10	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Warehouse	Refrigeration	Icemaker	1 unit	New	388.40	9	\$1,056.09	45%	at stock turnover	\$0.43	1.33	1.50	ENERGY STAR
Warehouse	Refrigeration	Vending Machine	1 unit	New	69.80	10	\$42.81	45%	at stock turnover	\$0.08	0.07	0.08	EIA 2011-2012 Ref. Case
Warehouse	Food Preparation	Oven	1 unit	New	13,015.66	10	\$1,067.99	66%	at stock turnover	\$0.01	1.11	1.23	RTF Workbook
Warehouse	Food Preparation	Fryer	1 unit	New	2,482.63	10	\$782.02	76%	at stock turnover	\$0.04	0.08	0.08	RTF Workbook
Warehouse	Food Preparation	Dishwasher	1 unit	New	1,161.85	15	\$564.57	43%	at stock turnover	\$0.05	0.15	0.16	ENERGY STAR
Warehouse	Food Preparation	Hot Food Container	1 unit	New	691.28	20	\$490.95	43%	at stock turnover	\$0.07	0.26	0.29	RTF Workbook
Warehouse	Food Preparation	Steamer	1 unit	New	57,034.43	9	\$837.45	43%	at stock turnover	\$0.00	2.49	2.76	RTF Workbook
Warehouse	Office Equipment	Desktop Computer	1 unit	New	106.43	5	\$0.01	100%	at stock turnover	\$0.00	7.13	8.71	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Warehouse	Office Equipment	Laptop	1 unit	New	31.76	4	\$0.01	100%	at stock turnover	\$0.00	0.75	0.89	7th Power Plan
Warehouse	Office Equipment	Monitor	1 unit	New	26.41	5	\$0.01	100%	at stock turnover	\$0.00	0.45	0.55	7th Power Plan
Warehouse	Office Equipment	Server	1 unit	New	63.85	4	\$0.01	100%	at stock turnover	\$0.00	7.61	8.95	AEG Research
Warehouse	Office Equipment	Printer/Copier/Fax	1 unit	New	192.16	6	\$0.01	100%	at stock turnover	\$0.00	0.20	0.23	ENERGY STAR
Warehouse	Office Equipment	POS Terminal	1 unit	New	106.43	5	\$0.01	40%	at stock turnover	\$0.00	2.90	3.39	7th Power Plan
Warehouse	Miscellaneous	Non-HVAC Motors	1 unit	New	0.00	15	\$0.00	90%	at stock turnover	\$0.00	0.00	0.00	N/A
Warehouse	Miscellaneous	Pool Pump	1 unit	New	0.00	10	\$246.30	0%	at stock turnover	\$0.00	0.00	0.00	Southern California Edison
Warehouse	Miscellaneous	Pool Heater	1 unit	New	0.00	15	\$3,546.07	0%	at stock turnover	\$0.00	0.00	0.00	AEG Research
Warehouse	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Warehouse, Controlled Atm.	Cooling	Air-Cooled Chiller	1 kBTU/hr	Existing	21.00	20	\$26.36	15%	at stock turnover	\$0.12	4.11	4.76	Annual Energy Outlook, 2015
Warehouse, Controlled Atm.	Cooling	Water-Cooled Chiller	1 kBTU/hr	Existing	28.68	25	\$12.65	10%	at stock turnover	\$0.04	0.62	0.72	Annual Energy Outlook, 2015
Warehouse, Controlled Atm.	Cooling	RTU	1 kBTU/hr	Existing	3.30	15	\$6.75	50%	at stock turnover	\$0.22	1.01	1.20	Annual Energy Outlook, 2015
Warehouse, Controlled Atm.	Cooling	Room AC	1 kBTU/hr	Existing	11.78	15	\$23.62	3%	at stock turnover	\$0.22	0.22	0.26	Annual Energy Outlook, 2015
Warehouse, Controlled Atm.	Cooling	Evaporative AC	11 per TR	Existing	0.00	15	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	New Buildings Institute Study, 2006
Warehouse, Controlled Atm.	Cooling	Air-Source Heat Pump	1 kBTU/hr	Existing	6.35	15	\$21.65	7%	at stock turnover	\$0.24	0.13	0.15	Annual Energy Outlook, 2015
Warehouse, Controlled Atm.	Heating	Air-Source Heat Pump	1 kBTU/hr	Existing	3.69	15	\$21.65	7%	at stock turnover	\$0.24	0.08	0.09	Annual Energy Outlook, 2015
Warehouse, Controlled Atm.	Cooling	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	7%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Warehouse, Controlled Atm.	Heating	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	7%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Warehouse, Controlled Atm.	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Warehouse, Controlled Atm.	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	40%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Warehouse, Controlled Atm.	Ventilation	Ventilation	1000 CFM	Existing	4,632.54	20	\$1,219.71	100%	at stock turnover	\$0.03	9.49	10.68	AEG-BEST
Warehouse, Controlled Atm.	Water Heating	Water Heater	65 gallons	Existing	1,714.37	13	\$3,537.01	56%	at stock turnover	\$0.24	6.82	8.04	7th Power Plan
Warehouse, Controlled Atm.	Interior Lighting	Screw-in	lamps	Existing	36.25	8	\$3.95	100%	at stock turnover	\$0.00	2.07	2.69	7th Power Plan
Warehouse, Controlled Atm.	Interior Lighting	Linear Lighting	lamps	Existing	63.78	17	\$52.83	100%	at stock turnover	\$0.06	10.44	11.52	7th Power Plan
Warehouse, Controlled Atm.	Interior Lighting	High-Bay Fixtures	lamps	Existing	343.80	15	\$123.86	100%	at stock turnover	\$0.04	46.67	53.51	Annual Energy Outlook, 2015
Warehouse, Controlled Atm.	Exterior Lighting	Screw-in	lamps	Existing	63.35	8	\$3.95	100%	at stock turnover	\$0.00	0.63	0.82	7th Power Plan
Warehouse, Controlled Atm.	Exterior Lighting	Linear Lighting	lamps	Existing	118.34	17	\$52.83	100%	at stock turnover	\$0.03	2.82	3.11	7th Power Plan
Warehouse, Controlled Atm.	Exterior Lighting	Area Lighting	lamps	Existing	871.18	15	\$44.55	100%	at stock turnover	\$0.01	14.18	15.87	Annual Energy Outlook, 2015
Warehouse, Controlled Atm.	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	Existing	1,507.00	11	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Warehouse, Controlled Atm.	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	Existing	605.00	15	\$0.00	14%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Warehouse, Controlled Atm.	Refrigeration	Glass Door Display	1 unit	Existing	767.00	15	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Warehouse, Controlled Atm.	Refrigeration	Open Display Case	1 unit	Existing	1,438.00	10	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Warehouse, Controlled Atm.	Refrigeration	Icemaker	1 unit	Existing	388.40	9	\$1,056.09	45%	at stock turnover	\$0.43	6.78	8.04	ENERGY STAR
Warehouse, Controlled Atm.	Refrigeration	Vending Machine	1 unit	Existing	69.80	10	\$42.81	45%	at stock turnover	\$0.08	0.40	0.47	EIA 2011-2012 Ref. Case
Warehouse, Controlled Atm.	Food Preparation	Oven	1 unit	Existing	13,015.66	10	\$1,067.99	66%	at stock turnover	\$0.01	0.83	0.97	RTF Workbook
Warehouse, Controlled Atm.	Food Preparation	Fryer	1 unit	Existing	2,482.63	10	\$782.02	76%	at stock turnover	\$0.04	0.28	0.33	RTF Workbook
Warehouse, Controlled Atm.	Food Preparation	Dishwasher	1 unit	Existing	1,161.85	15	\$564.57	43%	at stock turnover	\$0.05	0.14	0.15	ENERGY STAR
Warehouse, Controlled Atm.	Food Preparation	Hot Food Container	1 unit	Existing	691.28	20	\$490.95	43%	at stock turnover	\$0.07	0.15	0.16	RTF Workbook

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Warehouse, Controlled Atm.	Food Preparation	Steamer	1 unit	Existing	57,034.43	9	\$837.45	43%	at stock turnover	\$0.00	1.80	2.10	RTF Workbook
Warehouse, Controlled Atm.	Office Equipment	Desktop Computer	1 unit	Existing	106.43	5	\$0.01	100%	at stock turnover	\$0.00	0.90	1.17	7th Power Plan
Warehouse, Controlled Atm.	Office Equipment	Laptop	1 unit	Existing	31.76	4	\$0.01	100%	at stock turnover	\$0.00	0.09	0.11	7th Power Plan
Warehouse, Controlled Atm.	Office Equipment	Monitor	1 unit	Existing	26.41	5	\$0.01	100%	at stock turnover	\$0.00	0.06	0.07	7th Power Plan
Warehouse, Controlled Atm.	Office Equipment	Server	1 unit	Existing	63.85	4	\$0.01	100%	at stock turnover	\$0.00	0.94	1.15	AEG Research
Warehouse, Controlled Atm.	Office Equipment	Printer/Copier/Fax	1 unit	Existing	192.16	6	\$0.01	100%	at stock turnover	\$0.00	0.02	0.02	ENERGY STAR
Warehouse, Controlled Atm.	Office Equipment	POS Terminal	1 unit	Existing	106.43	5	\$0.01	40%	at stock turnover	\$0.00	0.32	0.39	7th Power Plan
Warehouse, Controlled Atm.	Miscellaneous	Non-HVAC Motors	1 unit	Existing	0.00	15	\$0.00	90%	at stock turnover	\$0.00	0.00	0.00	N/A
Warehouse, Controlled Atm.	Miscellaneous	Pool Pump	1 unit	Existing	0.00	10	\$246.30	0%	at stock turnover	\$0.00	0.00	0.00	Southern California Edison
Warehouse, Controlled Atm.	Miscellaneous	Pool Heater	1 unit	Existing	0.00	15	\$3,546.07	0%	at stock turnover	\$0.00	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Warehouse, Controlled Atm.	Cooling	Air-Cooled Chiller	1 kBTU/hr	New	18.07	20	\$26.36	15%	at stock turnover	\$0.14	2.42	2.77	Annual Energy Outlook, 2015
Warehouse, Controlled Atm.	Cooling	Water-Cooled Chiller	1 kBTU/hr	New	24.96	25	\$12.65	10%	at stock turnover	\$0.05	0.32	0.37	Annual Energy Outlook, 2015
Warehouse, Controlled Atm.	Cooling	RTU	1 kBTU/hr	New	3.21	15	\$6.75	50%	at stock turnover	\$0.23	0.53	0.61	Annual Energy Outlook, 2015
Warehouse, Controlled Atm.	Cooling	Room AC	1 kBTU/hr	New	10.31	15	\$23.62	3%	at stock turnover	\$0.25	0.10	0.12	Annual Energy Outlook, 2015
Warehouse, Controlled Atm.	Cooling	Evaporative AC	11 per TR	New	0.00	15	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	New Buildings Institute Study, 2006
Warehouse, Controlled Atm.	Cooling	Air-Source Heat Pump	1 kBTU/hr	New	5.49	15	\$21.65	7%	at stock turnover	\$0.26	0.07	0.07	Annual Energy Outlook, 2015
Warehouse, Controlled Atm.	Heating	Air-Source Heat Pump	1 kBTU/hr	New	3.54	15	\$21.65	7%	at stock turnover	\$0.26	0.04	0.05	Annual Energy Outlook, 2015
Warehouse, Controlled Atm.	Cooling	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	7%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Warehouse, Controlled Atm.	Heating	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	7%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Warehouse, Controlled Atm.	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Warehouse, Controlled Atm.	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	40%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Warehouse, Controlled Atm.	Ventilation	Ventilation	1000 CFM	New	4,009.34	20	\$1,219.71	100%	at stock turnover	\$0.03	5.06	5.62	AEG-BEST
Warehouse, Controlled Atm.	Water Heating	Water Heater	65 gallons	New	1,864.71	13	\$3,537.01	56%	at stock turnover	\$0.22	3.68	4.18	7th Power Plan
Warehouse, Controlled Atm.	Interior Lighting	Screw-in	lamps	New	36.30	8	\$3.95	100%	at stock turnover	\$0.00	1.01	1.11	7th Power Plan
Warehouse, Controlled Atm.	Interior Lighting	Linear Lighting	lamps	New	63.78	17	\$52.83	100%	at stock turnover	\$0.06	4.93	5.36	7th Power Plan
Warehouse, Controlled Atm.	Interior Lighting	High-Bay Fixtures	lamps	New	343.51	15	\$123.86	100%	at stock turnover	\$0.04	25.17	28.29	Annual Energy Outlook, 2015
Warehouse, Controlled Atm.	Exterior Lighting	Screw-in	lamps	New	63.43	8	\$3.95	100%	at stock turnover	\$0.00	0.31	0.34	7th Power Plan
Warehouse, Controlled Atm.	Exterior Lighting	Linear Lighting	lamps	New	118.34	17	\$52.83	100%	at stock turnover	\$0.03	1.33	1.45	7th Power Plan
Warehouse, Controlled Atm.	Exterior Lighting	Area Lighting	lamps	New	871.18	15	\$44.55	100%	at stock turnover	\$0.01	7.73	8.53	Annual Energy Outlook, 2015
Warehouse, Controlled Atm.	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	New	1,507.00	11	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Warehouse, Controlled Atm.	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	New	605.00	15	\$0.00	14%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Warehouse, Controlled Atm.	Refrigeration	Glass Door Display	1 unit	New	767.00	15	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Warehouse, Controlled Atm.	Refrigeration	Open Display Case	1 unit	New	1,438.00	10	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Warehouse, Controlled Atm.	Refrigeration	Icemaker	1 unit	New	388.40	9	\$1,056.09	45%	at stock turnover	\$0.43	3.34	3.80	ENERGY STAR
Warehouse, Controlled Atm.	Refrigeration	Vending Machine	1 unit	New	69.80	10	\$42.81	45%	at stock turnover	\$0.08	0.18	0.21	EIA 2011-2012 Ref. Case
Warehouse, Controlled Atm.	Food Preparation	Oven	1 unit	New	13,015.66	10	\$1,067.99	66%	at stock turnover	\$0.01	0.42	0.47	RTF Workbook
Warehouse, Controlled Atm.	Food Preparation	Fryer	1 unit	New	2,482.63	10	\$782.02	76%	at stock turnover	\$0.04	0.13	0.15	RTF Workbook

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Warehouse, Controlled Atm.	Food Preparation	Dishwasher	1 unit	New	1,161.85	15	\$564.57	43%	at stock turnover	\$0.05	0.05	0.06	ENERGY STAR
Warehouse, Controlled Atm.	Food Preparation	Hot Food Container	1 unit	New	691.28	20	\$490.95	43%	at stock turnover	\$0.07	0.09	0.10	RTF Workbook
Warehouse, Controlled Atm.	Food Preparation	Steamer	1 unit	New	57,034.43	9	\$837.45	43%	at stock turnover	\$0.00	0.94	1.06	RTF Workbook
Warehouse, Controlled Atm.	Office Equipment	Desktop Computer	1 unit	New	106.43	5	\$0.01	100%	at stock turnover	\$0.00	0.32	0.39	7th Power Plan
Warehouse, Controlled Atm.	Office Equipment	Laptop	1 unit	New	31.76	4	\$0.01	100%	at stock turnover	\$0.00	0.03	0.04	7th Power Plan
Warehouse, Controlled Atm.	Office Equipment	Monitor	1 unit	New	26.41	5	\$0.01	100%	at stock turnover	\$0.00	0.02	0.02	7th Power Plan
Warehouse, Controlled Atm.	Office Equipment	Server	1 unit	New	63.85	4	\$0.01	100%	at stock turnover	\$0.00	0.34	0.40	AEG Research
Warehouse, Controlled Atm.	Office Equipment	Printer/Copier/Fax	1 unit	New	192.16	6	\$0.01	100%	at stock turnover	\$0.00	0.01	0.01	ENERGY STAR
Warehouse, Controlled Atm.	Office Equipment	POS Terminal	1 unit	New	106.43	5	\$0.01	40%	at stock turnover	\$0.00	0.13	0.15	7th Power Plan
Warehouse, Controlled Atm.	Miscellaneous	Non-HVAC Motors	1 unit	New	0.00	15	\$0.00	90%	at stock turnover	\$0.00	0.00	0.00	N/A
Warehouse, Controlled Atm.	Miscellaneous	Pool Pump	1 unit	New	0.00	10	\$246.30	0%	at stock turnover	\$0.00	0.00	0.00	Southern California Edison
Warehouse, Controlled Atm.	Miscellaneous	Pool Heater	1 unit	New	0.00	15	\$3,546.07	0%	at stock turnover	\$0.00	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Data Center	Cooling	Air-Cooled Chiller	1 kBTU/hr	Existing	0.00	20	\$26.36	15%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Data Center	Cooling	Water-Cooled Chiller	1 kBTU/hr	Existing	0.00	25	\$12.65	10%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Data Center	Cooling	RTU	1 kBTU/hr	Existing	0.00	15	\$6.75	50%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Data Center	Cooling	Room AC	1 kBTU/hr	Existing	0.00	15	\$23.62	3%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Data Center	Cooling	Evaporative AC	11 per TR	Existing	0.00	15	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	New Buildings Institute Study, 2006
Data Center	Cooling	Air-Source Heat Pump	1 kBTU/hr	Existing	0.00	15	\$21.65	7%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Data Center	Heating	Air-Source Heat Pump	1 kBTU/hr	Existing	0.00	15	\$21.65	7%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Data Center	Cooling	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	7%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Data Center	Heating	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	7%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Data Center	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Data Center	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	40%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Data Center	Ventilation	Ventilation	1000 CFM	Existing	0.00	20	\$1,219.71	100%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Data Center	Water Heating	Water Heater	65 gallons	Existing	0.00	13	\$3,537.01	56%	at stock turnover	\$0.00	0.00	0.00	7th Power Plan
Data Center	Interior Lighting	Screw-in	lamps	Existing	0.00	8	\$3.95	100%	at stock turnover	\$0.00	0.00	0.00	7th Power Plan
Data Center	Interior Lighting	Linear Lighting	lamps	Existing	0.00	17	\$52.83	100%	at stock turnover	\$0.00	0.00	0.00	7th Power Plan
Data Center	Interior Lighting	High-Bay Fixtures	lamps	Existing	0.00	15	\$123.86	100%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Data Center	Exterior Lighting	Screw-in	lamps	Existing	0.00	8	\$3.95	100%	at stock turnover	\$0.00	0.00	0.00	7th Power Plan
Data Center	Exterior Lighting	Linear Lighting	lamps	Existing	0.00	17	\$52.83	100%	at stock turnover	\$0.00	0.00	0.00	7th Power Plan
Data Center	Exterior Lighting	Area Lighting	lamps	Existing	0.00	15	\$44.55	100%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Data Center	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	Existing	0.00	11	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Data Center	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	Existing	0.00	15	\$0.00	14%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Data Center	Refrigeration	Glass Door Display	1 unit	Existing	0.00	15	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Data Center	Refrigeration	Open Display Case	1 unit	Existing	0.00	10	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Data Center	Refrigeration	Icemaker	1 unit	Existing	0.00	9	\$1,056.09	45%	at stock turnover	\$0.00	0.00	0.00	ENERGY STAR
Data Center	Refrigeration	Vending Machine	1 unit	Existing	0.00	10	\$42.81	45%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Data Center	Food Preparation	Oven	1 unit	Existing	0.00	10	\$1,067.99	66%	at stock turnover	\$0.00	0.00	0.00	RTF Workbook
Data Center	Food Preparation	Fryer	1 unit	Existing	0.00	10	\$782.02	76%	at stock turnover	\$0.00	0.00	0.00	RTF Workbook
Data Center	Food Preparation	Dishwasher	1 unit	Existing	0.00	15	\$564.57	43%	at stock turnover	\$0.00	0.00	0.00	ENERGY STAR
Data Center	Food Preparation	Hot Food Container	1 unit	Existing	0.00	20	\$490.95	43%	at stock turnover	\$0.00	0.00	0.00	RTF Workbook
Data Center	Food Preparation	Steamer	1 unit	Existing	0.00	9	\$837.45	43%	at stock turnover	\$0.00	0.00	0.00	RTF Workbook
Data Center	Office Equipment	Desktop Computer	1 unit	Existing	0.00	5	\$0.01	100%	at stock turnover	\$0.00	0.00	0.00	7th Power Plan
Data Center	Office Equipment	Laptop	1 unit	Existing	0.00	4	\$0.01	100%	at stock turnover	\$0.00	0.00	0.00	7th Power Plan
Data Center	Office Equipment	Monitor	1 unit	Existing	0.00	5	\$0.01	100%	at stock turnover	\$0.00	0.00	0.00	7th Power Plan
Data Center	Office Equipment	Server	1 unit	Existing	0.00	4	\$0.01	100%	at stock turnover	\$0.00	0.00	0.00	AEG Research
Data Center	Office Equipment	Printer/Copier/Fax	1 unit	Existing	0.00	6	\$0.01	100%	at stock turnover	\$0.00	0.00	0.00	ENERGY STAR
Data Center	Office Equipment	POS Terminal	1 unit	Existing	0.00	5	\$0.01	40%	at stock turnover	\$0.00	0.00	0.00	7th Power Plan
Data Center	Miscellaneous	Non-HVAC Motors	1 unit	Existing	0.00	15	\$0.00	90%	at stock turnover	\$0.00	0.00	0.00	N/A
Data Center	Miscellaneous	Pool Pump	1 unit	Existing	0.00	10	\$246.30	0%	at stock turnover	\$0.00	0.00	0.00	Southern California Edison
Data Center	Miscellaneous	Pool Heater	1 unit	Existing	0.00	15	\$3,546.07	0%	at stock turnover	\$0.00	0.00	0.00	AEG Research
Data Center	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Data Center	Cooling	Air-Cooled Chiller	1 kBTU/hr	New	0.00	20	\$26.36	15%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Data Center	Cooling	Water-Cooled Chiller	1 kBTU/hr	New	0.00	25	\$12.65	10%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Data Center	Cooling	RTU	1 kBTU/hr	New	0.00	15	\$6.75	50%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Data Center	Cooling	Room AC	1 kBTU/hr	New	0.00	15	\$23.62	3%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Data Center	Cooling	Evaporative AC	11 per TR	New	0.00	15	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	New Buildings Institute Study, 2006
Data Center	Cooling	Air-Source Heat Pump	1 kBTU/hr	New	0.00	15	\$21.65	7%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Data Center	Heating	Air-Source Heat Pump	1 kBTU/hr	New	0.00	15	\$21.65	7%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Data Center	Cooling	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	7%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Data Center	Heating	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	7%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Data Center	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Data Center	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	40%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Data Center	Ventilation	Ventilation	1000 CFM	New	0.00	20	\$1,219.71	100%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Data Center	Water Heating	Water Heater	65 gallons	New	0.00	13	\$3,537.01	56%	at stock turnover	\$0.00	0.00	0.00	7th Power Plan
Data Center	Interior Lighting	Screw-in	lamps	New	0.00	8	\$3.95	100%	at stock turnover	\$0.00	0.00	0.00	7th Power Plan
Data Center	Interior Lighting	Linear Lighting	lamps	New	0.00	17	\$52.83	100%	at stock turnover	\$0.00	0.00	0.00	7th Power Plan
Data Center	Interior Lighting	High-Bay Fixtures	lamps	New	0.00	15	\$123.86	100%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Data Center	Exterior Lighting	Screw-in	lamps	New	0.00	8	\$3.95	100%	at stock turnover	\$0.00	0.00	0.00	7th Power Plan
Data Center	Exterior Lighting	Linear Lighting	lamps	New	0.00	17	\$52.83	100%	at stock turnover	\$0.00	0.00	0.00	7th Power Plan
Data Center	Exterior Lighting	Area Lighting	lamps	New	0.00	15	\$44.55	100%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Data Center	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	New	0.00	11	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Data Center	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	New	0.00	15	\$0.00	14%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Data Center	Refrigeration	Glass Door Display	1 unit	New	0.00	15	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Data Center	Refrigeration	Open Display Case	1 unit	New	0.00	10	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Data Center	Refrigeration	Icemaker	1 unit	New	0.00	9	\$1,056.09	45%	at stock turnover	\$0.00	0.00	0.00	ENERGY STAR
Data Center	Refrigeration	Vending Machine	1 unit	New	0.00	10	\$42.81	45%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Data Center	Food Preparation	Oven	1 unit	New	0.00	10	\$1,067.99	66%	at stock turnover	\$0.00	0.00	0.00	RTF Workbook
Data Center	Food Preparation	Fryer	1 unit	New	0.00	10	\$782.02	76%	at stock turnover	\$0.00	0.00	0.00	RTF Workbook
Data Center	Food Preparation	Dishwasher	1 unit	New	0.00	15	\$564.57	43%	at stock turnover	\$0.00	0.00	0.00	ENERGY STAR
Data Center	Food Preparation	Hot Food Container	1 unit	New	0.00	20	\$490.95	43%	at stock turnover	\$0.00	0.00	0.00	RTF Workbook
Data Center	Food Preparation	Steamer	1 unit	New	0.00	9	\$837.45	43%	at stock turnover	\$0.00	0.00	0.00	RTF Workbook
Data Center	Office Equipment	Desktop Computer	1 unit	New	0.00	5	\$0.01	100%	at stock turnover	\$0.00	0.00	0.00	7th Power Plan
Data Center	Office Equipment	Laptop	1 unit	New	0.00	4	\$0.01	100%	at stock turnover	\$0.00	0.00	0.00	7th Power Plan
Data Center	Office Equipment	Monitor	1 unit	New	0.00	5	\$0.01	100%	at stock turnover	\$0.00	0.00	0.00	7th Power Plan
Data Center	Office Equipment	Server	1 unit	New	0.00	4	\$0.01	100%	at stock turnover	\$0.00	0.00	0.00	AEG Research
Data Center	Office Equipment	Printer/Copier/Fax	1 unit	New	0.00	6	\$0.01	100%	at stock turnover	\$0.00	0.00	0.00	ENERGY STAR
Data Center	Office Equipment	POS Terminal	1 unit	New	0.00	5	\$0.01	40%	at stock turnover	\$0.00	0.00	0.00	7th Power Plan
Data Center	Miscellaneous	Non-HVAC Motors	1 unit	New	0.00	15	\$0.00	90%	at stock turnover	\$0.00	0.00	0.00	N/A
Data Center	Miscellaneous	Pool Pump	1 unit	New	0.00	10	\$246.30	0%	at stock turnover	\$0.00	0.00	0.00	Southern California Edison
Data Center	Miscellaneous	Pool Heater	1 unit	New	0.00	15	\$3,546.07	0%	at stock turnover	\$0.00	0.00	0.00	AEG Research
Data Center	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Miscellaneous	Cooling	Air-Cooled Chiller	1 kBTU/hr	Existing	11.73	20	\$26.36	15%	at stock turnover	\$0.21	85.23	98.87	Annual Energy Outlook, 2015
Miscellaneous	Cooling	Water-Cooled Chiller	1 kBTU/hr	Existing	17.88	25	\$12.65	10%	at stock turnover	\$0.07	67.23	77.99	Annual Energy Outlook, 2015

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Miscellaneous	Cooling	RTU	1 kBTU/hr	Existing	1.91	15	\$6.75	50%	at stock turnover	\$0.39	96.74	115.32	Annual Energy Outlook, 2015
Miscellaneous	Cooling	Room AC	1 kBTU/hr	Existing	6.81	15	\$23.62	3%	at stock turnover	\$0.38	30.87	36.80	Annual Energy Outlook, 2015
Miscellaneous	Cooling	Evaporative AC	11 per TR	Existing	0.00	15	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	New Buildings Institute Study, 2006
Miscellaneous	Cooling	Air-Source Heat Pump	1 kBTU/hr	Existing	3.67	15	\$21.65	7%	at stock turnover	\$0.49	21.46	24.43	Annual Energy Outlook, 2015
Miscellaneous	Heating	Air-Source Heat Pump	1 kBTU/hr	Existing	1.13	15	\$21.65	7%	at stock turnover	\$0.49	6.58	7.49	Annual Energy Outlook, 2015
Miscellaneous	Cooling	Geothermal Heat Pump	1 kBTU/hr	Existing	8.93	25	\$26.36	7%	at stock turnover	\$0.18	9.55	10.75	Annual Energy Outlook, 2015
Miscellaneous	Heating	Geothermal Heat Pump	1 kBTU/hr	Existing	4.31	25	\$26.36	7%	at stock turnover	\$0.18	4.61	5.19	Annual Energy Outlook, 2015
Miscellaneous	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Miscellaneous	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	40%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Miscellaneous	Ventilation	Ventilation	1000 CFM	Existing	2,622.79	20	\$1,219.71	100%	at stock turnover	\$0.04	149.21	168.03	AEG-BEST
Miscellaneous	Water Heating	Water Heater	65 gallons	Existing	1,864.75	13	\$3,537.01	56%	at stock turnover	\$0.22	624.46	737.76	7th Power Plan
Miscellaneous	Interior Lighting	Screw-in	lamps	Existing	54.44	8	\$3.95	100%	at stock turnover	\$0.00	213.86	280.50	7th Power Plan
Miscellaneous	Interior Lighting	Linear Lighting	lamps	Existing	101.85	17	\$52.83	100%	at stock turnover	\$0.04	1,150.37	1,269.38	7th Power Plan
Miscellaneous	Interior Lighting	High-Bay Fixtures	lamps	Existing	599.09	15	\$123.86	100%	at stock turnover	\$0.02	1,007.15	1,159.22	Annual Energy Outlook, 2015
Miscellaneous	Exterior Lighting	Screw-in	lamps	Existing	59.91	8	\$3.95	100%	at stock turnover	\$0.00	41.42	54.33	7th Power Plan
Miscellaneous	Exterior Lighting	Linear Lighting	lamps	Existing	117.72	17	\$52.83	100%	at stock turnover	\$0.03	46.29	51.08	7th Power Plan
Miscellaneous	Exterior Lighting	Area Lighting	lamps	Existing	985.05	15	\$44.55	100%	at stock turnover	\$0.00	564.06	631.90	Annual Energy Outlook, 2015
Miscellaneous	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	Existing	1,507.00	11	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Miscellaneous	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	Existing	605.00	15	\$0.00	14%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Miscellaneous	Refrigeration	Glass Door Display	1 unit	Existing	767.00	15	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Miscellaneous	Refrigeration	Open Display Case	1 unit	Existing	1,438.00	10	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Miscellaneous	Refrigeration	Icemaker	1 unit	Existing	388.40	9	\$1,056.09	45%	at stock turnover	\$0.43	6.88	8.11	ENERGY STAR
Miscellaneous	Refrigeration	Vending Machine	1 unit	Existing	69.80	10	\$42.81	45%	at stock turnover	\$0.08	2.49	2.89	EIA 2011-2012 Ref. Case
Miscellaneous	Food Preparation	Oven	1 unit	Existing	13,015.66	10	\$1,067.99	66%	at stock turnover	\$0.01	17.34	20.25	RTF Workbook
Miscellaneous	Food Preparation	Fryer	1 unit	Existing	2,482.63	10	\$782.02	76%	at stock turnover	\$0.04	6.69	7.86	RTF Workbook
Miscellaneous	Food Preparation	Dishwasher	1 unit	Existing	1,161.85	15	\$564.57	43%	at stock turnover	\$0.05	2.98	3.36	ENERGY STAR
Miscellaneous	Food Preparation	Hot Food Container	1 unit	Existing	691.28	20	\$490.95	43%	at stock turnover	\$0.07	2.26	2.55	RTF Workbook
Miscellaneous	Food Preparation	Steamer	1 unit	Existing	57,034.43	9	\$837.45	43%	at stock turnover	\$0.00	28.87	33.49	RTF Workbook
Miscellaneous	Office Equipment	Desktop Computer	1 unit	Existing	106.43	5	\$0.01	100%	at stock turnover	\$0.00	62.41	81.13	7th Power Plan
Miscellaneous	Office Equipment	Laptop	1 unit	Existing	31.76	4	\$0.01	100%	at stock turnover	\$0.00	7.60	9.38	7th Power Plan
Miscellaneous	Office Equipment	Monitor	1 unit	Existing	26.41	5	\$0.01	100%	at stock turnover	\$0.00	3.91	5.08	7th Power Plan
Miscellaneous	Office Equipment	Server	1 unit	Existing	63.85	4	\$0.01	100%	at stock turnover	\$0.00	26.54	32.46	AEG Research
Miscellaneous	Office Equipment	Printer/Copier/Fax	1 unit	Existing	192.16	6	\$0.01	100%	at stock turnover	\$0.00	1.41	1.69	ENERGY STAR
Miscellaneous	Office Equipment	POS Terminal	1 unit	Existing	106.43	5	\$0.01	40%	at stock turnover	\$0.00	4.09	5.00	7th Power Plan
Miscellaneous	Miscellaneous	Non-HVAC Motors	1 unit	Existing	0.00	15	\$0.00	90%	at stock turnover	\$0.00	0.00	0.00	N/A
Miscellaneous	Miscellaneous	Pool Pump	1 unit	Existing	1,234.20	10	\$246.30	0%	at stock turnover	\$0.03	0.35	0.39	Southern California Edison
Miscellaneous	Miscellaneous	Pool Heater	1 unit	Existing	13,164.62	15	\$3,546.07	0%	at stock turnover	\$0.03	0.15	0.17	AEG Research
Miscellaneous	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Miscellaneous	Cooling	Air-Cooled Chiller	1 kBTU/hr	New	10.10	20	\$26.36	15%	at stock turnover	\$0.25	58.29	66.67	Annual Energy Outlook, 2015
Miscellaneous	Cooling	Water-Cooled Chiller	1 kBTU/hr	New	15.56	25	\$12.65	10%	at stock turnover	\$0.07	39.56	45.82	Annual Energy Outlook, 2015
Miscellaneous	Cooling	RTU	1 kBTU/hr	New	1.87	15	\$6.75	50%	at stock turnover	\$0.39	59.82	69.11	Annual Energy Outlook, 2015
Miscellaneous	Cooling	Room AC	1 kBTU/hr	New	5.96	15	\$23.62	3%	at stock turnover	\$0.43	16.99	19.63	Annual Energy Outlook, 2015
Miscellaneous	Cooling	Evaporative AC	11 per TR	New	0.00	15	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	New Buildings Institute Study, 2006
Miscellaneous	Cooling	Air-Source Heat Pump	1 kBTU/hr	New	3.17	15	\$21.65	7%	at stock turnover	\$0.56	12.29	13.66	Annual Energy Outlook, 2015
Miscellaneous	Heating	Air-Source Heat Pump	1 kBTU/hr	New	1.08	15	\$21.65	7%	at stock turnover	\$0.56	4.18	4.65	Annual Energy Outlook, 2015
Miscellaneous	Cooling	Geothermal Heat Pump	1 kBTU/hr	New	8.79	25	\$26.36	7%	at stock turnover	\$0.21	6.39	7.19	Annual Energy Outlook, 2015
Miscellaneous	Heating	Geothermal Heat Pump	1 kBTU/hr	New	2.58	25	\$26.36	7%	at stock turnover	\$0.21	1.88	2.11	Annual Energy Outlook, 2015
Miscellaneous	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Miscellaneous	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	40%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Miscellaneous	Ventilation	Ventilation	1000 CFM	New	2,473.88	20	\$1,219.71	100%	at stock turnover	\$0.05	104.71	116.43	AEG-BEST
Miscellaneous	Water Heating	Water Heater	65 gallons	New	1,864.75	13	\$3,537.01	56%	at stock turnover	\$0.22	362.98	413.03	7th Power Plan
Miscellaneous	Interior Lighting	Screw-in	lamps	New	54.54	8	\$3.95	100%	at stock turnover	\$0.00	121.40	133.97	7th Power Plan
Miscellaneous	Interior Lighting	Linear Lighting	lamps	New	101.85	17	\$52.83	100%	at stock turnover	\$0.04	632.40	688.40	7th Power Plan
Miscellaneous	Interior Lighting	High-Bay Fixtures	lamps	New	599.30	15	\$123.86	100%	at stock turnover	\$0.02	634.06	714.18	Annual Energy Outlook, 2015
Miscellaneous	Exterior Lighting	Screw-in	lamps	New	60.03	8	\$3.95	100%	at stock turnover	\$0.00	23.51	25.95	7th Power Plan
Miscellaneous	Exterior Lighting	Linear Lighting	lamps	New	117.72	17	\$52.83	100%	at stock turnover	\$0.03	25.45	27.70	7th Power Plan
Miscellaneous	Exterior Lighting	Area Lighting	lamps	New	985.05	15	\$44.55	100%	at stock turnover	\$0.00	358.41	395.52	Annual Energy Outlook, 2015

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Miscellaneous	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	New	1,507.00	11	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Miscellaneous	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	New	605.00	15	\$0.00	14%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Miscellaneous	Refrigeration	Glass Door Display	1 unit	New	767.00	15	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Miscellaneous	Refrigeration	Open Display Case	1 unit	New	1,438.00	10	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Miscellaneous	Refrigeration	Icemaker	1 unit	New	388.40	9	\$1,056.09	45%	at stock turnover	\$0.43	3.90	4.43	ENERGY STAR
Miscellaneous	Refrigeration	Vending Machine	1 unit	New	69.80	10	\$42.81	45%	at stock turnover	\$0.08	1.52	1.72	EIA 2011-2012 Ref. Case
Miscellaneous	Food Preparation	Oven	1 unit	New	13,015.66	10	\$1,067.99	66%	at stock turnover	\$0.01	21.84	24.58	RTF Workbook
Miscellaneous	Food Preparation	Fryer	1 unit	New	2,482.63	10	\$782.02	76%	at stock turnover	\$0.04	3.77	4.26	RTF Workbook
Miscellaneous	Food Preparation	Dishwasher	1 unit	New	1,161.85	15	\$564.57	43%	at stock turnover	\$0.05	1.06	1.18	ENERGY STAR
Miscellaneous	Food Preparation	Hot Food Container	1 unit	New	691.28	20	\$490.95	43%	at stock turnover	\$0.07	1.84	2.05	RTF Workbook
Miscellaneous	Food Preparation	Steamer	1 unit	New	57,034.43	9	\$837.45	43%	at stock turnover	\$0.00	18.55	20.82	RTF Workbook
Miscellaneous	Office Equipment	Desktop Computer	1 unit	New	106.43	5	\$0.01	100%	at stock turnover	\$0.00	25.51	31.21	7th Power Plan
Miscellaneous	Office Equipment	Laptop	1 unit	New	31.76	4	\$0.01	100%	at stock turnover	\$0.00	3.36	3.99	7th Power Plan
Miscellaneous	Office Equipment	Monitor	1 unit	New	26.41	5	\$0.01	100%	at stock turnover	\$0.00	1.60	1.95	7th Power Plan
Miscellaneous	Office Equipment	Server	1 unit	New	63.85	4	\$0.01	100%	at stock turnover	\$0.00	11.22	13.18	AEG Research
Miscellaneous	Office Equipment	Printer/Copier/Fax	1 unit	New	192.16	6	\$0.01	100%	at stock turnover	\$0.00	0.73	0.83	ENERGY STAR
Miscellaneous	Office Equipment	POS Terminal	1 unit	New	106.43	5	\$0.01	40%	at stock turnover	\$0.00	1.88	2.20	7th Power Plan
Miscellaneous	Miscellaneous	Non-HVAC Motors	1 unit	New	0.00	15	\$0.00	90%	at stock turnover	\$0.00	0.00	0.00	N/A
Miscellaneous	Miscellaneous	Pool Pump	1 unit	New	1,234.20	10	\$246.30	0%	at stock turnover	\$0.03	0.23	0.25	Southern California Edison

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Miscellaneous	Miscellaneous	Pool Heater	1 unit	New	13,164.62	15	\$3,546.07	0%	at stock turnover	\$0.03	0.10	0.11	AEG Research
Miscellaneous	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Large Office	Cooling	Insulation - Ceiling	sqft roof	Existing	0.08	45	\$1.28	15%	35%	\$0.10	0.76	0.98	Building Energy Simulation Tool
Large Office	Heating	Insulation - Ceiling	sqft roof	Existing	0.53	45	\$1.28	15%	35%	\$0.10	3.26	3.91	Building Energy Simulation Tool
Large Office	Ventilation	Insulation - Ceiling	sqft roof	Existing	0.40	45	\$1.28	15%	35%	\$0.10	4.06	5.49	Building Energy Simulation Tool
Large Office	Cooling	Insulation - Ducting	sqft duct	Existing	0.13	20	\$0.84	15%	35%	\$0.00	1.89	2.50	Building Energy Simulation Tool
Large Office	Heating	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.84	15%	35%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Large Office	Ventilation	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.84	15%	35%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Large Office	Cooling	Building Shell - Cool Roofs	sqft roof	Existing	0.50	20	\$0.78	45%	50%	\$1.71	1.23	1.54	Building Energy Simulation Tool
Large Office	Heating	Building Shell - Cool Roofs	sqft roof	Existing	-0.27	20	\$0.78	45%	50%	\$1.71	-0.42	-0.49	Building Energy Simulation Tool
Large Office	Ventilation	Building Shell - Cool Roofs	sqft roof	Existing	-0.20	20	\$0.78	45%	50%	\$1.71	-0.53	-0.70	Building Energy Simulation Tool
Large Office	Cooling	Insulation - Wall Cavity	sqft wall	Existing	-0.27	45	\$0.78	15%	35%	\$0.05	-2.24	-2.81	Building Energy Simulation Tool
Large Office	Heating	Insulation - Wall Cavity	sqft wall	Existing	0.83	45	\$0.78	15%	35%	\$0.05	4.43	5.26	Building Energy Simulation Tool
Large Office	Ventilation	Insulation - Wall Cavity	sqft wall	Existing	0.63	45	\$0.78	15%	35%	\$0.05	5.60	7.42	Building Energy Simulation Tool
Large Office	Cooling	HVAC - Duct Repair and Sealing	tonCool	Existing	5.07	18	\$0.57	15%	50%	\$10.00	0.69	0.97	Building Energy Simulation Tool
Large Office	Heating	HVAC - Duct Repair and Sealing	tonCool	Existing	-4.18	18	\$0.57	15%	50%	\$10.00	-0.37	-0.48	Building Energy Simulation Tool
Large Office	Ventilation	HVAC - Duct Repair and Sealing	tonCool	Existing	-3.38	18	\$0.57	15%	50%	\$10.00	-0.50	-0.71	Building Energy Simulation Tool
Large Office	Cooling	Windows - High Efficiency Glazing	sqft window	Existing	6.25	30	\$35.93	48%	48%	\$0.14	0.00	0.00	7th Power Plan
Large Office	Heating	Windows - High Efficiency Glazing	sqft window	Existing	9.41	30	\$35.93	48%	48%	\$0.14	0.00	0.00	7th Power Plan

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Large Office	Ventilation	Windows - High Efficiency Glazing	sqft window	Existing	4.15	30	\$35.93	48%	48%	\$0.14	0.00	0.00	7th Power Plan
Large Office	Cooling	Chiller - Chilled Water Reset	ChillCtrl	Existing	3,408.09	10	\$884.85	15%	75%	\$0.03	1.37	1.91	AEG-BEST
Large Office	Cooling	Chiller - Chilled Water Variable-Flow System	HP cool	Existing	412.15	15	\$332.55	15%	75%	\$0.08	22.97	32.16	AEG-BEST
Large Office	Cooling	Chiller - Variable Speed Fans	HP fan	Existing	887.71	15	\$208.36	15%	75%	\$0.02	4.97	6.88	New Jersey TRM
Large Office	Cooling	Water-Cooled Chiller - Condenser Water Reset	ChillCtrl	Existing	30,009.99	10	\$884.85	15%	75%	\$0.00	4.58	6.39	AEG-BEST
Large Office	Cooling	HVAC - Economizer	HP cool	Existing	115.83	10	\$168.42	18%	75%	\$0.17	21.64	31.32	AEG-BEST
Large Office	Heating	Space Heating - Heat Recovery Ventilator	CFM	Existing	1.92	14	\$5.08	3%	75%	\$0.28	12.39	16.55	7th Power Plan
Large Office	Ventilation	Ventilation - ECM on VAV Boxes	sqft	Existing	0.42	18	\$0.25	15%	20%	\$0.05	3.20	4.29	7th Power Plan
Large Office	Ventilation	Ventilation - Variable Speed Control	sqft	Existing	0.04	15	\$181.39	13%	50%	\$419.39	2.37	3.87	AEG-BEST
Large Office	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.02	15	\$0.25	15%	75%	\$1.33	1.73	2.75	7th Power Plan
Large Office	Cooling	Destratification Fans (HVLS)	Strat Fan	Existing	3,506.62	15	\$7,270.90	15%	30%	\$0.09	7.15	10.26	AEG Research
Large Office	Heating	Destratification Fans (HVLS)	Strat Fan	Existing	4,942.13	15	\$7,270.90	15%	30%	\$0.09	6.38	8.37	AEG Research
Large Office	Cooling	RTU - Maintenance	tonCool	Existing	54.56	3	\$35.00	15%	45%	\$0.18	3.90	6.26	AEG Research
Large Office	Cooling	RTU - Advanced Controls	sqft	Existing	0.09	15	\$0.07	15%	45%	\$0.07	2.17	2.73	7th Power Plan
Large Office	Cooling	RTU - Evaporative Precooler	tonCool	Existing	111.77	15	\$681.62	15%	75%	\$0.56	14.45	17.99	AEG Research
Large Office	Cooling	Ductless Mini Split Heat Pump	tonCool	Existing	241.37	15	\$3,359.26	15%	25%	\$0.74	0.28	0.44	7th Power Plan
Large Office	Heating	Ductless Mini Split Heat Pump	tonCool	Existing	173.15	15	\$3,359.26	15%	25%	\$0.74	3.32	4.48	7th Power Plan
Large Office	Cooling	Thermostat - WiFi/Interactive	sqft	Existing	0.53	5	\$0.66	30%	40%	\$0.10	7.41	10.08	7th Power Plan
Large Office	Heating	Thermostat - WiFi/Interactive	sqft	Existing	0.38	5	\$0.66	30%	40%	\$0.10	3.45	4.34	7th Power Plan
Large Office	Ventilation	Thermostat - WiFi/Interactive	sqft	Existing	0.31	5	\$0.66	30%	40%	\$0.10	4.62	6.39	7th Power Plan
Large Office	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	Existing	9.64	10	\$8.35	25%	65%	\$0.07	0.08	0.18	Illinois TRM

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Large Office	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	Existing	24.98	10	\$11.64	25%	65%	\$0.04	0.10	0.24	7th Power Plan
Large Office	Water Heating	Water Heater - High Efficiency Circulation Pump	WHUnits	Existing	51.34	15	\$36.75	15%	25%	\$0.05	0.10	0.18	Hawaii TRM
Large Office	Water Heating	Water Heater - Pipe Insulation	PipeFeet	Existing	268.20	15	\$14.88	16%	75%	\$0.00	1.32	2.89	AEG-BEST
Large Office	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	Existing	49.64	4	\$144.04	25%	65%	\$0.45	0.38	0.90	7th Power Plan
Large Office	Water Heating	Water Heater - Thermostat Setback	WHUnits	Existing	51.17	2	\$5.00	15%	75%	\$0.03	0.64	1.50	Illinois TRM
Large Office	Water Heating	Water Heater - Solar System	PipeFeet	Existing	924.15	20	\$215.28	1%	30%	\$0.01	2.20	4.93	AEG-BEST
Large Office	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.27	15	\$0.35	3%	23%	\$0.10	10.12	14.75	7th Power Plan
Large Office	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.37	15	\$0.58	3%	23%	\$0.12	13.65	20.34	7th Power Plan
Large Office	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	Existing	128.93	15	\$54.41	1%	3%	\$0.03	0.29	0.55	7th Power Plan
Large Office	Interior Lighting	Interior Lighting - Timeclocks and Timers	occ sens	Existing	0.00	8	\$111.67	7%	15%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Large Office	Interior Lighting	Interior Lighting - Skylights	1000 sqft	Existing	0.00	15	\$1,006.35	15%	25%	\$0.00	0.00	0.00	AEG Research
Large Office	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	1000 sqft	Existing	180.46	16	\$1,807.69	5%	15%	\$0.74	2.63	5.20	7th Power Plan
Large Office	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	Existing	1,878.89	11	\$30.80	15%	50%	\$0.00	10.22	18.30	Illinois TRM
Large Office	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	ELtg Watts	Existing	1.00	8	\$0.63	15%	25%	\$0.07	6.14	12.13	7th Power Plan
Large Office	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	Existing	62.08	8	\$55.10	15%	25%	\$0.10	3.11	6.32	Pacific Gas and Electric Research
Large Office	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	Existing	74.64	7	\$3,400.00	15%	30%	\$5.25	5.50	11.59	AEG Research
Large Office	Refrigeration	Refrigeration - Anti-Sweat Heater	Fridge Feet	Existing	10.67	8	\$48.18	0%	0%	\$0.69	0.00	0.00	7th Power Plan
Large Office	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	Existing	14.28	4	\$10.44	0%	0%	\$0.19	0.00	0.00	Michigan Energy Measures Database
Large Office	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	Existing	132.05	16	\$165.20	0%	0%	\$0.13	0.00	0.00	7th Power Plan

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Large Office	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	Existing	18.00	15	\$335.85	0%	0%	\$1.96	0.00	0.00	7th Power Plan
Large Office	Refrigeration	Refrigeration - Strip Curtain	Walkin Door	Existing	14.67	2	\$10.41	0%	0%	\$0.33	0.00	0.00	7th Power Plan
Large Office	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	Existing	0.26	15	\$45.43	0%	0%	\$17.39	0.00	0.00	Annual Energy Outlook, 2015
Large Office	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	Existing	5.65	15	\$313.82	0%	0%	\$5.79	0.00	0.00	Annual Energy Outlook, 2015
Large Office	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	Existing	88.69	10	\$506.05	0%	0%	\$0.75	0.00	0.00	Vermont TRM
Large Office	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	Existing	6.34	6	\$45.41	0%	0%	\$1.34	0.00	0.00	7th Power Plan
Large Office	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	Existing	0.51	8	\$3.72	0%	0%	\$1.11	0.00	0.00	7th Power Plan
Large Office	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	Existing	111.98	5	\$45.85	0%	0%	\$0.09	0.00	0.00	Illinois TRM
Large Office	Refrigeration	Grocery - ECMs for Display Cases	Fridge Case	Existing	26.26	16	\$165.20	0%	0%	\$0.64	0.00	0.00	7th Power Plan
Large Office	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	Existing	1,069.46	5	\$187.94	25%	75%	\$0.04	0.66	0.87	Illinois TRM
Large Office	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	Existing	3,932.36	18	\$8,526.67	25%	50%	\$0.20	6.00	8.17	7th Power Plan
Large Office	Office Equipment	Office Equipment - Smart Power Strips	Smart Strip	Existing	94.14	4	\$41.63	10%	50%	\$0.10	14.42	17.77	7th Power Plan
Large Office	Cooling	Lodging - Guest Room Controls	LodgUnit	Existing	191.68	15	\$260.00	0%	0%	\$0.23	0.00	0.00	AEG-BEST
Large Office	Heating	Lodging - Guest Room Controls	LodgUnit	Existing	-80.30	15	\$260.00	0%	0%	\$0.23	0.00	0.00	AEG-BEST
Large Office	Office Equipment	Data Center - Best Practice Measures	sqft	Existing	0.03	5	\$0.00	0%	0%	\$0.02	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Office	Cooling	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.00	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Office	Ventilation	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.00	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Office	Interior Lighting	Data Center - Commercially Available Measures	sqft	Existing	0.02	8	\$0.00	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Office	Office Equipment	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.00	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx

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Large Office	Cooling	Data Center - Cutting Edge Measures	sqft	Existing	0.04	6	\$0.00	0%	0%	\$0.02	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Office	Office Equipment	Data Center - Cutting Edge Measures	sqft	Existing	0.00	6	\$0.00	0%	0%	\$0.02	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Office	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	Existing	5,929.96	18	\$4,092.80	0%	0%	\$0.06	0.00	0.00	7th Power Plan
Large Office	Miscellaneous	Pool Pump - Timer	perBldg	Existing	0.00	10	\$85.22	15%	75%	\$0.00	0.00	0.00	Ontario Power TRM
Large Office	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	Existing	5,884.42	6	\$35.93	1%	3%	\$0.00	0.00	1.66	7th Power Plan
Large Office	Cooling	Advanced New Construction Designs	sqft	Existing	0.85	25	\$4.11	0%	0%	\$0.11	0.00	0.00	AEG Research
Large Office	Heating	Advanced New Construction Designs	sqft	Existing	0.61	25	\$4.11	0%	0%	\$0.11	0.00	0.00	AEG Research
Large Office	Ventilation	Advanced New Construction Designs	sqft	Existing	0.49	25	\$4.11	0%	0%	\$0.11	0.00	0.00	AEG Research
Large Office	Water Heating	Advanced New Construction Designs	sqft	Existing	0.12	25	\$4.11	0%	0%	\$0.11	0.00	0.00	AEG Research
Large Office	Interior Lighting	Advanced New Construction Designs	sqft	Existing	0.53	25	\$4.11	0%	0%	\$0.11	0.00	0.00	AEG Research
Large Office	Exterior Lighting	Advanced New Construction Designs	sqft	Existing	0.25	25	\$4.11	0%	0%	\$0.11	0.00	0.00	AEG Research
Large Office	Cooling	Strategic Energy Management	sqft	Existing	0.13	3	\$0.20	3%	14%	\$0.10	2.11	3.32	AEG Research
Large Office	Heating	Strategic Energy Management	sqft	Existing	0.09	3	\$0.20	3%	14%	\$0.10	0.97	1.39	AEG Research
Large Office	Ventilation	Strategic Energy Management	sqft	Existing	0.07	3	\$0.20	3%	14%	\$0.10	1.32	2.11	AEG Research
Large Office	Water Heating	Strategic Energy Management	sqft	Existing	0.02	3	\$0.20	3%	14%	\$0.10	0.16	0.39	AEG Research
Large Office	Interior Lighting	Strategic Energy Management	sqft	Existing	0.08	3	\$0.20	3%	14%	\$0.10	1.32	2.59	AEG Research
Large Office	Exterior Lighting	Strategic Energy Management	sqft	Existing	0.04	3	\$0.20	3%	14%	\$0.10	0.62	1.28	AEG Research
Large Office	Refrigeration	Strategic Energy Management	sqft	Existing	0.01	3	\$0.20	3%	14%	\$0.10	0.13	0.17	AEG Research
Large Office	Office Equipment	Strategic Energy Management	sqft	Existing	0.10	3	\$0.20	3%	14%	\$0.10	2.16	2.71	AEG Research
Large Office	Cooling	Commissioning	sqft	Existing	0.17	3	\$0.72	0%	0%	\$0.34	0.00	0.00	AEG Research

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Large Office	Heating	Commissioning	sqft	Existing	0.12	3	\$0.72	0%	0%	\$0.34	0.00	0.00	AEG Research
Large Office	Ventilation	Commissioning	sqft	Existing	0.10	3	\$0.72	0%	0%	\$0.34	0.00	0.00	AEG Research
Large Office	Water Heating	Commissioning	sqft	Existing	0.01	3	\$0.72	0%	0%	\$0.34	0.00	0.00	AEG Research
Large Office	Interior Lighting	Commissioning	sqft	Existing	0.09	3	\$0.72	0%	0%	\$0.34	0.00	0.00	AEG Research
Large Office	Exterior Lighting	Commissioning	sqft	Existing	0.04	3	\$0.72	0%	0%	\$0.34	0.00	0.00	AEG Research
Large Office	Refrigeration	Commissioning	sqft	Existing	0.02	3	\$0.72	0%	0%	\$0.34	0.00	0.00	AEG Research
Large Office	Cooling	Retrocommissioning	sqft	Existing	0.18	3	\$0.46	14%	61%	\$0.22	12.40	19.59	AEG Research
Large Office	Heating	Retrocommissioning	sqft	Existing	0.13	3	\$0.46	14%	61%	\$0.22	5.73	8.18	AEG Research
Large Office	Ventilation	Retrocommissioning	sqft	Existing	0.10	3	\$0.46	14%	61%	\$0.22	7.76	12.44	AEG Research
Large Office	Water Heating	Retrocommissioning	sqft	Existing	0.01	3	\$0.46	14%	61%	\$0.22	0.32	0.76	AEG Research
Large Office	Interior Lighting	Retrocommissioning	sqft	Existing	0.09	3	\$0.46	14%	61%	\$0.22	6.45	12.73	AEG Research
Large Office	Exterior Lighting	Retrocommissioning	sqft	Existing	0.04	3	\$0.46	14%	61%	\$0.22	3.03	6.29	AEG Research
Large Office	Refrigeration	Retrocommissioning	sqft	Existing	0.02	3	\$0.46	14%	61%	\$0.22	1.32	1.72	AEG Research
Large Office	Interior Lighting	Fruit Storage - Lighting Controls	sqft	Existing	0.07	10	\$0.09	0%	0%	\$0.12	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Office	Refrigeration	Fruit Storage Refrigeration Retrofit	sqft	Existing	0.05	10	\$1.09	0%	0%	\$2.93	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Office	Refrigeration	Fruit Storage Refrigeration Tuneup	sqft	Existing	0.01	3	\$0.23	0%	0%	\$6.01	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Office	Refrigeration	Fruit Storage Retrofit - CO2 Scrub	sqft	Existing	0.02	10	\$3.13	0%	0%	\$17.37	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Office	Refrigeration	Fruit Storage Retrofit - Membrane	sqft	Existing	0.00	10	\$0.68	0%	0%	\$18.85	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Office	Cooling	Insulation - Ceiling	sqft roof	New	0.00	45	\$1.28	15%	50%	\$0.30	0.00	0.00	Building Energy Simulation Tool
Large Office	Heating	Insulation - Ceiling	sqft roof	New	0.19	45	\$1.28	15%	50%	\$0.30	0.55	0.62	Building Energy Simulation Tool
Large Office	Ventilation	Insulation - Ceiling	sqft roof	New	0.13	45	\$1.28	15%	50%	\$0.30	0.67	0.78	Building Energy Simulation Tool
Large Office	Cooling	Insulation - Ducting	sqft duct	New	0.22	20	\$0.84	15%	50%	\$0.00	1.58	1.82	Building Energy Simulation Tool

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Large Office	Heating	Insulation - Ducting	sqft duct	New	0.00	20	\$0.84	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Large Office	Ventilation	Insulation - Ducting	sqft duct	New	0.00	20	\$0.84	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Large Office	Cooling	Building Shell - Cool Roofs	sqft roof	New	0.07	20	\$0.78	45%	50%	\$10.00	0.05	0.06	Building Energy Simulation Tool
Large Office	Heating	Building Shell - Cool Roofs	sqft roof	New	-0.09	20	\$0.78	45%	50%	\$10.00	-0.04	-0.04	Building Energy Simulation Tool
Large Office	Ventilation	Building Shell - Cool Roofs	sqft roof	New	-0.06	20	\$0.78	45%	50%	\$10.00	-0.05	-0.06	Building Energy Simulation Tool
Large Office	Cooling	Insulation - Wall Cavity	sqft wall	New	0.00	45	\$0.78	15%	50%	\$0.20	-0.02	-0.02	Building Energy Simulation Tool
Large Office	Heating	Insulation - Wall Cavity	sqft wall	New	0.18	45	\$0.78	15%	50%	\$0.20	0.45	0.50	Building Energy Simulation Tool
Large Office	Ventilation	Insulation - Wall Cavity	sqft wall	New	0.12	45	\$0.78	15%	50%	\$0.20	0.55	0.64	Building Energy Simulation Tool
Large Office	Cooling	HVAC - Duct Repair and Sealing	tonCool	New	16.09	18	\$0.57	15%	35%	\$0.00	0.35	0.41	Building Energy Simulation Tool
Large Office	Heating	HVAC - Duct Repair and Sealing	tonCool	New	5.74	18	\$0.57	15%	35%	\$0.00	0.08	0.09	Building Energy Simulation Tool
Large Office	Ventilation	HVAC - Duct Repair and Sealing	tonCool	New	3.83	18	\$0.57	15%	35%	\$0.00	0.09	0.11	Building Energy Simulation Tool
Large Office	Cooling	Windows - High Efficiency Glazing	sqft window	New	5.33	30	\$35.93	66%	66%	\$0.16	0.00	0.00	7th Power Plan
Large Office	Heating	Windows - High Efficiency Glazing	sqft window	New	9.01	30	\$35.93	66%	66%	\$0.16	0.00	0.00	7th Power Plan
Large Office	Ventilation	Windows - High Efficiency Glazing	sqft window	New	3.46	30	\$35.93	66%	66%	\$0.16	0.00	0.00	7th Power Plan
Large Office	Cooling	Chiller - Chilled Water Reset	ChillCtrl	New	3,044.49	10	\$884.85	15%	75%	\$0.03	0.16	0.21	AEG-BEST
Large Office	Cooling	Chiller - Chilled Water Variable-Flow System	HP cool	New	369.49	15	\$332.55	15%	75%	\$0.08	3.29	4.26	AEG-BEST
Large Office	Cooling	Chiller - Variable Speed Fans	HP fan	New	790.04	15	\$208.36	15%	75%	\$0.03	0.70	0.91	New Jersey TRM
Large Office	Cooling	Water-Cooled Chiller - Condenser Water Reset	ChillCtrl	New	26,045.73	10	\$884.85	15%	75%	\$0.00	0.50	0.67	AEG-BEST
Large Office	Cooling	HVAC - Economizer	HP cool	New	98.85	10	\$168.42	18%	75%	\$0.19	2.37	3.17	AEG-BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Large Office	Heating	Space Heating - Heat Recovery Ventilator	CFM	New	1.84	14	\$5.08	6%	75%	\$0.30	1.71	2.14	7th Power Plan
Large Office	Ventilation	Ventilation - ECM on VAV Boxes	sqft	New	0.34	18	\$0.25	15%	20%	\$0.06	0.74	0.86	7th Power Plan
Large Office	Ventilation	Ventilation - Variable Speed Control	sqft	New	0.03	15	\$181.39	19%	50%	\$478.90	0.29	0.39	AEG-BEST
Large Office	Ventilation	Ventilation - Demand Controlled	sqft	New	0.01	15	\$0.25	15%	75%	\$1.52	0.25	0.33	7th Power Plan
Large Office	Cooling	Destratification Fans (HVLS)	Strat Fan	New	2,971.02	15	\$7,270.90	15%	30%	\$0.10	0.98	1.27	AEG Research
Large Office	Heating	Destratification Fans (HVLS)	Strat Fan	New	4,676.46	15	\$7,270.90	15%	30%	\$0.10	0.93	1.15	AEG Research
Large Office	Cooling	RTU - Maintenance	tonCool	New	45.79	3	\$35.00	15%	45%	\$0.21	0.13	0.21	AEG Research
Large Office	Cooling	RTU - Advanced Controls	sqft	New	0.07	15	\$0.07	15%	45%	\$0.09	0.44	0.53	7th Power Plan
Large Office	Cooling	RTU - Evaporative Precooler	tonCool	New	92.81	15	\$681.62	15%	75%	\$0.65	3.77	4.36	AEG Research
Large Office	Cooling	Ductless Mini Split Heat Pump	tonCool	New	199.96	15	\$3,359.26	15%	25%	\$0.85	0.05	0.06	7th Power Plan
Large Office	Heating	Ductless Mini Split Heat Pump	tonCool	New	167.35	15	\$3,359.26	15%	25%	\$0.85	0.63	0.78	7th Power Plan
Large Office	Cooling	Thermostat - WiFi/Interactive	sqft	New	0.46	5	\$0.66	30%	40%	\$0.12	0.22	0.32	7th Power Plan
Large Office	Heating	Thermostat - WiFi/Interactive	sqft	New	0.37	5	\$0.66	30%	40%	\$0.12	0.11	0.15	7th Power Plan
Large Office	Ventilation	Thermostat - WiFi/Interactive	sqft	New	0.25	5	\$0.66	30%	40%	\$0.12	0.13	0.20	7th Power Plan
Large Office	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	New	2.68	10	\$8.35	25%	65%	\$0.20	0.01	0.02	Illinois TRM
Large Office	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	New	6.95	10	\$11.64	25%	65%	\$0.11	0.01	0.02	7th Power Plan
Large Office	Water Heating	Water Heater - High Efficiency Circulation Pump	WHUnits	New	42.82	15	\$36.75	15%	25%	\$0.05	0.02	0.03	Hawaii TRM
Large Office	Water Heating	Water Heater - Pipe Insulation	PipeFeet	New	217.14	15	\$14.88	1%	75%	\$0.00	0.25	0.46	AEG-BEST
Large Office	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	New	13.76	4	\$144.04	25%	65%	\$1.32	0.02	0.04	7th Power Plan
Large Office	Water Heating	Water Heater - Thermostat Setback	WHUnits	New	42.83	2	\$5.00	15%	75%	\$0.03	0.01	0.03	Illinois TRM
Large Office	Water Heating	Water Heater - Solar System	PipeFeet	New	754.90	20	\$215.28	1%	30%	\$0.01	0.35	0.64	AEG-BEST

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Large Office	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.25	15	\$0.35	11%	23%	\$0.10	2.68	3.65	7th Power Plan
Large Office	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.35	15	\$0.58	11%	23%	\$0.12	3.68	5.05	7th Power Plan
Large Office	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	New	120.81	15	\$54.41	1%	3%	\$0.03	0.04	0.06	7th Power Plan
Large Office	Interior Lighting	Interior Lighting - Timeclocks and Timers	occ sens	New	0.00	8	\$111.67	7%	15%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Large Office	Interior Lighting	Interior Lighting - Skylights	1000 sqft	New	0.00	15	\$1,006.35	18%	25%	\$0.00	0.00	0.00	AEG Research
Large Office	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	1000 sqft	New	162.68	16	\$1,807.69	5%	15%	\$0.74	0.43	0.69	7th Power Plan
Large Office	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	New	1,689.77	11	\$30.80	15%	50%	\$0.00	1.32	2.14	Illinois TRM
Large Office	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	ELtg Watts	New	0.82	8	\$0.63	15%	25%	\$0.07	0.58	1.11	7th Power Plan
Large Office	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	New	51.93	8	\$55.10	15%	25%	\$0.10	0.30	0.58	Pacific Gas and Electric Research
Large Office	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	New	63.42	7	\$3,400.00	15%	30%	\$5.23	0.48	0.96	AEG Research
Large Office	Refrigeration	Refrigeration - Anti-Sweat Heater	Fridge Feet	New	8.33	8	\$48.18	0%	0%	\$0.89	0.00	0.00	7th Power Plan
Large Office	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	New	11.85	4	\$10.44	0%	0%	\$0.23	0.00	0.00	Michigan Energy Measures Database
Large Office	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	New	118.27	16	\$165.20	0%	0%	\$0.14	0.00	0.00	7th Power Plan
Large Office	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	New	16.89	15	\$335.85	0%	0%	\$2.10	0.00	0.00	7th Power Plan
Large Office	Refrigeration	Refrigeration - Strip Curtain	WalkIn Door	New	13.79	2	\$10.41	0%	0%	\$0.36	0.00	0.00	7th Power Plan
Large Office	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	New	0.25	15	\$45.43	0%	0%	\$18.70	0.00	0.00	Annual Energy Outlook, 2015
Large Office	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	New	5.32	15	\$313.82	0%	0%	\$6.23	0.00	0.00	Annual Energy Outlook, 2015
Large Office	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	New	79.44	10	\$506.05	0%	0%	\$0.84	0.00	0.00	Vermont TRM
Large Office	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	New	5.85	6	\$45.41	0%	0%	\$1.46	0.00	0.00	7th Power Plan

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Large Office	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	New	0.47	8	\$3.72	0%	0%	\$1.21	0.00	0.00	7th Power Plan
Large Office	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	New	105.70	5	\$45.85	0%	0%	\$0.09	0.00	0.00	Illinois TRM
Large Office	Refrigeration	Grocery - ECMs for Display Cases	Fridge Case	New	24.25	16	\$165.20	0%	0%	\$0.70	0.00	0.00	7th Power Plan
Large Office	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	New	1,058.20	5	\$187.94	25%	75%	\$0.04	0.04	0.05	Illinois TRM
Large Office	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	New	3,261.06	18	\$8,526.67	25%	50%	\$0.22	1.41	1.65	7th Power Plan
Large Office	Office Equipment	Office Equipment - Smart Power Strips	Smart Strip	New	92.53	4	\$41.63	10%	50%	\$0.10	0.62	0.78	7th Power Plan
Large Office	Cooling	Lodging - Guest Room Controls	LodgUnit	New	151.43	15	\$260.00	0%	0%	\$0.29	0.00	0.00	AEG-BEST
Large Office	Heating	Lodging - Guest Room Controls	LodgUnit	New	-74.52	15	\$260.00	0%	0%	\$0.29	0.00	0.00	AEG-BEST
Large Office	Office Equipment	Data Center - Best Practice Measures	sqft	New	0.03	5	\$0.00	0%	0%	\$0.02	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Office	Cooling	Data Center - Commercially Available Measures	sqft	New	0.01	8	\$0.00	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Office	Ventilation	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Office	Interior Lighting	Data Center - Commercially Available Measures	sqft	New	0.02	8	\$0.00	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Office	Office Equipment	Data Center - Commercially Available Measures	sqft	New	0.01	8	\$0.00	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Office	Cooling	Data Center - Cutting Edge Measures	sqft	New	0.03	6	\$0.00	0%	0%	\$0.02	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Office	Office Equipment	Data Center - Cutting Edge Measures	sqft	New	0.00	6	\$0.00	0%	0%	\$0.02	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Office	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	New	4,894.07	18	\$4,092.80	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Large Office	Miscellaneous	Pool Pump - Timer	perBldg	New	0.00	10	\$85.22	15%	75%	\$0.00	0.00	0.00	Ontario Power TRM
Large Office	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	New	1,961.47	6	\$35.93	1%	3%	\$0.00	0.00	0.09	7th Power Plan
Large Office	Cooling	Advanced New Construction Designs	sqft	New	0.74	25	\$4.11	10%	30%	\$0.11	6.79	7.74	AEG Research

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Large Office	Heating	Advanced New Construction Designs	sqft	New	0.60	25	\$4.11	10%	30%	\$0.11	3.30	3.71	AEG Research
Large Office	Ventilation	Advanced New Construction Designs	sqft	New	0.41	25	\$4.11	10%	30%	\$0.11	4.12	4.83	AEG Research
Large Office	Water Heating	Advanced New Construction Designs	sqft	New	0.10	25	\$4.11	10%	30%	\$0.11	0.58	0.80	AEG Research
Large Office	Interior Lighting	Advanced New Construction Designs	sqft	New	0.50	25	\$4.11	10%	30%	\$0.11	4.62	5.93	AEG Research
Large Office	Exterior Lighting	Advanced New Construction Designs	sqft	New	0.21	25	\$4.11	10%	30%	\$0.11	1.97	2.62	AEG Research
Large Office	Cooling	Strategic Energy Management	sqft	New	0.11	3	\$0.19	3%	14%	\$0.10	0.06	0.09	AEG Research
Large Office	Heating	Strategic Energy Management	sqft	New	0.09	3	\$0.19	3%	14%	\$0.10	0.03	0.04	AEG Research
Large Office	Ventilation	Strategic Energy Management	sqft	New	0.06	3	\$0.19	3%	14%	\$0.10	0.03	0.05	AEG Research
Large Office	Water Heating	Strategic Energy Management	sqft	New	0.02	3	\$0.19	3%	14%	\$0.10	0.00	0.01	AEG Research
Large Office	Interior Lighting	Strategic Energy Management	sqft	New	0.08	3	\$0.19	3%	14%	\$0.10	0.04	0.08	AEG Research
Large Office	Exterior Lighting	Strategic Energy Management	sqft	New	0.03	3	\$0.19	3%	14%	\$0.10	0.02	0.04	AEG Research
Large Office	Refrigeration	Strategic Energy Management	sqft	New	0.01	3	\$0.19	3%	14%	\$0.10	0.00	0.00	AEG Research
Large Office	Office Equipment	Strategic Energy Management	sqft	New	0.10	3	\$0.19	3%	14%	\$0.10	0.06	0.08	AEG Research
Large Office	Cooling	Commissioning	sqft	New	0.15	3	\$0.67	14%	61%	\$0.34	0.33	0.50	AEG Research
Large Office	Heating	Commissioning	sqft	New	0.12	3	\$0.67	14%	61%	\$0.34	0.16	0.23	AEG Research
Large Office	Ventilation	Commissioning	sqft	New	0.09	3	\$0.67	14%	61%	\$0.34	0.20	0.30	AEG Research
Large Office	Water Heating	Commissioning	sqft	New	0.01	3	\$0.67	14%	61%	\$0.34	0.01	0.02	AEG Research
Large Office	Interior Lighting	Commissioning	sqft	New	0.09	3	\$0.67	14%	61%	\$0.34	0.19	0.39	AEG Research
Large Office	Exterior Lighting	Commissioning	sqft	New	0.04	3	\$0.67	14%	61%	\$0.34	0.08	0.18	AEG Research
Large Office	Refrigeration	Commissioning	sqft	New	0.01	3	\$0.67	14%	61%	\$0.34	0.03	0.04	AEG Research
Large Office	Cooling	Retrocommissioning	sqft	New	0.15	3	\$0.42	0%	0%	\$0.22	0.00	0.00	AEG Research
Large Office	Heating	Retrocommissioning	sqft	New	0.12	3	\$0.42	0%	0%	\$0.22	0.00	0.00	AEG Research

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Large Office	Ventilation	Retrocommissioning	sqft	New	0.09	3	\$0.42	0%	0%	\$0.22	0.00	0.00	AEG Research
Large Office	Water Heating	Retrocommissioning	sqft	New	0.01	3	\$0.42	0%	0%	\$0.22	0.00	0.00	AEG Research
Large Office	Interior Lighting	Retrocommissioning	sqft	New	0.09	3	\$0.42	0%	0%	\$0.22	0.00	0.00	AEG Research
Large Office	Exterior Lighting	Retrocommissioning	sqft	New	0.04	3	\$0.42	0%	0%	\$0.22	0.00	0.00	AEG Research
Large Office	Refrigeration	Retrocommissioning	sqft	New	0.01	3	\$0.42	0%	0%	\$0.22	0.00	0.00	AEG Research
Large Office	Interior Lighting	Fruit Storage - Lighting Controls	sqft	New	0.06	10	\$0.09	0%	0%	\$0.12	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Office	Refrigeration	Fruit Storage Refrigeration Retrofit	sqft	New	0.04	10	\$1.09	0%	0%	\$3.23	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Office	Refrigeration	Fruit Storage Refrigeration Tuneup	sqft	New	0.01	3	\$0.23	0%	0%	\$6.61	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Office	Refrigeration	Fruit Storage Retrofit - CO2 Scrub	sqft	New	0.02	10	\$3.13	0%	0%	\$19.13	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Office	Refrigeration	Fruit Storage Retrofit - Membrane	sqft	New	0.00	10	\$0.68	0%	0%	\$20.75	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Office	Cooling	Insulation - Ceiling	sqft roof	Existing	0.12	45	\$1.28	15%	35%	\$0.25	55.49	68.39	Building Energy Simulation Tool
Small Office	Heating	Insulation - Ceiling	sqft roof	Existing	0.22	45	\$1.28	15%	35%	\$0.25	56.49	68.26	Building Energy Simulation Tool
Small Office	Ventilation	Insulation - Ceiling	sqft roof	Existing	0.04	45	\$1.28	15%	35%	\$0.25	19.84	29.00	Building Energy Simulation Tool
Small Office	Cooling	Insulation - Ducting	sqft duct	Existing	0.28	20	\$0.84	15%	35%	\$0.00	30.86	37.96	Building Energy Simulation Tool
Small Office	Heating	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.84	15%	35%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Small Office	Ventilation	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.84	15%	35%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Small Office	Cooling	Building Shell - Cool Roofs	sqft roof	Existing	0.41	20	\$0.78	45%	50%	\$0.31	45.71	55.79	Building Energy Simulation Tool
Small Office	Heating	Building Shell - Cool Roofs	sqft roof	Existing	-0.15	20	\$0.78	45%	50%	\$0.31	-9.59	-11.47	Building Energy Simulation Tool
Small Office	Ventilation	Building Shell - Cool Roofs	sqft roof	Existing	-0.03	20	\$0.78	45%	50%	\$0.31	-3.41	-4.89	Building Energy Simulation Tool
Small Office	Cooling	Insulation - Wall Cavity	sqft wall	Existing	-0.21	45	\$0.78	15%	35%	\$0.08	-34.23	-41.90	Building Energy Simulation Tool

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Small Office	Heating	Insulation - Wall Cavity	sqft wall	Existing	0.82	45	\$0.78	15%	35%	\$0.08	76.88	91.82	Building Energy Simulation Tool
Small Office	Ventilation	Insulation - Wall Cavity	sqft wall	Existing	0.16	45	\$0.78	15%	35%	\$0.08	27.32	39.19	Building Energy Simulation Tool
Small Office	Cooling	HVAC - Duct Repair and Sealing	tonCool	Existing	3.86	18	\$0.57	15%	50%	\$10.00	8.04	10.82	Building Energy Simulation Tool
Small Office	Heating	HVAC - Duct Repair and Sealing	tonCool	Existing	-4.81	18	\$0.57	15%	50%	\$10.00	-5.66	-7.58	Building Energy Simulation Tool
Small Office	Ventilation	HVAC - Duct Repair and Sealing	tonCool	Existing	-1.02	18	\$0.57	15%	50%	\$10.00	-2.27	-3.48	Building Energy Simulation Tool
Small Office	Cooling	Windows - High Efficiency Glazing	sqft window	Existing	5.93	30	\$35.93	48%	48%	\$0.18	0.00	0.00	7th Power Plan
Small Office	Heating	Windows - High Efficiency Glazing	sqft window	Existing	9.45	30	\$35.93	48%	48%	\$0.18	0.00	0.00	7th Power Plan
Small Office	Ventilation	Windows - High Efficiency Glazing	sqft window	Existing	1.05	30	\$35.93	48%	48%	\$0.18	0.00	0.00	7th Power Plan
Small Office	Cooling	Chiller - Chilled Water Reset	ChillCtrl	Existing	0.00	10	\$884.85	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Small Office	Cooling	Chiller - Chilled Water Variable-Flow System	HP cool	Existing	0.00	15	\$332.55	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Small Office	Cooling	Chiller - Variable Speed Fans	HP fan	Existing	0.00	15	\$208.36	15%	75%	\$0.00	0.00	0.00	New Jersey TRM
Small Office	Cooling	Water-Cooled Chiller - Condenser Water Reset	ChillCtrl	Existing	0.00	10	\$884.85	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Small Office	Cooling	HVAC - Economizer	HP cool	Existing	149.93	10	\$168.42	18%	75%	\$0.15	431.47	582.65	AEG-BEST
Small Office	Heating	Space Heating - Heat Recovery Ventilator	CFM	Existing	2.49	14	\$5.08	3%	75%	\$0.22	221.78	293.14	7th Power Plan
Small Office	Ventilation	Ventilation - ECM on VAV Boxes	sqft	Existing	0.13	18	\$0.25	15%	20%	\$0.15	15.60	22.65	7th Power Plan
Small Office	Ventilation	Ventilation - Variable Speed Control	sqft	Existing	0.04	15	\$181.39	13%	25%	\$428.01	10.18	18.23	AEG-BEST
Small Office	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.01	15	\$0.25	15%	25%	\$3.74	1.41	2.47	7th Power Plan
Small Office	Cooling	Destratification Fans (HVLS)	Strat Fan	Existing	4,435.13	15	\$7,270.90	15%	15%	\$0.07	0.00	0.00	AEG Research
Small Office	Heating	Destratification Fans (HVLS)	Strat Fan	Existing	6,312.02	15	\$7,270.90	15%	15%	\$0.07	0.00	0.00	AEG Research
Small Office	Cooling	RTU - Maintenance	tonCool	Existing	70.07	3	\$35.00	15%	45%	\$0.15	105.96	155.38	AEG Research
Small Office	Cooling	RTU - Advanced Controls	sqft	Existing	0.22	15	\$0.07	15%	45%	\$0.03	109.55	132.75	7th Power Plan

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Small Office	Cooling	RTU - Evaporative Precooler	tonCool	Existing	143.12	15	\$681.62	15%	75%	\$0.47	391.09	466.93	AEG Research
Small Office	Cooling	Ductless Mini Split Heat Pump	tonCool	Existing	305.94	15	\$3,359.26	15%	75%	\$0.61	30.31	43.79	7th Power Plan
Small Office	Heating	Ductless Mini Split Heat Pump	tonCool	Existing	234.24	15	\$3,359.26	15%	75%	\$0.61	296.97	392.69	7th Power Plan
Small Office	Cooling	Thermostat - WiFi/Interactive	sqft	Existing	0.67	5	\$0.66	30%	40%	\$0.10	141.66	185.36	7th Power Plan
Small Office	Heating	Thermostat - WiFi/Interactive	sqft	Existing	0.50	5	\$0.66	30%	40%	\$0.10	61.77	77.16	7th Power Plan
Small Office	Ventilation	Thermostat - WiFi/Interactive	sqft	Existing	0.10	5	\$0.66	30%	40%	\$0.10	22.57	33.76	7th Power Plan
Small Office	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	Existing	1.53	10	\$8.35	25%	65%	\$0.43	1.09	2.68	Illinois TRM
Small Office	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	Existing	3.97	10	\$11.64	25%	65%	\$0.23	1.41	3.46	7th Power Plan
Small Office	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	Existing	53.47	15	\$36.75	0%	0%	\$0.05	0.00	0.00	Hawaii TRM
Small Office	Water Heating	Water Heater - Pipe Insulation	PipeFeet	Existing	43.19	15	\$14.88	16%	75%	\$0.02	19.45	42.51	AEG-BEST
Small Office	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	Existing	7.91	4	\$144.04	25%	65%	\$2.79	5.49	13.12	7th Power Plan
Small Office	Water Heating	Water Heater - Thermostat Setback	WHunits	Existing	51.29	2	\$5.00	15%	75%	\$0.03	9.51	22.15	Illinois TRM
Small Office	Water Heating	Water Heater - Solar System	PipeFeet	Existing	148.65	20	\$215.28	1%	30%	\$0.08	32.38	72.42	AEG-BEST
Small Office	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.30	15	\$0.35	3%	23%	\$0.09	177.34	253.83	7th Power Plan
Small Office	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.41	15	\$0.58	3%	23%	\$0.11	239.16	349.96	7th Power Plan
Small Office	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	Existing	87.17	15	\$54.41	1%	3%	\$0.05	5.12	9.33	7th Power Plan
Small Office	Interior Lighting	Interior Lighting - Timeclocks and Timers	occ sens	Existing	0.00	8	\$111.67	7%	15%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Small Office	Interior Lighting	Interior Lighting - Skylights	1000 sqft	Existing	0.00	15	\$1,006.35	15%	25%	\$0.00	0.00	0.00	AEG Research
Small Office	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	1000 sqft	Existing	157.98	16	\$1,807.69	5%	15%	\$0.85	35.31	69.63	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Small Office	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	Existing	1,634.94	11	\$30.80	15%	50%	\$0.00	135.96	244.32	Illinois TRM
Small Office	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	ELtg Watts	Existing	2.19	8	\$0.63	15%	25%	\$0.03	104.68	212.11	7th Power Plan
Small Office	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	Existing	74.89	8	\$55.10	15%	25%	\$0.08	52.93	110.56	Pacific Gas and Electric Research
Small Office	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	Existing	90.06	7	\$3,400.00	15%	30%	\$4.33	93.69	202.72	AEG Research
Small Office	Refrigeration	Refrigeration - Anti-Sweat Heater	Fridge Feet	Existing	4.05	8	\$48.18	0%	0%	\$1.83	0.00	0.00	7th Power Plan
Small Office	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	Existing	7.38	4	\$10.44	0%	0%	\$0.37	0.00	0.00	Michigan Energy Measures Database
Small Office	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	Existing	48.17	16	\$165.20	0%	0%	\$0.35	0.00	0.00	7th Power Plan
Small Office	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	Existing	4.83	15	\$335.85	0%	0%	\$7.31	0.00	0.00	7th Power Plan
Small Office	Refrigeration	Refrigeration - Strip Curtain	Walkin Door	Existing	6.54	2	\$10.41	0%	0%	\$0.75	0.00	0.00	7th Power Plan
Small Office	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBtuh	Existing	0.07	15	\$45.43	0%	0%	\$65.01	0.00	0.00	Annual Energy Outlook, 2015
Small Office	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	Existing	1.46	15	\$313.82	0%	0%	\$21.66	0.00	0.00	Annual Energy Outlook, 2015
Small Office	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	Existing	32.36	10	\$506.05	0%	0%	\$2.06	0.00	0.00	Vermont TRM
Small Office	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	Existing	2.56	6	\$45.41	0%	0%	\$3.33	0.00	0.00	7th Power Plan
Small Office	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	Existing	0.21	8	\$3.72	0%	0%	\$2.76	0.00	0.00	7th Power Plan
Small Office	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	Existing	45.89	5	\$45.85	0%	0%	\$0.22	0.00	0.00	Illinois TRM
Small Office	Refrigeration	Grocery - ECMs for Display Cases	Fridge Case	Existing	10.66	16	\$165.20	0%	0%	\$1.58	0.00	0.00	7th Power Plan
Small Office	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	Existing	1,075.51	5	\$187.94	25%	75%	\$0.04	1.95	2.50	Illinois TRM
Small Office	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	Existing	1,265.25	18	\$8,526.67	25%	50%	\$0.55	29.27	43.18	7th Power Plan
Small Office	Office Equipment	Office Equipment - Smart Power Strips	Smart Strip	Existing	53.80	4	\$41.63	10%	50%	\$0.18	128.80	153.27	7th Power Plan

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Small Office	Cooling	Lodging - Guest Room Controls	LodgUnit	Existing	231.71	15	\$260.00	0%	0%	\$0.21	0.00	0.00	AEG-BEST
Small Office	Heating	Lodging - Guest Room Controls	LodgUnit	Existing	-106.15	15	\$260.00	0%	0%	\$0.21	0.00	0.00	AEG-BEST
Small Office	Office Equipment	Data Center - Best Practice Measures	sqft	Existing	0.05	5	\$0.00	0%	0%	\$0.02	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Office	Cooling	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.00	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Office	Ventilation	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.00	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Office	Interior Lighting	Data Center - Commercially Available Measures	sqft	Existing	0.02	8	\$0.00	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Office	Office Equipment	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.00	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Office	Cooling	Data Center - Cutting Edge Measures	sqft	Existing	0.05	6	\$0.00	0%	0%	\$0.02	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Office	Office Equipment	Data Center - Cutting Edge Measures	sqft	Existing	0.00	6	\$0.00	0%	0%	\$0.02	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Office	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	Existing	374.34	18	\$4,092.80	0%	0%	\$0.88	0.00	0.00	7th Power Plan
Small Office	Miscellaneous	Pool Pump - Timer	perBldg	Existing	0.00	10	\$85.22	15%	75%	\$0.00	0.00	0.00	Ontario Power TRM
Small Office	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	Existing	1,151.75	6	\$35.93	1%	3%	\$0.01	0.00	24.70	7th Power Plan
Small Office	Cooling	Advanced New Construction Designs	sqft	Existing	1.09	25	\$4.11	0%	0%	\$0.10	0.00	0.00	AEG Research
Small Office	Heating	Advanced New Construction Designs	sqft	Existing	0.79	25	\$4.11	0%	0%	\$0.10	0.00	0.00	AEG Research
Small Office	Ventilation	Advanced New Construction Designs	sqft	Existing	0.16	25	\$4.11	0%	0%	\$0.10	0.00	0.00	AEG Research
Small Office	Water Heating	Advanced New Construction Designs	sqft	Existing	0.10	25	\$4.11	0%	0%	\$0.10	0.00	0.00	AEG Research
Small Office	Interior Lighting	Advanced New Construction Designs	sqft	Existing	0.60	25	\$4.11	0%	0%	\$0.10	0.00	0.00	AEG Research
Small Office	Exterior Lighting	Advanced New Construction Designs	sqft	Existing	0.28	25	\$4.11	0%	0%	\$0.10	0.00	0.00	AEG Research
Small Office	Cooling	Strategic Energy Management	sqft	Existing	0.16	3	\$0.18	3%	14%	\$0.10	40.53	60.33	AEG Research

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Small Office	Heating	Strategic Energy Management	sqft	Existing	0.11	3	\$0.18	3%	14%	\$0.10	16.18	24.04	AEG Research
Small Office	Ventilation	Strategic Energy Management	sqft	Existing	0.02	3	\$0.18	3%	14%	\$0.10	6.48	11.36	AEG Research
Small Office	Water Heating	Strategic Energy Management	sqft	Existing	0.02	3	\$0.18	3%	14%	\$0.10	2.43	5.74	AEG Research
Small Office	Interior Lighting	Strategic Energy Management	sqft	Existing	0.09	3	\$0.18	3%	14%	\$0.10	23.09	44.35	AEG Research
Small Office	Exterior Lighting	Strategic Energy Management	sqft	Existing	0.04	3	\$0.18	3%	14%	\$0.10	10.53	22.34	AEG Research
Small Office	Refrigeration	Strategic Energy Management	sqft	Existing	0.00	3	\$0.18	3%	14%	\$0.10	0.80	0.57	AEG Research
Small Office	Office Equipment	Strategic Energy Management	sqft	Existing	0.06	3	\$0.18	3%	14%	\$0.10	19.27	23.40	AEG Research
Small Office	Cooling	Commissioning	sqft	Existing	0.22	3	\$0.74	0%	0%	\$0.36	0.00	0.00	AEG Research
Small Office	Heating	Commissioning	sqft	Existing	0.15	3	\$0.74	0%	0%	\$0.36	0.00	0.00	AEG Research
Small Office	Ventilation	Commissioning	sqft	Existing	0.03	3	\$0.74	0%	0%	\$0.36	0.00	0.00	AEG Research
Small Office	Water Heating	Commissioning	sqft	Existing	0.01	3	\$0.74	0%	0%	\$0.36	0.00	0.00	AEG Research
Small Office	Interior Lighting	Commissioning	sqft	Existing	0.10	3	\$0.74	0%	0%	\$0.36	0.00	0.00	AEG Research
Small Office	Exterior Lighting	Commissioning	sqft	Existing	0.05	3	\$0.74	0%	0%	\$0.36	0.00	0.00	AEG Research
Small Office	Refrigeration	Commissioning	sqft	Existing	0.00	3	\$0.74	0%	0%	\$0.36	0.00	0.00	AEG Research
Small Office	Cooling	Retrocommissioning	sqft	Existing	0.22	3	\$0.47	14%	61%	\$0.23	238.52	356.14	AEG Research
Small Office	Heating	Retrocommissioning	sqft	Existing	0.16	3	\$0.47	14%	61%	\$0.23	95.19	141.91	AEG Research
Small Office	Ventilation	Retrocommissioning	sqft	Existing	0.03	3	\$0.47	14%	61%	\$0.23	38.11	67.07	AEG Research
Small Office	Water Heating	Retrocommissioning	sqft	Existing	0.01	3	\$0.47	14%	61%	\$0.23	4.76	11.29	AEG Research
Small Office	Interior Lighting	Retrocommissioning	sqft	Existing	0.11	3	\$0.47	14%	61%	\$0.23	113.25	218.20	AEG Research
Small Office	Exterior Lighting	Retrocommissioning	sqft	Existing	0.05	3	\$0.47	14%	61%	\$0.23	51.62	109.91	AEG Research
Small Office	Refrigeration	Retrocommissioning	sqft	Existing	0.00	3	\$0.47	14%	61%	\$0.23	7.81	5.65	AEG Research
Small Office	Interior Lighting	Fruit Storage - Lighting Controls	sqft	Existing	0.07	10	\$0.09	0%	0%	\$0.11	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Small Office	Refrigeration	Fruit Storage Refrigeration Retrofit	sqft	Existing	0.01	10	\$1.09	0%	0%	\$10.88	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Office	Refrigeration	Fruit Storage Refrigeration Tuneup	sqft	Existing	0.00	3	\$0.23	0%	0%	\$22.32	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Office	Refrigeration	Fruit Storage Retrofit - CO2 Scrub	sqft	Existing	0.01	10	\$3.13	0%	0%	\$64.53	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Office	Refrigeration	Fruit Storage Retrofit - Membrane	sqft	Existing	0.00	10	\$0.68	0%	0%	\$70.03	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Office	Cooling	Insulation - Ceiling	sqft roof	New	0.00	45	\$1.28	15%	50%	\$0.50	0.00	0.00	Building Energy Simulation Tool
Small Office	Heating	Insulation - Ceiling	sqft roof	New	0.16	45	\$1.28	15%	50%	\$0.50	19.48	21.93	Building Energy Simulation Tool
Small Office	Ventilation	Insulation - Ceiling	sqft roof	New	0.02	45	\$1.28	15%	50%	\$0.50	6.29	7.78	Building Energy Simulation Tool
Small Office	Cooling	Insulation - Ducting	sqft duct	New	0.48	20	\$0.84	15%	50%	\$0.00	25.28	28.77	Building Energy Simulation Tool
Small Office	Heating	Insulation - Ducting	sqft duct	New	0.00	20	\$0.84	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Small Office	Ventilation	Insulation - Ducting	sqft duct	New	0.00	20	\$0.84	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Small Office	Cooling	Building Shell - Cool Roofs	sqft roof	New	0.09	20	\$0.78	45%	50%	\$4.28	2.85	3.24	Building Energy Simulation Tool
Small Office	Heating	Building Shell - Cool Roofs	sqft roof	New	-0.07	20	\$0.78	45%	50%	\$4.28	-1.14	-1.29	Building Energy Simulation Tool
Small Office	Ventilation	Building Shell - Cool Roofs	sqft roof	New	-0.01	20	\$0.78	45%	50%	\$4.28	-0.36	-0.45	Building Energy Simulation Tool
Small Office	Cooling	Insulation - Wall Cavity	sqft wall	New	-0.02	45	\$0.78	15%	50%	\$2.74	-1.43	-1.63	Building Energy Simulation Tool
Small Office	Heating	Insulation - Wall Cavity	sqft wall	New	0.03	45	\$0.78	15%	50%	\$2.74	1.51	1.70	Building Energy Simulation Tool
Small Office	Ventilation	Insulation - Wall Cavity	sqft wall	New	0.00	45	\$0.78	15%	50%	\$2.74	0.48	0.59	Building Energy Simulation Tool
Small Office	Cooling	HVAC - Duct Repair and Sealing	tonCool	New	22.22	18	\$0.57	15%	35%	\$0.00	7.26	8.31	Building Energy Simulation Tool
Small Office	Heating	HVAC - Duct Repair and Sealing	tonCool	New	15.40	18	\$0.57	15%	35%	\$0.00	2.82	3.20	Building Energy Simulation Tool
Small Office	Ventilation	HVAC - Duct Repair and Sealing	tonCool	New	2.16	18	\$0.57	15%	35%	\$0.00	0.90	1.12	Building Energy Simulation Tool

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Small Office	Cooling	Windows - High Efficiency Glazing	sqft window	New	4.96	30	\$35.93	66%	66%	\$0.20	0.00	0.00	7th Power Plan
Small Office	Heating	Windows - High Efficiency Glazing	sqft window	New	8.53	30	\$35.93	66%	66%	\$0.20	0.00	0.00	7th Power Plan
Small Office	Ventilation	Windows - High Efficiency Glazing	sqft window	New	0.70	30	\$35.93	66%	66%	\$0.20	0.00	0.00	7th Power Plan
Small Office	Cooling	Chiller - Chilled Water Reset	ChillCtrl	New	0.00	10	\$884.85	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Small Office	Cooling	Chiller - Chilled Water Variable-Flow System	HP cool	New	0.00	15	\$332.55	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Small Office	Cooling	Chiller - Variable Speed Fans	HP fan	New	0.00	15	\$208.36	15%	75%	\$0.00	0.00	0.00	New Jersey TRM
Small Office	Cooling	Water-Cooled Chiller - Condenser Water Reset	ChillCtrl	New	0.00	10	\$884.85	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Small Office	Cooling	HVAC - Economizer	HP cool	New	119.87	10	\$168.42	18%	75%	\$0.18	42.68	55.64	AEG-BEST
Small Office	Heating	Space Heating - Heat Recovery Ventilator	CFM	New	2.30	14	\$5.08	6%	75%	\$0.24	29.55	36.85	7th Power Plan
Small Office	Ventilation	Ventilation - ECM on VAV Boxes	sqft	New	0.09	18	\$0.25	15%	20%	\$0.19	3.21	4.01	7th Power Plan
Small Office	Ventilation	Ventilation - Variable Speed Control	sqft	New	0.02	15	\$181.39	19%	25%	\$533.35	0.64	0.94	AEG-BEST
Small Office	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.25	15%	25%	\$4.66	0.18	0.27	7th Power Plan
Small Office	Cooling	Destratification Fans (HVLS)	Strat Fan	New	3,552.97	15	\$7,270.90	15%	15%	\$0.08	0.00	0.00	AEG Research
Small Office	Heating	Destratification Fans (HVLS)	Strat Fan	New	5,768.90	15	\$7,270.90	15%	15%	\$0.08	0.00	0.00	AEG Research
Small Office	Cooling	RTU - Maintenance	tonCool	New	56.22	3	\$35.00	15%	45%	\$0.19	3.31	4.90	AEG Research
Small Office	Cooling	RTU - Advanced Controls	sqft	New	0.17	15	\$0.07	15%	45%	\$0.04	21.38	25.29	7th Power Plan
Small Office	Cooling	RTU - Evaporative Precooler	tonCool	New	114.07	15	\$681.62	15%	75%	\$0.58	93.89	107.78	AEG Research
Small Office	Cooling	Ductless Mini Split Heat Pump	tonCool	New	257.66	15	\$3,359.26	15%	75%	\$0.69	5.23	6.67	7th Power Plan
Small Office	Heating	Ductless Mini Split Heat Pump	tonCool	New	222.41	15	\$3,359.26	15%	75%	\$0.69	54.84	68.02	7th Power Plan
Small Office	Cooling	Thermostat - WiFi/Interactive	sqft	New	0.55	5	\$0.66	30%	40%	\$0.12	3.87	5.49	7th Power Plan
Small Office	Heating	Thermostat - WiFi/Interactive	sqft	New	0.46	5	\$0.66	30%	40%	\$0.12	1.85	2.51	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Small Office	Ventilation	Thermostat - WiFi/Interactive	sqft	New	0.07	5	\$0.66	30%	40%	\$0.12	0.59	0.96	7th Power Plan
Small Office	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	New	1.28	10	\$8.35	25%	65%	\$0.42	0.12	0.25	Illinois TRM
Small Office	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	New	3.31	10	\$11.64	25%	65%	\$0.23	0.16	0.33	7th Power Plan
Small Office	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	New	43.79	15	\$36.75	0%	0%	\$0.05	0.00	0.00	Hawaii TRM
Small Office	Water Heating	Water Heater - Pipe Insulation	PipeFeet	New	35.05	15	\$14.88	1%	75%	\$0.02	3.70	6.84	AEG-BEST
Small Office	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	New	6.68	4	\$144.04	25%	65%	\$2.73	0.26	0.60	7th Power Plan
Small Office	Water Heating	Water Heater - Thermostat Setback	WHunits	New	42.90	2	\$5.00	15%	75%	\$0.03	0.16	0.40	Illinois TRM
Small Office	Water Heating	Water Heater - Solar System	PipeFeet	New	121.73	20	\$215.28	1%	30%	\$0.08	5.18	9.48	AEG-BEST
Small Office	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.28	15	\$0.35	11%	23%	\$0.09	45.92	62.27	7th Power Plan
Small Office	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.39	15	\$0.58	11%	23%	\$0.11	63.16	86.09	7th Power Plan
Small Office	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	New	81.11	15	\$54.41	1%	3%	\$0.05	0.67	1.09	7th Power Plan
Small Office	Interior Lighting	Interior Lighting - Timeclocks and Timers	occ sens	New	0.00	8	\$111.67	7%	15%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Small Office	Interior Lighting	Interior Lighting - Skylights	1000 sqft	New	0.00	15	\$1,006.35	18%	25%	\$0.00	0.00	0.00	AEG Research
Small Office	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	1000 sqft	New	140.92	16	\$1,807.69	5%	15%	\$0.86	5.71	9.12	7th Power Plan
Small Office	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	New	1,454.00	11	\$30.80	15%	50%	\$0.00	17.47	28.04	Illinois TRM
Small Office	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	ELtg Watts	New	1.75	8	\$0.63	15%	25%	\$0.03	9.66	19.00	7th Power Plan
Small Office	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	New	60.99	8	\$55.10	15%	25%	\$0.08	5.09	9.97	Pacific Gas and Electric Research
Small Office	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	New	74.78	7	\$3,400.00	15%	30%	\$4.36	8.09	16.53	AEG Research
Small Office	Refrigeration	Refrigeration - Anti-Sweat Heater	Fridge Feet	New	3.37	8	\$48.18	0%	0%	\$2.21	0.00	0.00	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Small Office	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	New	6.66	4	\$10.44	0%	0%	\$0.41	0.00	0.00	Michigan Energy Measures Database
Small Office	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	New	43.08	16	\$165.20	0%	0%	\$0.39	0.00	0.00	7th Power Plan
Small Office	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	New	4.49	15	\$335.85	0%	0%	\$7.93	0.00	0.00	7th Power Plan
Small Office	Refrigeration	Refrigeration - Strip Curtain	Walkin Door	New	5.71	2	\$10.41	0%	0%	\$0.86	0.00	0.00	7th Power Plan
Small Office	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	New	0.07	15	\$45.43	0%	0%	\$70.49	0.00	0.00	Annual Energy Outlook, 2015
Small Office	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	New	1.40	15	\$313.82	0%	0%	\$23.49	0.00	0.00	Annual Energy Outlook, 2015
Small Office	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	New	28.94	10	\$506.05	0%	0%	\$2.32	0.00	0.00	Vermont TRM
Small Office	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	New	2.44	6	\$45.41	0%	0%	\$3.52	0.00	0.00	7th Power Plan
Small Office	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	New	0.20	8	\$3.72	0%	0%	\$2.92	0.00	0.00	7th Power Plan
Small Office	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	New	44.30	5	\$45.85	0%	0%	\$0.22	0.00	0.00	Illinois TRM
Small Office	Refrigeration	Grocery - ECMs for Display Cases	Fridge Case	New	10.12	16	\$165.20	0%	0%	\$1.67	0.00	0.00	7th Power Plan
Small Office	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	New	1,059.60	5	\$187.94	25%	75%	\$0.04	0.08	0.11	Illinois TRM
Small Office	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	New	827.62	18	\$8,526.67	25%	50%	\$0.68	5.95	7.55	7th Power Plan
Small Office	Office Equipment	Office Equipment - Smart Power Strips	Smart Strip	New	52.20	4	\$41.63	10%	50%	\$0.18	5.44	6.64	7th Power Plan
Small Office	Cooling	Lodging - Guest Room Controls	LodgUnit	New	189.40	15	\$260.00	0%	0%	\$0.28	0.00	0.00	AEG-BEST
Small Office	Heating	Lodging - Guest Room Controls	LodgUnit	New	-97.72	15	\$260.00	0%	0%	\$0.28	0.00	0.00	AEG-BEST
Small Office	Office Equipment	Data Center - Best Practice Measures	sqft	New	0.05	5	\$0.00	0%	0%	\$0.02	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Office	Cooling	Data Center - Commercially Available Measures	sqft	New	0.01	8	\$0.00	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Office	Ventilation	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx

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Small Office	Interior Lighting	Data Center - Commercially Available Measures	sqft	New	0.02	8	\$0.00	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Office	Office Equipment	Data Center - Commercially Available Measures	sqft	New	0.01	8	\$0.00	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Office	Cooling	Data Center - Cutting Edge Measures	sqft	New	0.04	6	\$0.00	0%	0%	\$0.02	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Office	Office Equipment	Data Center - Cutting Edge Measures	sqft	New	0.00	6	\$0.00	0%	0%	\$0.02	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Office	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	New	246.00	18	\$4,092.80	0%	0%	\$1.09	0.00	0.00	7th Power Plan
Small Office	Miscellaneous	Pool Pump - Timer	perBldg	New	0.00	10	\$85.22	15%	75%	\$0.00	0.00	0.00	Ontario Power TRM
Small Office	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	New	1,151.75	6	\$35.93	1%	3%	\$0.01	0.00	1.31	7th Power Plan
Small Office	Cooling	Advanced New Construction Designs	sqft	New	0.89	25	\$4.11	10%	25%	\$0.11	91.09	103.28	AEG Research
Small Office	Heating	Advanced New Construction Designs	sqft	New	0.74	25	\$4.11	10%	25%	\$0.11	42.25	47.64	AEG Research
Small Office	Ventilation	Advanced New Construction Designs	sqft	New	0.11	25	\$4.11	10%	25%	\$0.11	13.64	16.95	AEG Research
Small Office	Water Heating	Advanced New Construction Designs	sqft	New	0.08	25	\$4.11	10%	25%	\$0.11	6.43	8.87	AEG Research
Small Office	Interior Lighting	Advanced New Construction Designs	sqft	New	0.56	25	\$4.11	10%	25%	\$0.11	59.45	75.68	AEG Research
Small Office	Exterior Lighting	Advanced New Construction Designs	sqft	New	0.23	25	\$4.11	10%	25%	\$0.11	24.78	33.14	AEG Research
Small Office	Cooling	Strategic Energy Management	sqft	New	0.13	3	\$0.17	3%	14%	\$0.10	0.99	1.45	AEG Research
Small Office	Heating	Strategic Energy Management	sqft	New	0.11	3	\$0.17	3%	14%	\$0.10	0.46	0.66	AEG Research
Small Office	Ventilation	Strategic Energy Management	sqft	New	0.02	3	\$0.17	3%	14%	\$0.10	0.15	0.25	AEG Research
Small Office	Water Heating	Strategic Energy Management	sqft	New	0.01	3	\$0.17	3%	14%	\$0.10	0.07	0.17	AEG Research
Small Office	Interior Lighting	Strategic Energy Management	sqft	New	0.09	3	\$0.17	3%	14%	\$0.10	0.66	1.36	AEG Research
Small Office	Exterior Lighting	Strategic Energy Management	sqft	New	0.04	3	\$0.17	3%	14%	\$0.10	0.28	0.65	AEG Research

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Small Office	Refrigeration	Strategic Energy Management	sqft	New	0.00	3	\$0.17	3%	14%	\$0.10	0.02	0.01	AEG Research
Small Office	Office Equipment	Strategic Energy Management	sqft	New	0.06	3	\$0.17	3%	14%	\$0.10	0.53	0.66	AEG Research
Small Office	Cooling	Commissioning	sqft	New	0.18	3	\$0.68	14%	61%	\$0.36	5.83	8.56	AEG Research
Small Office	Heating	Commissioning	sqft	New	0.15	3	\$0.68	14%	61%	\$0.36	2.69	3.87	AEG Research
Small Office	Ventilation	Commissioning	sqft	New	0.02	3	\$0.68	14%	61%	\$0.36	0.89	1.50	AEG Research
Small Office	Water Heating	Commissioning	sqft	New	0.01	3	\$0.68	14%	61%	\$0.36	0.14	0.34	AEG Research
Small Office	Interior Lighting	Commissioning	sqft	New	0.10	3	\$0.68	14%	61%	\$0.36	3.26	6.71	AEG Research
Small Office	Exterior Lighting	Commissioning	sqft	New	0.04	3	\$0.68	14%	61%	\$0.36	1.35	3.19	AEG Research
Small Office	Refrigeration	Commissioning	sqft	New	0.00	3	\$0.68	14%	61%	\$0.36	0.18	0.11	AEG Research
Small Office	Cooling	Retrocommissioning	sqft	New	0.18	3	\$0.43	0%	0%	\$0.23	0.00	0.00	AEG Research
Small Office	Heating	Retrocommissioning	sqft	New	0.15	3	\$0.43	0%	0%	\$0.23	0.00	0.00	AEG Research
Small Office	Ventilation	Retrocommissioning	sqft	New	0.02	3	\$0.43	0%	0%	\$0.23	0.00	0.00	AEG Research
Small Office	Water Heating	Retrocommissioning	sqft	New	0.01	3	\$0.43	0%	0%	\$0.23	0.00	0.00	AEG Research
Small Office	Interior Lighting	Retrocommissioning	sqft	New	0.10	3	\$0.43	0%	0%	\$0.23	0.00	0.00	AEG Research
Small Office	Exterior Lighting	Retrocommissioning	sqft	New	0.04	3	\$0.43	0%	0%	\$0.23	0.00	0.00	AEG Research
Small Office	Refrigeration	Retrocommissioning	sqft	New	0.00	3	\$0.43	0%	0%	\$0.23	0.00	0.00	AEG Research
Small Office	Interior Lighting	Fruit Storage - Lighting Controls	sqft	New	0.07	10	\$0.09	0%	0%	\$0.11	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Office	Refrigeration	Fruit Storage Refrigeration Retrofit	sqft	New	0.01	10	\$1.09	0%	0%	\$13.36	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Office	Refrigeration	Fruit Storage Refrigeration Tuneup	sqft	New	0.00	3	\$0.23	0%	0%	\$27.39	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Office	Refrigeration	Fruit Storage Retrofit - CO2 Scrub	sqft	New	0.01	10	\$3.13	0%	0%	\$79.20	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Office	Refrigeration	Fruit Storage Retrofit - Membrane	sqft	New	0.00	10	\$0.68	0%	0%	\$85.94	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Retail	Cooling	Insulation - Ceiling	sqft roof	Existing	0.00	45	\$1.28	15%	35%	\$0.08	0.00	0.00	Building Energy Simulation Tool

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Large Retail	Heating	Insulation - Ceiling	sqft roof	Existing	0.62	45	\$1.28	15%	35%	\$0.08	2.98	3.57	Building Energy Simulation Tool
Large Retail	Ventilation	Insulation - Ceiling	sqft roof	Existing	0.49	45	\$1.28	15%	35%	\$0.08	8.25	11.98	Building Energy Simulation Tool
Large Retail	Cooling	Insulation - Ducting	sqft duct	Existing	0.19	20	\$0.84	15%	35%	\$0.00	3.92	4.78	Building Energy Simulation Tool
Large Retail	Heating	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.84	15%	35%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Large Retail	Ventilation	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.84	15%	35%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Large Retail	Cooling	Building Shell - Cool Roofs	sqft roof	Existing	0.94	20	\$0.78	45%	50%	\$0.47	3.22	3.91	Building Energy Simulation Tool
Large Retail	Heating	Building Shell - Cool Roofs	sqft roof	Existing	-0.42	20	\$0.78	45%	50%	\$0.47	-0.51	-0.60	Building Energy Simulation Tool
Large Retail	Ventilation	Building Shell - Cool Roofs	sqft roof	Existing	-0.33	20	\$0.78	45%	50%	\$0.47	-1.42	-2.02	Building Energy Simulation Tool
Large Retail	Cooling	Insulation - Wall Cavity	sqft wall	Existing	-0.51	45	\$0.78	15%	35%	\$0.06	-6.89	-8.38	Building Energy Simulation Tool
Large Retail	Heating	Insulation - Wall Cavity	sqft wall	Existing	0.85	45	\$0.78	15%	35%	\$0.06	4.05	4.80	Building Energy Simulation Tool
Large Retail	Ventilation	Insulation - Wall Cavity	sqft wall	Existing	0.67	45	\$0.78	15%	35%	\$0.06	11.36	16.19	Building Energy Simulation Tool
Large Retail	Cooling	HVAC - Duct Repair and Sealing	tonCool	Existing	4.77	18	\$0.57	15%	25%	\$0.01	0.39	0.48	Building Energy Simulation Tool
Large Retail	Heating	HVAC - Duct Repair and Sealing	tonCool	Existing	2.79	18	\$0.57	15%	25%	\$0.01	0.08	0.10	Building Energy Simulation Tool
Large Retail	Ventilation	HVAC - Duct Repair and Sealing	tonCool	Existing	2.18	18	\$0.57	15%	25%	\$0.01	0.22	0.32	Building Energy Simulation Tool
Large Retail	Cooling	Windows - High Efficiency Glazing	sqft window	Existing	7.58	30	\$35.93	48%	48%	\$0.12	0.00	0.00	7th Power Plan
Large Retail	Heating	Windows - High Efficiency Glazing	sqft window	Existing	11.39	30	\$35.93	48%	48%	\$0.12	0.00	0.00	7th Power Plan
Large Retail	Ventilation	Windows - High Efficiency Glazing	sqft window	Existing	5.05	30	\$35.93	48%	48%	\$0.12	0.00	0.00	7th Power Plan
Large Retail	Cooling	Chiller - Chilled Water Reset	ChillCtrl	Existing	2,877.43	10	\$884.85	15%	75%	\$0.04	0.16	0.21	AEG-BEST
Large Retail	Cooling	Chiller - Chilled Water Variable-Flow System	HP cool	Existing	291.44	15	\$332.55	15%	75%	\$0.12	2.25	2.98	AEG-BEST

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Large Retail	Cooling	Chiller - Variable Speed Fans	HP fan	Existing	683.49	15	\$208.36	15%	75%	\$0.03	0.53	0.70	New Jersey TRM
Large Retail	Cooling	Water-Cooled Chiller - Condenser Water Reset	ChillCtrl	Existing	22,774.40	10	\$884.85	15%	75%	\$0.01	0.48	0.64	AEG-BEST
Large Retail	Cooling	HVAC - Economizer	HP cool	Existing	101.09	10	\$168.42	18%	75%	\$0.22	36.76	48.81	AEG-BEST
Large Retail	Heating	Space Heating - Heat Recovery Ventilator	CFM	Existing	0.91	14	\$5.08	3%	75%	\$0.61	11.58	15.13	7th Power Plan
Large Retail	Ventilation	Ventilation - ECM on VAV Boxes	sqft	Existing	0.51	18	\$0.25	15%	20%	\$0.04	6.49	9.36	7th Power Plan
Large Retail	Ventilation	Ventilation - Variable Speed Control	sqft	Existing	0.05	15	\$181.39	13%	50%	\$308.87	4.77	8.51	AEG-BEST
Large Retail	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.02	15	\$0.25	15%	75%	\$0.98	3.48	6.05	7th Power Plan
Large Retail	Cooling	Destratification Fans (HVLS)	Strat Fan	Existing	4,038.84	15	\$7,270.90	15%	30%	\$0.18	11.37	15.54	AEG Research
Large Retail	Heating	Destratification Fans (HVLS)	Strat Fan	Existing	0.15	15	\$7,270.90	15%	30%	\$0.18	0.00	0.00	AEG Research
Large Retail	Cooling	RTU - Maintenance	tonCool	Existing	45.92	3	\$35.00	15%	45%	\$0.23	9.84	14.69	AEG Research
Large Retail	Cooling	RTU - Advanced Controls	sqft	Existing	0.10	15	\$0.07	15%	45%	\$0.07	5.38	6.50	7th Power Plan
Large Retail	Cooling	RTU - Evaporative Precooler	tonCool	Existing	94.90	15	\$681.62	15%	75%	\$0.71	37.70	44.84	AEG Research
Large Retail	Cooling	Ductless Mini Split Heat Pump	tonCool	Existing	202.24	15	\$3,359.26	15%	25%	\$0.92	0.60	0.86	7th Power Plan
Large Retail	Heating	Ductless Mini Split Heat Pump	tonCool	Existing	150.25	15	\$3,359.26	15%	25%	\$0.92	3.37	4.44	7th Power Plan
Large Retail	Cooling	Thermostat - WiFi/Interactive	sqft	Existing	0.63	5	\$0.66	30%	40%	\$0.09	12.34	15.97	7th Power Plan
Large Retail	Heating	Thermostat - WiFi/Interactive	sqft	Existing	0.47	5	\$0.66	30%	40%	\$0.09	3.26	4.03	7th Power Plan
Large Retail	Ventilation	Thermostat - WiFi/Interactive	sqft	Existing	0.38	5	\$0.66	30%	40%	\$0.09	9.40	13.95	7th Power Plan
Large Retail	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	Existing	26.01	10	\$8.35	25%	65%	\$0.03	0.16	0.38	Illinois TRM
Large Retail	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	Existing	67.35	10	\$11.64	25%	65%	\$0.01	0.20	0.49	7th Power Plan
Large Retail	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	Existing	51.50	15	\$36.75	0%	0%	\$0.05	0.00	0.00	Hawaii TRM
Large Retail	Water Heating	Water Heater - Pipe Insulation	PipeFeet	Existing	721.83	15	\$14.88	16%	75%	\$0.00	2.74	5.93	AEG-BEST

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Large Retail	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	Existing	133.88	4	\$144.04	25%	65%	\$0.17	0.79	1.84	7th Power Plan
Large Retail	Water Heating	Water Heater - Thermostat Setback	WHUnits	Existing	51.59	2	\$5.00	15%	75%	\$0.03	1.34	3.09	Illinois TRM
Large Retail	Water Heating	Water Heater - Solar System	PipeFeet	Existing	2,487.93	20	\$215.28	1%	30%	\$0.01	4.58	10.11	AEG-BEST
Large Retail	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.48	15	\$0.35	3%	23%	\$0.06	30.33	44.08	7th Power Plan
Large Retail	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.66	15	\$0.58	3%	23%	\$0.07	40.93	60.78	7th Power Plan
Large Retail	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	Existing	465.66	15	\$54.41	1%	3%	\$0.01	0.86	1.62	7th Power Plan
Large Retail	Interior Lighting	Interior Lighting - Timeclocks and Timers	occ sens	Existing	0.00	8	\$111.67	7%	15%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Large Retail	Interior Lighting	Interior Lighting - Skylights	1000 sqft	Existing	0.00	15	\$1,006.35	15%	30%	\$0.00	0.00	0.00	AEG Research
Large Retail	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	1000 sqft	Existing	315.63	16	\$1,807.69	5%	15%	\$0.43	7.61	14.87	7th Power Plan
Large Retail	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	Existing	3,282.32	11	\$30.80	15%	50%	\$0.00	29.45	52.33	Illinois TRM
Large Retail	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	ELtg Watts	Existing	1.50	8	\$0.63	15%	25%	\$0.05	7.70	14.62	7th Power Plan
Large Retail	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	Existing	51.39	8	\$55.10	15%	25%	\$0.12	3.90	7.62	Pacific Gas and Electric Research
Large Retail	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	Existing	61.83	7	\$3,400.00	15%	30%	\$6.30	6.92	13.98	AEG Research
Large Retail	Refrigeration	Refrigeration - Anti-Sweat Heater	Fridge Feet	Existing	68.54	8	\$48.18	4%	25%	\$0.11	0.56	1.05	7th Power Plan
Large Retail	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	Existing	92.84	4	\$10.44	4%	25%	\$0.03	0.51	0.76	Michigan Energy Measures Database
Large Retail	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	Existing	867.51	16	\$165.20	4%	25%	\$0.02	0.38	0.49	7th Power Plan
Large Retail	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	Existing	126.41	15	\$335.85	0%	0%	\$0.28	0.00	0.00	7th Power Plan
Large Retail	Refrigeration	Refrigeration - Strip Curtain	Walkin Door	Existing	93.69	2	\$10.41	4%	25%	\$0.05	0.09	0.13	7th Power Plan
Large Retail	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBtuh	Existing	1.89	15	\$45.43	2%	13%	\$2.44	1.97	2.94	Annual Energy Outlook, 2015

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Large Retail	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	Existing	39.86	15	\$313.82	2%	13%	\$0.81	3.48	5.12	Annual Energy Outlook, 2015
Large Retail	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	Existing	566.34	10	\$506.05	4%	25%	\$0.12	0.25	0.33	Vermont TRM
Large Retail	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	Existing	40.50	6	\$45.41	0%	0%	\$0.21	0.00	0.00	7th Power Plan
Large Retail	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	Existing	3.26	8	\$3.72	0%	0%	\$0.17	0.00	0.00	7th Power Plan
Large Retail	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	Existing	735.92	5	\$45.85	0%	0%	\$0.01	0.00	0.00	Illinois TRM
Large Retail	Refrigeration	Grocery - ECMs for Display Cases	Fridge Case	Existing	172.53	16	\$165.20	4%	25%	\$0.10	0.51	0.73	7th Power Plan
Large Retail	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	Existing	1,051.75	5	\$187.94	25%	75%	\$0.04	4.00	5.31	Illinois TRM
Large Retail	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	Existing	4,785.38	18	\$8,526.67	25%	50%	\$0.14	12.18	17.84	7th Power Plan
Large Retail	Office Equipment	Office Equipment - Smart Power Strips	Smart Strip	Existing	17.48	4	\$41.63	10%	50%	\$0.55	4.46	5.40	7th Power Plan
Large Retail	Cooling	Lodging - Guest Room Controls	LodgUnit	Existing	216.37	15	\$260.00	0%	0%	\$0.22	0.00	0.00	AEG-BEST
Large Retail	Heating	Lodging - Guest Room Controls	LodgUnit	Existing	-95.24	15	\$260.00	0%	0%	\$0.22	0.00	0.00	AEG-BEST
Large Retail	Office Equipment	Data Center - Best Practice Measures	sqft	Existing	0.01	5	\$0.00	0%	0%	\$0.02	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Retail	Cooling	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.01	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Retail	Ventilation	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.01	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Retail	Interior Lighting	Data Center - Commercially Available Measures	sqft	Existing	0.04	8	\$0.01	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Retail	Office Equipment	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.01	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Retail	Cooling	Data Center - Cutting Edge Measures	sqft	Existing	0.05	6	\$0.00	0%	0%	\$0.02	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Retail	Office Equipment	Data Center - Cutting Edge Measures	sqft	Existing	0.00	6	\$0.00	0%	0%	\$0.02	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Retail	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	Existing	14,509.47	18	\$4,092.80	0%	0%	\$0.02	0.00	0.00	7th Power Plan

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Large Retail	Miscellaneous	Pool Pump - Timer	perBldg	Existing	0.00	10	\$85.22	15%	75%	\$0.00	0.00	0.00	Ontario Power TRM
Large Retail	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	Existing	13,328.13	6	\$35.93	1%	3%	\$0.00	0.00	3.12	7th Power Plan
Large Retail	Cooling	Advanced New Construction Designs	sqft	Existing	1.07	25	\$4.11	0%	0%	\$0.08	0.00	0.00	AEG Research
Large Retail	Heating	Advanced New Construction Designs	sqft	Existing	0.77	25	\$4.11	0%	0%	\$0.08	0.00	0.00	AEG Research
Large Retail	Ventilation	Advanced New Construction Designs	sqft	Existing	0.59	25	\$4.11	0%	0%	\$0.08	0.00	0.00	AEG Research
Large Retail	Water Heating	Advanced New Construction Designs	sqft	Existing	0.16	25	\$4.11	0%	0%	\$0.08	0.00	0.00	AEG Research
Large Retail	Interior Lighting	Advanced New Construction Designs	sqft	Existing	0.96	25	\$4.11	0%	0%	\$0.08	0.00	0.00	AEG Research
Large Retail	Exterior Lighting	Advanced New Construction Designs	sqft	Existing	0.18	25	\$4.11	0%	0%	\$0.08	0.00	0.00	AEG Research
Large Retail	Cooling	Strategic Energy Management	sqft	Existing	0.15	3	\$0.22	0%	3%	\$0.10	0.94	1.39	AEG Research
Large Retail	Heating	Strategic Energy Management	sqft	Existing	0.11	3	\$0.22	0%	3%	\$0.10	0.25	0.35	AEG Research
Large Retail	Ventilation	Strategic Energy Management	sqft	Existing	0.09	3	\$0.22	0%	3%	\$0.10	0.72	1.26	AEG Research
Large Retail	Water Heating	Strategic Energy Management	sqft	Existing	0.03	3	\$0.22	0%	3%	\$0.10	0.09	0.22	AEG Research
Large Retail	Interior Lighting	Strategic Energy Management	sqft	Existing	0.15	3	\$0.22	0%	3%	\$0.10	1.06	2.10	AEG Research
Large Retail	Exterior Lighting	Strategic Energy Management	sqft	Existing	0.03	3	\$0.22	0%	3%	\$0.10	0.21	0.42	AEG Research
Large Retail	Refrigeration	Strategic Energy Management	sqft	Existing	0.03	3	\$0.22	0%	3%	\$0.10	0.22	0.30	AEG Research
Large Retail	Office Equipment	Strategic Energy Management	sqft	Existing	0.02	3	\$0.22	0%	3%	\$0.10	0.18	0.22	AEG Research
Large Retail	Cooling	Commissioning	sqft	Existing	0.20	3	\$0.93	0%	0%	\$0.34	0.00	0.00	AEG Research
Large Retail	Heating	Commissioning	sqft	Existing	0.15	3	\$0.93	0%	0%	\$0.34	0.00	0.00	AEG Research
Large Retail	Ventilation	Commissioning	sqft	Existing	0.12	3	\$0.93	0%	0%	\$0.34	0.00	0.00	AEG Research
Large Retail	Water Heating	Commissioning	sqft	Existing	0.01	3	\$0.93	0%	0%	\$0.34	0.00	0.00	AEG Research
Large Retail	Interior Lighting	Commissioning	sqft	Existing	0.17	3	\$0.93	0%	0%	\$0.34	0.00	0.00	AEG Research

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Large Retail	Exterior Lighting	Commissioning	sqft	Existing	0.03	3	\$0.93	0%	0%	\$0.34	0.00	0.00	AEG Research
Large Retail	Refrigeration	Commissioning	sqft	Existing	0.06	3	\$0.93	0%	0%	\$0.34	0.00	0.00	AEG Research
Large Retail	Cooling	Retrocommissioning	sqft	Existing	0.21	3	\$0.59	16%	69%	\$0.21	23.04	34.06	AEG Research
Large Retail	Heating	Retrocommissioning	sqft	Existing	0.15	3	\$0.59	16%	69%	\$0.21	6.07	8.45	AEG Research
Large Retail	Ventilation	Retrocommissioning	sqft	Existing	0.13	3	\$0.59	16%	69%	\$0.21	17.70	30.91	AEG Research
Large Retail	Water Heating	Retrocommissioning	sqft	Existing	0.01	3	\$0.59	16%	69%	\$0.21	0.75	1.77	AEG Research
Large Retail	Interior Lighting	Retrocommissioning	sqft	Existing	0.17	3	\$0.59	16%	69%	\$0.21	21.58	42.75	AEG Research
Large Retail	Exterior Lighting	Retrocommissioning	sqft	Existing	0.03	3	\$0.59	16%	69%	\$0.21	4.31	8.56	AEG Research
Large Retail	Refrigeration	Retrocommissioning	sqft	Existing	0.06	3	\$0.59	16%	69%	\$0.21	8.97	12.07	AEG Research
Large Retail	Interior Lighting	Fruit Storage - Lighting Controls	sqft	Existing	0.12	10	\$0.09	0%	0%	\$0.07	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Retail	Refrigeration	Fruit Storage Refrigeration Retrofit	sqft	Existing	0.18	10	\$1.09	0%	0%	\$0.76	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Retail	Refrigeration	Fruit Storage Refrigeration Tuneup	sqft	Existing	0.04	3	\$0.23	0%	0%	\$1.56	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Retail	Refrigeration	Fruit Storage Retrofit - CO2 Scrub	sqft	Existing	0.09	10	\$3.13	0%	0%	\$4.52	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Retail	Refrigeration	Fruit Storage Retrofit - Membrane	sqft	Existing	0.02	10	\$0.68	0%	0%	\$4.90	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Retail	Cooling	Insulation - Ceiling	sqft roof	New	0.00	45	\$1.28	15%	50%	\$0.10	0.00	0.00	Building Energy Simulation Tool
Large Retail	Heating	Insulation - Ceiling	sqft roof	New	0.57	45	\$1.28	15%	50%	\$0.10	1.11	1.25	Building Energy Simulation Tool
Large Retail	Ventilation	Insulation - Ceiling	sqft roof	New	0.32	45	\$1.28	15%	50%	\$0.10	2.76	3.43	Building Energy Simulation Tool
Large Retail	Cooling	Insulation - Ducting	sqft duct	New	0.28	20	\$0.84	15%	25%	\$0.00	0.67	0.76	Building Energy Simulation Tool
Large Retail	Heating	Insulation - Ducting	sqft duct	New	0.00	20	\$0.84	15%	25%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Large Retail	Ventilation	Insulation - Ducting	sqft duct	New	0.00	20	\$0.84	15%	25%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Large Retail	Cooling	Building Shell - Cool Roofs	sqft roof	New	0.20	20	\$0.78	45%	50%	\$10.00	0.16	0.18	Building Energy Simulation Tool

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Large Retail	Heating	Building Shell - Cool Roofs	sqft roof	New	-0.15	20	\$0.78	45%	50%	\$10.00	-0.04	-0.05	Building Energy Simulation Tool
Large Retail	Ventilation	Building Shell - Cool Roofs	sqft roof	New	-0.08	20	\$0.78	45%	50%	\$10.00	-0.10	-0.13	Building Energy Simulation Tool
Large Retail	Cooling	Insulation - Wall Cavity	sqft wall	New	-0.03	45	\$0.78	15%	50%	\$0.08	-0.15	-0.17	Building Energy Simulation Tool
Large Retail	Heating	Insulation - Wall Cavity	sqft wall	New	0.42	45	\$0.78	15%	50%	\$0.08	0.81	0.91	Building Energy Simulation Tool
Large Retail	Ventilation	Insulation - Wall Cavity	sqft wall	New	0.24	45	\$0.78	15%	50%	\$0.08	2.03	2.52	Building Energy Simulation Tool
Large Retail	Cooling	HVAC - Duct Repair and Sealing	tonCool	New	10.57	18	\$0.57	15%	25%	\$0.00	0.19	0.22	Building Energy Simulation Tool
Large Retail	Heating	HVAC - Duct Repair and Sealing	tonCool	New	6.77	18	\$0.57	15%	25%	\$0.00	0.04	0.05	Building Energy Simulation Tool
Large Retail	Ventilation	HVAC - Duct Repair and Sealing	tonCool	New	3.79	18	\$0.57	15%	25%	\$0.00	0.11	0.13	Building Energy Simulation Tool
Large Retail	Cooling	Windows - High Efficiency Glazing	sqft window	New	7.09	30	\$35.93	66%	66%	\$0.13	0.00	0.00	7th Power Plan
Large Retail	Heating	Windows - High Efficiency Glazing	sqft window	New	10.40	30	\$35.93	66%	66%	\$0.13	0.00	0.00	7th Power Plan
Large Retail	Ventilation	Windows - High Efficiency Glazing	sqft window	New	3.32	30	\$35.93	66%	66%	\$0.13	0.00	0.00	7th Power Plan
Large Retail	Cooling	Chiller - Chilled Water Reset	ChillCtrl	New	2,379.40	10	\$884.85	15%	75%	\$0.05	0.01	0.02	AEG-BEST
Large Retail	Cooling	Chiller - Chilled Water Variable-Flow System	HP cool	New	241.93	15	\$332.55	15%	75%	\$0.14	0.25	0.32	AEG-BEST
Large Retail	Cooling	Chiller - Variable Speed Fans	HP fan	New	566.42	15	\$208.36	15%	75%	\$0.04	0.06	0.07	New Jersey TRM
Large Retail	Cooling	Water-Cooled Chiller - Condenser Water Reset	ChillCtrl	New	18,819.80	10	\$884.85	15%	75%	\$0.01	0.04	0.06	AEG-BEST
Large Retail	Cooling	HVAC - Economizer	HP cool	New	94.35	10	\$168.42	18%	75%	\$0.22	3.64	4.82	AEG-BEST
Large Retail	Heating	Space Heating - Heat Recovery Ventilator	CFM	New	0.82	14	\$5.08	6%	75%	\$0.67	1.28	1.65	7th Power Plan
Large Retail	Ventilation	Ventilation - ECM on VAV Boxes	sqft	New	0.33	18	\$0.25	15%	20%	\$0.05	1.16	1.46	7th Power Plan
Large Retail	Ventilation	Ventilation - Variable Speed Control	sqft	New	0.03	15	\$181.39	19%	50%	\$384.70	0.45	0.68	AEG-BEST

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Large Retail	Ventilation	Ventilation - Demand Controlled	sqft	New	0.01	15	\$0.25	15%	75%	\$1.22	0.38	0.58	7th Power Plan
Large Retail	Cooling	Destratification Fans (HVLS)	Strat Fan	New	3,797.52	15	\$7,270.90	15%	30%	\$0.19	1.46	1.87	AEG Research
Large Retail	Heating	Destratification Fans (HVLS)	Strat Fan	New	0.14	15	\$7,270.90	15%	30%	\$0.19	0.00	0.00	AEG Research
Large Retail	Cooling	RTU - Maintenance	tonCool	New	44.58	3	\$35.00	15%	45%	\$0.24	0.33	0.48	AEG Research
Large Retail	Cooling	RTU - Advanced Controls	sqft	New	0.10	15	\$0.07	15%	45%	\$0.07	1.10	1.30	7th Power Plan
Large Retail	Cooling	RTU - Evaporative Precooler	tonCool	New	90.94	15	\$681.62	15%	75%	\$0.74	9.47	10.82	AEG Research
Large Retail	Cooling	Ductless Mini Split Heat Pump	tonCool	New	172.94	15	\$3,359.26	15%	25%	\$1.05	0.09	0.12	7th Power Plan
Large Retail	Heating	Ductless Mini Split Heat Pump	tonCool	New	142.99	15	\$3,359.26	15%	25%	\$1.05	0.54	0.68	7th Power Plan
Large Retail	Cooling	Thermostat - WiFi/Interactive	sqft	New	0.60	5	\$0.66	30%	40%	\$0.10	0.34	0.48	7th Power Plan
Large Retail	Heating	Thermostat - WiFi/Interactive	sqft	New	0.43	5	\$0.66	30%	40%	\$0.10	0.08	0.11	7th Power Plan
Large Retail	Ventilation	Thermostat - WiFi/Interactive	sqft	New	0.24	5	\$0.66	30%	40%	\$0.10	0.21	0.34	7th Power Plan
Large Retail	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	New	7.15	10	\$8.35	25%	65%	\$0.08	0.02	0.03	Illinois TRM
Large Retail	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	New	18.48	10	\$11.64	25%	65%	\$0.04	0.02	0.04	7th Power Plan
Large Retail	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	New	42.56	15	\$36.75	0%	0%	\$0.05	0.00	0.00	Hawaii TRM
Large Retail	Water Heating	Water Heater - Pipe Insulation	PipeFeet	New	577.02	15	\$14.88	1%	75%	\$0.00	0.45	0.82	AEG-BEST
Large Retail	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	New	36.64	4	\$144.04	25%	65%	\$0.50	0.03	0.07	7th Power Plan
Large Retail	Water Heating	Water Heater - Thermostat Setback	WHunits	New	42.57	2	\$5.00	15%	75%	\$0.03	0.02	0.05	Illinois TRM
Large Retail	Water Heating	Water Heater - Solar System	PipeFeet	New	2,006.41	20	\$215.28	1%	30%	\$0.01	0.63	1.14	AEG-BEST
Large Retail	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.44	15	\$0.35	11%	23%	\$0.06	7.02	9.54	7th Power Plan
Large Retail	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.61	15	\$0.58	11%	23%	\$0.07	9.65	13.19	7th Power Plan
Large Retail	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	New	425.77	15	\$54.41	1%	3%	\$0.01	0.10	0.16	7th Power Plan

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Large Retail	Interior Lighting	Interior Lighting - Timeclocks and Timers	occ sens	New	0.00	8	\$111.67	7%	15%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Large Retail	Interior Lighting	Interior Lighting - Skylights	1000 sqft	New	0.00	15	\$1,006.35	18%	33%	\$0.00	0.00	0.00	AEG Research
Large Retail	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	1000 sqft	New	281.47	16	\$1,807.69	5%	15%	\$0.43	1.08	1.74	7th Power Plan
Large Retail	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	New	2,923.43	11	\$30.80	15%	50%	\$0.00	3.32	5.36	Illinois TRM
Large Retail	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	ELtg Watts	New	1.29	8	\$0.63	15%	25%	\$0.05	0.64	1.23	7th Power Plan
Large Retail	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	New	45.14	8	\$55.10	15%	25%	\$0.11	0.34	0.65	Pacific Gas and Electric Research
Large Retail	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	New	55.17	7	\$3,400.00	15%	30%	\$6.08	0.53	1.07	AEG Research
Large Retail	Refrigeration	Refrigeration - Anti-Sweat Heater	Fridge Feet	New	53.59	8	\$48.18	4%	25%	\$0.14	0.04	0.07	7th Power Plan
Large Retail	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	New	76.04	4	\$10.44	4%	25%	\$0.04	0.02	0.02	Michigan Energy Measures Database
Large Retail	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	New	767.71	16	\$165.20	4%	25%	\$0.02	0.05	0.06	7th Power Plan
Large Retail	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	New	119.50	15	\$335.85	0%	0%	\$0.30	0.00	0.00	7th Power Plan
Large Retail	Refrigeration	Refrigeration - Strip Curtain	Walkin Door	New	88.58	2	\$10.41	4%	25%	\$0.06	0.00	0.00	7th Power Plan
Large Retail	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBtuh	New	1.80	15	\$45.43	2%	13%	\$2.62	0.27	0.34	Annual Energy Outlook, 2015
Large Retail	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	New	37.69	15	\$313.82	2%	13%	\$0.87	0.46	0.60	Annual Energy Outlook, 2015
Large Retail	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	New	510.54	10	\$506.05	4%	25%	\$0.13	0.03	0.03	Vermont TRM
Large Retail	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	New	37.60	6	\$45.41	0%	0%	\$0.23	0.00	0.00	7th Power Plan
Large Retail	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	New	3.03	8	\$3.72	0%	0%	\$0.19	0.00	0.00	7th Power Plan
Large Retail	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	New	685.80	5	\$45.85	0%	0%	\$0.01	0.00	0.00	Illinois TRM
Large Retail	Refrigeration	Grocery - ECMs for Display Cases	Fridge Case	New	157.30	16	\$165.20	4%	25%	\$0.11	0.07	0.08	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Large Retail	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	New	1,029.13	5	\$187.94	25%	75%	\$0.04	0.20	0.26	Illinois TRM
Large Retail	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	New	3,127.96	18	\$8,526.67	25%	50%	\$0.18	2.19	2.77	7th Power Plan
Large Retail	Office Equipment	Office Equipment - Smart Power Strips	Smart Strip	New	17.05	4	\$41.63	10%	50%	\$0.56	0.17	0.21	7th Power Plan
Large Retail	Cooling	Lodging - Guest Room Controls	LodgUnit	New	179.48	15	\$260.00	0%	0%	\$0.29	0.00	0.00	AEG-BEST
Large Retail	Heating	Lodging - Guest Room Controls	LodgUnit	New	-88.88	15	\$260.00	0%	0%	\$0.29	0.00	0.00	AEG-BEST
Large Retail	Office Equipment	Data Center - Best Practice Measures	sqft	New	0.01	5	\$0.00	0%	0%	\$0.02	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Retail	Cooling	Data Center - Commercially Available Measures	sqft	New	0.01	8	\$0.01	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Retail	Ventilation	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.01	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Retail	Interior Lighting	Data Center - Commercially Available Measures	sqft	New	0.03	8	\$0.01	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Retail	Office Equipment	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.01	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Retail	Cooling	Data Center - Cutting Edge Measures	sqft	New	0.04	6	\$0.00	0%	0%	\$0.02	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Retail	Office Equipment	Data Center - Cutting Edge Measures	sqft	New	0.00	6	\$0.00	0%	0%	\$0.02	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Retail	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	New	9,466.05	18	\$4,092.80	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Large Retail	Miscellaneous	Pool Pump - Timer	perBldg	New	0.00	10	\$85.22	15%	75%	\$0.00	0.00	0.00	Ontario Power TRM
Large Retail	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	New	4,442.71	6	\$35.93	1%	3%	\$0.00	0.00	0.15	7th Power Plan
Large Retail	Cooling	Advanced New Construction Designs	sqft	New	1.00	25	\$4.11	10%	30%	\$0.09	10.87	12.30	AEG Research
Large Retail	Heating	Advanced New Construction Designs	sqft	New	0.70	25	\$4.11	10%	30%	\$0.09	2.61	2.96	AEG Research
Large Retail	Ventilation	Advanced New Construction Designs	sqft	New	0.39	25	\$4.11	10%	30%	\$0.09	6.42	8.07	AEG Research
Large Retail	Water Heating	Advanced New Construction Designs	sqft	New	0.14	25	\$4.11	10%	30%	\$0.09	1.05	1.44	AEG Research

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Large Retail	Interior Lighting	Advanced New Construction Designs	sqft	New	0.88	25	\$4.11	10%	30%	\$0.09	11.94	15.29	AEG Research
Large Retail	Exterior Lighting	Advanced New Construction Designs	sqft	New	0.16	25	\$4.11	10%	30%	\$0.09	2.22	2.92	AEG Research
Large Retail	Cooling	Strategic Energy Management	sqft	New	0.15	3	\$0.21	0%	3%	\$0.10	0.02	0.03	AEG Research
Large Retail	Heating	Strategic Energy Management	sqft	New	0.10	3	\$0.21	0%	3%	\$0.10	0.01	0.01	AEG Research
Large Retail	Ventilation	Strategic Energy Management	sqft	New	0.06	3	\$0.21	0%	3%	\$0.10	0.01	0.02	AEG Research
Large Retail	Water Heating	Strategic Energy Management	sqft	New	0.02	3	\$0.21	0%	3%	\$0.10	0.00	0.01	AEG Research
Large Retail	Interior Lighting	Strategic Energy Management	sqft	New	0.13	3	\$0.21	0%	3%	\$0.10	0.03	0.06	AEG Research
Large Retail	Exterior Lighting	Strategic Energy Management	sqft	New	0.02	3	\$0.21	0%	3%	\$0.10	0.00	0.01	AEG Research
Large Retail	Refrigeration	Strategic Energy Management	sqft	New	0.02	3	\$0.21	0%	3%	\$0.10	0.01	0.01	AEG Research
Large Retail	Office Equipment	Strategic Energy Management	sqft	New	0.02	3	\$0.21	0%	3%	\$0.10	0.00	0.01	AEG Research
Large Retail	Cooling	Commissioning	sqft	New	0.20	3	\$0.85	16%	69%	\$0.33	0.57	0.83	AEG Research
Large Retail	Heating	Commissioning	sqft	New	0.14	3	\$0.85	16%	69%	\$0.33	0.14	0.20	AEG Research
Large Retail	Ventilation	Commissioning	sqft	New	0.08	3	\$0.85	16%	69%	\$0.33	0.35	0.61	AEG Research
Large Retail	Water Heating	Commissioning	sqft	New	0.01	3	\$0.85	16%	69%	\$0.33	0.02	0.05	AEG Research
Large Retail	Interior Lighting	Commissioning	sqft	New	0.15	3	\$0.85	16%	69%	\$0.33	0.54	1.13	AEG Research
Large Retail	Exterior Lighting	Commissioning	sqft	New	0.03	3	\$0.85	16%	69%	\$0.33	0.10	0.24	AEG Research
Large Retail	Refrigeration	Commissioning	sqft	New	0.05	3	\$0.85	16%	69%	\$0.33	0.21	0.28	AEG Research
Large Retail	Cooling	Retrocommissioning	sqft	New	0.20	3	\$0.54	0%	0%	\$0.21	0.00	0.00	AEG Research
Large Retail	Heating	Retrocommissioning	sqft	New	0.14	3	\$0.54	0%	0%	\$0.21	0.00	0.00	AEG Research
Large Retail	Ventilation	Retrocommissioning	sqft	New	0.08	3	\$0.54	0%	0%	\$0.21	0.00	0.00	AEG Research
Large Retail	Water Heating	Retrocommissioning	sqft	New	0.01	3	\$0.54	0%	0%	\$0.21	0.00	0.00	AEG Research
Large Retail	Interior Lighting	Retrocommissioning	sqft	New	0.15	3	\$0.54	0%	0%	\$0.21	0.00	0.00	AEG Research

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Large Retail	Exterior Lighting	Retrocommissioning	sqft	New	0.03	3	\$0.54	0%	0%	\$0.21	0.00	0.00	AEG Research
Large Retail	Refrigeration	Retrocommissioning	sqft	New	0.05	3	\$0.54	0%	0%	\$0.21	0.00	0.00	AEG Research
Large Retail	Interior Lighting	Fruit Storage - Lighting Controls	sqft	New	0.11	10	\$0.09	0%	0%	\$0.07	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Retail	Refrigeration	Fruit Storage Refrigeration Retrofit	sqft	New	0.17	10	\$1.09	0%	0%	\$0.84	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Retail	Refrigeration	Fruit Storage Refrigeration Tuneup	sqft	New	0.04	3	\$0.23	0%	0%	\$1.71	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Retail	Refrigeration	Fruit Storage Retrofit - CO2 Scrub	sqft	New	0.08	10	\$3.13	0%	0%	\$4.95	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Retail	Refrigeration	Fruit Storage Retrofit - Membrane	sqft	New	0.02	10	\$0.68	0%	0%	\$5.37	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Retail	Cooling	Insulation - Ceiling	sqft roof	Existing	0.15	45	\$1.28	15%	35%	\$0.23	19.41	23.93	Building Energy Simulation Tool
Small Retail	Heating	Insulation - Ceiling	sqft roof	Existing	0.20	45	\$1.28	15%	35%	\$0.23	8.54	10.29	Building Energy Simulation Tool
Small Retail	Ventilation	Insulation - Ceiling	sqft roof	Existing	0.08	45	\$1.28	15%	35%	\$0.23	13.30	18.50	Building Energy Simulation Tool
Small Retail	Cooling	Insulation - Ducting	sqft duct	Existing	0.31	20	\$0.84	15%	50%	\$0.00	17.99	22.09	Building Energy Simulation Tool
Small Retail	Heating	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.84	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Small Retail	Ventilation	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.84	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Small Retail	Cooling	Building Shell - Cool Roofs	sqft roof	Existing	0.34	20	\$0.78	45%	50%	\$0.48	11.33	13.77	Building Energy Simulation Tool
Small Retail	Heating	Building Shell - Cool Roofs	sqft roof	Existing	-0.14	20	\$0.78	45%	50%	\$0.48	-1.45	-1.73	Building Energy Simulation Tool
Small Retail	Ventilation	Building Shell - Cool Roofs	sqft roof	Existing	-0.05	20	\$0.78	45%	50%	\$0.48	-2.28	-3.12	Building Energy Simulation Tool
Small Retail	Cooling	Insulation - Wall Cavity	sqft wall	Existing	-0.07	45	\$0.78	15%	35%	\$0.05	-2.77	-3.37	Building Energy Simulation Tool
Small Retail	Heating	Insulation - Wall Cavity	sqft wall	Existing	0.91	45	\$0.78	15%	35%	\$0.05	11.62	13.85	Building Energy Simulation Tool
Small Retail	Ventilation	Insulation - Wall Cavity	sqft wall	Existing	0.35	45	\$0.78	15%	35%	\$0.05	18.31	25.00	Building Energy Simulation Tool

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Small Retail	Cooling	HVAC - Duct Repair and Sealing	tonCool	Existing	4.25	18	\$0.57	15%	50%	\$0.08	3.94	4.80	Building Energy Simulation Tool
Small Retail	Heating	HVAC - Duct Repair and Sealing	tonCool	Existing	-2.55	18	\$0.57	15%	50%	\$0.08	-0.76	-0.91	Building Energy Simulation Tool
Small Retail	Ventilation	HVAC - Duct Repair and Sealing	tonCool	Existing	-0.99	18	\$0.57	15%	50%	\$0.08	-1.20	-1.64	Building Energy Simulation Tool
Small Retail	Cooling	Windows - High Efficiency Glazing	sqft window	Existing	6.28	30	\$35.93	48%	48%	\$0.15	0.00	0.00	7th Power Plan
Small Retail	Heating	Windows - High Efficiency Glazing	sqft window	Existing	10.47	30	\$35.93	48%	48%	\$0.15	0.00	0.00	7th Power Plan
Small Retail	Ventilation	Windows - High Efficiency Glazing	sqft window	Existing	2.34	30	\$35.93	48%	48%	\$0.15	0.00	0.00	7th Power Plan
Small Retail	Cooling	Chiller - Chilled Water Reset	ChillCtrl	Existing	0.00	10	\$884.85	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Small Retail	Cooling	Chiller - Chilled Water Variable-Flow System	HP cool	Existing	0.00	15	\$332.55	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Small Retail	Cooling	Chiller - Variable Speed Fans	HP fan	Existing	0.00	15	\$208.36	15%	75%	\$0.00	0.00	0.00	New Jersey TRM
Small Retail	Cooling	Water-Cooled Chiller - Condenser Water Reset	ChillCtrl	Existing	0.00	10	\$884.85	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Small Retail	Cooling	HVAC - Economizer	HP cool	Existing	87.64	10	\$168.42	18%	75%	\$0.25	102.91	139.47	AEG-BEST
Small Retail	Heating	Space Heating - Heat Recovery Ventilator	CFM	Existing	0.88	14	\$5.08	3%	75%	\$0.63	33.23	43.80	7th Power Plan
Small Retail	Ventilation	Ventilation - ECM on VAV Boxes	sqft	Existing	0.24	18	\$0.25	15%	20%	\$0.09	10.46	14.45	7th Power Plan
Small Retail	Ventilation	Ventilation - Variable Speed Control	sqft	Existing	0.07	15	\$181.39	13%	25%	\$242.00	6.76	11.36	AEG-BEST
Small Retail	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.01	15	\$0.25	15%	25%	\$2.12	0.94	1.54	7th Power Plan
Small Retail	Cooling	Destratification Fans (HVLS)	Strat Fan	Existing	3,705.84	15	\$7,270.90	15%	15%	\$0.08	0.00	0.00	AEG Research
Small Retail	Heating	Destratification Fans (HVLS)	Strat Fan	Existing	5,705.92	15	\$7,270.90	15%	15%	\$0.08	0.00	0.00	AEG Research
Small Retail	Cooling	RTU - Maintenance	tonCool	Existing	40.37	3	\$35.00	15%	45%	\$0.26	27.19	40.83	AEG Research
Small Retail	Cooling	RTU - Advanced Controls	sqft	Existing	0.18	15	\$0.07	15%	45%	\$0.04	29.17	35.39	7th Power Plan
Small Retail	Cooling	RTU - Evaporative Precooler	tonCool	Existing	83.36	15	\$681.62	15%	75%	\$0.81	103.99	124.55	AEG Research
Small Retail	Cooling	Ductless Mini Split Heat Pump	tonCool	Existing	172.05	15	\$3,359.26	15%	75%	\$0.96	7.10	10.34	7th Power Plan

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Small Retail	Heating	Ductless Mini Split Heat Pump	tonCool	Existing	168.38	15	\$3,359.26	15%	75%	\$0.96	44.43	58.54	7th Power Plan
Small Retail	Cooling	Thermostat - WiFi/Interactive	sqft	Existing	0.56	5	\$0.66	30%	40%	\$0.11	35.15	45.86	7th Power Plan
Small Retail	Heating	Thermostat - WiFi/Interactive	sqft	Existing	0.45	5	\$0.66	30%	40%	\$0.11	9.36	11.64	7th Power Plan
Small Retail	Ventilation	Thermostat - WiFi/Interactive	sqft	Existing	0.18	5	\$0.66	30%	40%	\$0.11	15.15	21.53	7th Power Plan
Small Retail	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	Existing	3.98	10	\$8.35	25%	65%	\$0.17	0.60	1.47	Illinois TRM
Small Retail	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	Existing	10.44	10	\$11.64	25%	65%	\$0.09	0.80	1.91	7th Power Plan
Small Retail	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	Existing	51.69	15	\$36.75	0%	0%	\$0.05	0.00	0.00	Hawaii TRM
Small Retail	Water Heating	Water Heater - Pipe Insulation	PipeFeet	Existing	111.81	15	\$14.88	16%	75%	\$0.01	10.78	23.30	AEG-BEST
Small Retail	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	Existing	20.73	4	\$144.04	25%	65%	\$1.08	3.11	7.25	7th Power Plan
Small Retail	Water Heating	Water Heater - Thermostat Setback	WHunits	Existing	51.68	2	\$5.00	15%	75%	\$0.03	5.28	12.15	Illinois TRM
Small Retail	Water Heating	Water Heater - Solar System	PipeFeet	Existing	385.63	20	\$215.28	1%	30%	\$0.03	17.99	39.76	AEG-BEST
Small Retail	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.32	15	\$0.35	3%	23%	\$0.09	65.86	95.72	7th Power Plan
Small Retail	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.44	15	\$0.58	3%	23%	\$0.10	88.87	131.98	7th Power Plan
Small Retail	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	Existing	138.30	15	\$54.41	1%	3%	\$0.03	1.87	3.53	7th Power Plan
Small Retail	Interior Lighting	Interior Lighting - Timeclocks and Timers	occ sens	Existing	0.00	8	\$111.67	7%	15%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Small Retail	Interior Lighting	Interior Lighting - Skylights	1000 sqft	Existing	0.00	15	\$1,006.35	15%	25%	\$0.00	0.00	0.00	AEG Research
Small Retail	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	1000 sqft	Existing	208.32	16	\$1,807.69	5%	15%	\$0.65	16.52	32.29	7th Power Plan
Small Retail	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	Existing	2,166.33	11	\$30.80	15%	50%	\$0.00	63.94	113.63	Illinois TRM
Small Retail	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	ELtg Watts	Existing	1.50	8	\$0.63	15%	25%	\$0.05	25.33	48.11	7th Power Plan

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Small Retail	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	Existing	51.39	8	\$55.10	15%	25%	\$0.12	12.83	25.07	Pacific Gas and Electric Research
Small Retail	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	Existing	61.83	7	\$3,400.00	15%	30%	\$6.30	22.76	45.99	AEG Research
Small Retail	Refrigeration	Refrigeration - Anti-Sweat Heater	Fridge Feet	Existing	7.24	8	\$48.18	4%	25%	\$1.00	0.10	0.19	7th Power Plan
Small Retail	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	Existing	13.56	4	\$10.44	4%	25%	\$0.20	0.35	0.44	Michigan Energy Measures Database
Small Retail	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	Existing	96.99	16	\$165.20	4%	25%	\$0.17	0.58	0.70	7th Power Plan
Small Retail	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	Existing	11.74	15	\$335.85	0%	0%	\$2.94	0.00	0.00	7th Power Plan
Small Retail	Refrigeration	Refrigeration - Strip Curtain	Walkin Door	Existing	11.17	2	\$10.41	4%	25%	\$0.43	0.15	0.21	7th Power Plan
Small Retail	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	Existing	0.17	15	\$45.43	2%	13%	\$26.10	0.57	0.81	Annual Energy Outlook, 2015
Small Retail	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	Existing	3.69	15	\$313.82	2%	13%	\$8.70	1.05	1.46	Annual Energy Outlook, 2015
Small Retail	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	Existing	64.26	10	\$506.05	4%	25%	\$1.01	0.39	0.47	Vermont TRM
Small Retail	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	Existing	4.44	6	\$45.41	0%	0%	\$1.87	0.00	0.00	7th Power Plan
Small Retail	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	Existing	0.36	8	\$3.72	0%	0%	\$1.55	0.00	0.00	7th Power Plan
Small Retail	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	Existing	79.90	5	\$45.85	0%	0%	\$0.12	0.00	0.00	Illinois TRM
Small Retail	Refrigeration	Grocery - ECMs for Display Cases	Fridge Case	Existing	18.63	16	\$165.20	4%	25%	\$0.89	0.09	0.13	7th Power Plan
Small Retail	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	Existing	1,050.29	5	\$187.94	25%	75%	\$0.04	1.57	2.04	Illinois TRM
Small Retail	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	Existing	2,307.07	18	\$8,526.67	25%	50%	\$0.31	19.63	27.55	7th Power Plan
Small Retail	Office Equipment	Office Equipment - Smart Power Strips	Smart Strip	Existing	13.15	4	\$41.63	10%	50%	\$0.73	11.67	13.28	7th Power Plan
Small Retail	Cooling	Lodging - Guest Room Controls	LodgUnit	Existing	183.57	15	\$260.00	0%	0%	\$0.34	0.00	0.00	AEG-BEST
Small Retail	Heating	Lodging - Guest Room Controls	LodgUnit	Existing	-106.63	15	\$260.00	0%	0%	\$0.34	0.00	0.00	AEG-BEST

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Small Retail	Office Equipment	Data Center - Best Practice Measures	sqft	Existing	0.03	5	\$0.00	0%	0%	\$0.02	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Retail	Cooling	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.00	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Retail	Ventilation	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.00	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Retail	Interior Lighting	Data Center - Commercially Available Measures	sqft	Existing	0.02	8	\$0.00	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Retail	Office Equipment	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.00	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Retail	Cooling	Data Center - Cutting Edge Measures	sqft	Existing	0.04	6	\$0.00	0%	0%	\$0.02	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Retail	Office Equipment	Data Center - Cutting Edge Measures	sqft	Existing	0.00	6	\$0.00	0%	0%	\$0.02	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Retail	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	Existing	1,023.72	18	\$4,092.80	0%	0%	\$0.33	0.00	0.00	7th Power Plan
Small Retail	Miscellaneous	Pool Pump - Timer	perBldg	Existing	0.00	10	\$85.22	15%	75%	\$0.00	0.00	0.00	Ontario Power TRM
Small Retail	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	Existing	1,422.22	6	\$35.93	1%	3%	\$0.00	0.00	7.31	7th Power Plan
Small Retail	Cooling	Advanced New Construction Designs	sqft	Existing	0.94	25	\$4.11	0%	0%	\$0.11	0.00	0.00	AEG Research
Small Retail	Heating	Advanced New Construction Designs	sqft	Existing	0.75	25	\$4.11	0%	0%	\$0.11	0.00	0.00	AEG Research
Small Retail	Ventilation	Advanced New Construction Designs	sqft	Existing	0.29	25	\$4.11	0%	0%	\$0.11	0.00	0.00	AEG Research
Small Retail	Water Heating	Advanced New Construction Designs	sqft	Existing	0.17	25	\$4.11	0%	0%	\$0.11	0.00	0.00	AEG Research
Small Retail	Interior Lighting	Advanced New Construction Designs	sqft	Existing	0.63	25	\$4.11	0%	0%	\$0.11	0.00	0.00	AEG Research
Small Retail	Exterior Lighting	Advanced New Construction Designs	sqft	Existing	0.18	25	\$4.11	0%	0%	\$0.11	0.00	0.00	AEG Research
Small Retail	Cooling	Strategic Energy Management	sqft	Existing	0.13	3	\$0.17	0%	3%	\$0.10	2.68	4.01	AEG Research
Small Retail	Heating	Strategic Energy Management	sqft	Existing	0.10	3	\$0.17	0%	3%	\$0.10	0.66	0.98	AEG Research
Small Retail	Ventilation	Strategic Energy Management	sqft	Existing	0.04	3	\$0.17	0%	3%	\$0.10	1.17	1.93	AEG Research

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Small Retail	Water Heating	Strategic Energy Management	sqft	Existing	0.03	3	\$0.17	0%	3%	\$0.10	0.37	0.86	AEG Research
Small Retail	Interior Lighting	Strategic Energy Management	sqft	Existing	0.10	3	\$0.17	0%	3%	\$0.10	2.30	4.56	AEG Research
Small Retail	Exterior Lighting	Strategic Energy Management	sqft	Existing	0.03	3	\$0.17	0%	3%	\$0.10	0.70	1.38	AEG Research
Small Retail	Refrigeration	Strategic Energy Management	sqft	Existing	0.00	3	\$0.17	0%	3%	\$0.10	0.11	0.09	AEG Research
Small Retail	Office Equipment	Strategic Energy Management	sqft	Existing	0.01	3	\$0.17	0%	3%	\$0.10	0.48	0.55	AEG Research
Small Retail	Cooling	Commissioning	sqft	Existing	0.18	3	\$0.71	0%	0%	\$0.36	0.00	0.00	AEG Research
Small Retail	Heating	Commissioning	sqft	Existing	0.14	3	\$0.71	0%	0%	\$0.36	0.00	0.00	AEG Research
Small Retail	Ventilation	Commissioning	sqft	Existing	0.06	3	\$0.71	0%	0%	\$0.36	0.00	0.00	AEG Research
Small Retail	Water Heating	Commissioning	sqft	Existing	0.01	3	\$0.71	0%	0%	\$0.36	0.00	0.00	AEG Research
Small Retail	Interior Lighting	Commissioning	sqft	Existing	0.11	3	\$0.71	0%	0%	\$0.36	0.00	0.00	AEG Research
Small Retail	Exterior Lighting	Commissioning	sqft	Existing	0.03	3	\$0.71	0%	0%	\$0.36	0.00	0.00	AEG Research
Small Retail	Refrigeration	Commissioning	sqft	Existing	0.01	3	\$0.71	0%	0%	\$0.36	0.00	0.00	AEG Research
Small Retail	Cooling	Retrocommissioning	sqft	Existing	0.19	3	\$0.45	16%	69%	\$0.23	65.50	97.94	AEG Research
Small Retail	Heating	Retrocommissioning	sqft	Existing	0.14	3	\$0.45	16%	69%	\$0.23	16.24	23.96	AEG Research
Small Retail	Ventilation	Retrocommissioning	sqft	Existing	0.06	3	\$0.45	16%	69%	\$0.23	28.69	47.24	AEG Research
Small Retail	Water Heating	Retrocommissioning	sqft	Existing	0.01	3	\$0.45	16%	69%	\$0.23	2.97	6.97	AEG Research
Small Retail	Interior Lighting	Retrocommissioning	sqft	Existing	0.11	3	\$0.45	16%	69%	\$0.23	46.87	92.84	AEG Research
Small Retail	Exterior Lighting	Retrocommissioning	sqft	Existing	0.03	3	\$0.45	16%	69%	\$0.23	14.18	28.15	AEG Research
Small Retail	Refrigeration	Retrocommissioning	sqft	Existing	0.01	3	\$0.45	16%	69%	\$0.23	4.48	3.46	AEG Research
Small Retail	Interior Lighting	Fruit Storage - Lighting Controls	sqft	Existing	0.08	10	\$0.09	0%	0%	\$0.10	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Retail	Refrigeration	Fruit Storage Refrigeration Retrofit	sqft	Existing	0.02	10	\$1.09	0%	0%	\$7.11	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Retail	Refrigeration	Fruit Storage Refrigeration Tuneup	sqft	Existing	0.00	3	\$0.23	0%	0%	\$14.57	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Small Retail	Refrigeration	Fruit Storage Retrofit - CO2 Scrub	sqft	Existing	0.01	10	\$3.13	0%	0%	\$42.14	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Retail	Refrigeration	Fruit Storage Retrofit - Membrane	sqft	Existing	0.00	10	\$0.68	0%	0%	\$45.73	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Retail	Cooling	Insulation - Ceiling	sqft roof	New	0.00	45	\$1.28	15%	50%	\$0.40	0.00	0.00	Building Energy Simulation Tool
Small Retail	Heating	Insulation - Ceiling	sqft roof	New	0.18	45	\$1.28	15%	50%	\$0.40	3.14	3.53	Building Energy Simulation Tool
Small Retail	Ventilation	Insulation - Ceiling	sqft roof	New	0.05	45	\$1.28	15%	50%	\$0.40	4.49	5.49	Building Energy Simulation Tool
Small Retail	Cooling	Insulation - Ducting	sqft duct	New	0.51	20	\$0.84	15%	50%	\$0.12	7.00	7.94	Building Energy Simulation Tool
Small Retail	Heating	Insulation - Ducting	sqft duct	New	0.07	20	\$0.84	15%	50%	\$0.12	0.30	0.34	Building Energy Simulation Tool
Small Retail	Ventilation	Insulation - Ducting	sqft duct	New	0.02	20	\$0.84	15%	50%	\$0.12	0.43	0.52	Building Energy Simulation Tool
Small Retail	Cooling	Building Shell - Cool Roofs	sqft roof	New	0.11	20	\$0.78	45%	50%	\$1.54	0.89	1.00	Building Energy Simulation Tool
Small Retail	Heating	Building Shell - Cool Roofs	sqft roof	New	-0.05	20	\$0.78	45%	50%	\$1.54	-0.12	-0.14	Building Energy Simulation Tool
Small Retail	Ventilation	Building Shell - Cool Roofs	sqft roof	New	-0.01	20	\$0.78	45%	50%	\$1.54	-0.18	-0.22	Building Energy Simulation Tool
Small Retail	Cooling	Insulation - Wall Cavity	sqft wall	New	0.00	45	\$0.78	15%	50%	\$0.26	-0.04	-0.04	Building Energy Simulation Tool
Small Retail	Heating	Insulation - Wall Cavity	sqft wall	New	0.17	45	\$0.78	15%	50%	\$0.26	0.89	1.01	Building Energy Simulation Tool
Small Retail	Ventilation	Insulation - Wall Cavity	sqft wall	New	0.05	45	\$0.78	15%	50%	\$0.26	1.29	1.57	Building Energy Simulation Tool
Small Retail	Cooling	HVAC - Duct Repair and Sealing	tonCool	New	4.27	18	\$0.57	15%	50%	\$0.00	0.88	1.01	Building Energy Simulation Tool
Small Retail	Heating	HVAC - Duct Repair and Sealing	tonCool	New	7.92	18	\$0.57	15%	50%	\$0.00	0.52	0.59	Building Energy Simulation Tool
Small Retail	Ventilation	HVAC - Duct Repair and Sealing	tonCool	New	2.38	18	\$0.57	15%	50%	\$0.00	0.75	0.92	Building Energy Simulation Tool
Small Retail	Cooling	Windows - High Efficiency Glazing	sqft window	New	5.99	30	\$35.93	66%	66%	\$0.17	0.00	0.00	7th Power Plan
Small Retail	Heating	Windows - High Efficiency Glazing	sqft window	New	9.42	30	\$35.93	66%	66%	\$0.17	0.00	0.00	7th Power Plan

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Small Retail	Ventilation	Windows - High Efficiency Glazing	sqft window	New	1.63	30	\$35.93	66%	66%	\$0.17	0.00	0.00	7th Power Plan
Small Retail	Cooling	Chiller - Chilled Water Reset	ChillCtrl	New	0.00	10	\$884.85	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Small Retail	Cooling	Chiller - Chilled Water Variable-Flow System	HP cool	New	0.00	15	\$332.55	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Small Retail	Cooling	Chiller - Variable Speed Fans	HP fan	New	0.00	15	\$208.36	15%	75%	\$0.00	0.00	0.00	New Jersey TRM
Small Retail	Cooling	Water-Cooled Chiller - Condenser Water Reset	ChillCtrl	New	0.00	10	\$884.85	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Small Retail	Cooling	HVAC - Economizer	HP cool	New	84.34	10	\$168.42	18%	75%	\$0.25	10.63	14.06	AEG-BEST
Small Retail	Heating	Space Heating - Heat Recovery Ventilator	CFM	New	0.78	14	\$5.08	6%	75%	\$0.71	3.65	4.66	7th Power Plan
Small Retail	Ventilation	Ventilation - ECM on VAV Boxes	sqft	New	0.17	18	\$0.25	15%	20%	\$0.11	1.89	2.33	7th Power Plan
Small Retail	Ventilation	Ventilation - Variable Speed Control	sqft	New	0.05	15	\$181.39	19%	25%	\$294.50	0.37	0.54	AEG-BEST
Small Retail	Ventilation	Ventilation - Demand Controlled	sqft	New	0.01	15	\$0.25	15%	25%	\$2.57	0.10	0.15	7th Power Plan
Small Retail	Cooling	Destratification Fans (HVLS)	Strat Fan	New	3,497.82	15	\$7,270.90	15%	15%	\$0.09	0.00	0.00	AEG Research
Small Retail	Heating	Destratification Fans (HVLS)	Strat Fan	New	5,094.36	15	\$7,270.90	15%	15%	\$0.09	0.00	0.00	AEG Research
Small Retail	Cooling	RTU - Maintenance	tonCool	New	39.88	3	\$35.00	15%	45%	\$0.27	0.92	1.36	AEG Research
Small Retail	Cooling	RTU - Advanced Controls	sqft	New	0.17	15	\$0.07	15%	45%	\$0.04	6.09	7.16	7th Power Plan
Small Retail	Cooling	RTU - Evaporative Precooler	tonCool	New	81.31	15	\$681.62	15%	75%	\$0.83	26.75	30.58	AEG Research
Small Retail	Cooling	Ductless Mini Split Heat Pump	tonCool	New	147.98	15	\$3,359.26	15%	75%	\$1.08	1.10	1.40	7th Power Plan
Small Retail	Heating	Ductless Mini Split Heat Pump	tonCool	New	160.88	15	\$3,359.26	15%	75%	\$1.08	7.21	8.94	7th Power Plan
Small Retail	Cooling	Thermostat - WiFi/Interactive	sqft	New	0.54	5	\$0.66	30%	40%	\$0.12	0.97	1.37	7th Power Plan
Small Retail	Heating	Thermostat - WiFi/Interactive	sqft	New	0.41	5	\$0.66	30%	40%	\$0.12	0.24	0.32	7th Power Plan
Small Retail	Ventilation	Thermostat - WiFi/Interactive	sqft	New	0.12	5	\$0.66	30%	40%	\$0.12	0.34	0.54	7th Power Plan
Small Retail	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	New	3.31	10	\$8.35	25%	65%	\$0.17	0.06	0.12	Illinois TRM

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Small Retail	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	New	8.59	10	\$11.64	25%	65%	\$0.09	0.08	0.16	7th Power Plan
Small Retail	Water Heating	Water Heater - High Efficiency Circulation Pump	WHUnits	New	42.56	15	\$36.75	0%	0%	\$0.05	0.00	0.00	Hawaii TRM
Small Retail	Water Heating	Water Heater - Pipe Insulation	PipeFeet	New	89.38	15	\$14.88	1%	75%	\$0.01	1.77	3.24	AEG-BEST
Small Retail	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	New	17.10	4	\$144.04	25%	65%	\$1.08	0.12	0.29	7th Power Plan
Small Retail	Water Heating	Water Heater - Thermostat Setback	WHUnits	New	42.60	2	\$5.00	15%	75%	\$0.03	0.08	0.19	Illinois TRM
Small Retail	Water Heating	Water Heater - Solar System	PipeFeet	New	311.00	20	\$215.28	1%	30%	\$0.03	2.48	4.50	AEG-BEST
Small Retail	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.29	15	\$0.35	11%	23%	\$0.09	15.23	20.71	7th Power Plan
Small Retail	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.40	15	\$0.58	11%	23%	\$0.10	20.95	28.63	7th Power Plan
Small Retail	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	New	126.45	15	\$54.41	1%	3%	\$0.03	0.22	0.35	7th Power Plan
Small Retail	Interior Lighting	Interior Lighting - Timeclocks and Timers	occ sens	New	0.00	8	\$111.67	7%	15%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Small Retail	Interior Lighting	Interior Lighting - Skylights	1000 sqft	New	0.00	15	\$1,006.35	18%	25%	\$0.00	0.00	0.00	AEG Research
Small Retail	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	1000 sqft	New	186.52	16	\$1,807.69	5%	15%	\$0.65	2.36	3.79	7th Power Plan
Small Retail	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	New	1,929.46	11	\$30.80	15%	50%	\$0.00	7.20	11.65	Illinois TRM
Small Retail	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	ELtg Watts	New	1.29	8	\$0.63	15%	25%	\$0.05	2.11	4.06	7th Power Plan
Small Retail	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	New	45.14	8	\$55.10	15%	25%	\$0.11	1.11	2.13	Pacific Gas and Electric Research
Small Retail	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	New	55.38	7	\$3,400.00	15%	30%	\$6.08	1.77	3.53	AEG Research
Small Retail	Refrigeration	Refrigeration - Anti-Sweat Heater	Fridge Feet	New	5.90	8	\$48.18	4%	25%	\$1.25	0.01	0.01	7th Power Plan
Small Retail	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	New	12.60	4	\$10.44	4%	25%	\$0.21	0.01	0.01	Michigan Energy Measures Database
Small Retail	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	New	89.84	16	\$165.20	4%	25%	\$0.19	0.09	0.10	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Small Retail	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	New	11.22	15	\$335.85	0%	0%	\$3.12	0.00	0.00	7th Power Plan
Small Retail	Refrigeration	Refrigeration - Strip Curtain	Walkin Door	New	9.84	2	\$10.41	4%	25%	\$0.49	0.00	0.00	7th Power Plan
Small Retail	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	New	0.17	15	\$45.43	2%	13%	\$27.78	0.08	0.10	Annual Energy Outlook, 2015
Small Retail	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	New	3.54	15	\$313.82	2%	13%	\$9.26	0.14	0.17	Annual Energy Outlook, 2015
Small Retail	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	New	59.94	10	\$506.05	4%	25%	\$1.10	0.04	0.05	Vermont TRM
Small Retail	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	New	4.21	6	\$45.41	0%	0%	\$2.01	0.00	0.00	7th Power Plan
Small Retail	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	New	0.34	8	\$3.72	0%	0%	\$1.66	0.00	0.00	7th Power Plan
Small Retail	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	New	76.69	5	\$45.85	0%	0%	\$0.13	0.00	0.00	Illinois TRM
Small Retail	Refrigeration	Grocery - ECMs for Display Cases	Fridge Case	New	17.55	16	\$165.20	4%	25%	\$0.95	0.01	0.02	7th Power Plan
Small Retail	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	New	1,030.45	5	\$187.94	25%	75%	\$0.04	0.06	0.08	Illinois TRM
Small Retail	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	New	1,591.32	18	\$8,526.67	25%	50%	\$0.38	3.57	4.43	7th Power Plan
Small Retail	Office Equipment	Office Equipment - Smart Power Strips	Smart Strip	New	12.50	4	\$41.63	10%	50%	\$0.76	0.42	0.50	7th Power Plan
Small Retail	Cooling	Lodging - Guest Room Controls	LodgUnit	New	152.77	15	\$260.00	0%	0%	\$0.48	0.00	0.00	AEG-BEST
Small Retail	Heating	Lodging - Guest Room Controls	LodgUnit	New	-99.35	15	\$260.00	0%	0%	\$0.48	0.00	0.00	AEG-BEST
Small Retail	Office Equipment	Data Center - Best Practice Measures	sqft	New	0.03	5	\$0.00	0%	0%	\$0.02	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Retail	Cooling	Data Center - Commercially Available Measures	sqft	New	0.01	8	\$0.00	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Retail	Ventilation	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Retail	Interior Lighting	Data Center - Commercially Available Measures	sqft	New	0.02	8	\$0.00	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Retail	Office Equipment	Data Center - Commercially Available Measures	sqft	New	0.01	8	\$0.00	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx

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Small Retail	Cooling	Data Center - Cutting Edge Measures	sqft	New	0.04	6	\$0.00	0%	0%	\$0.02	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Retail	Office Equipment	Data Center - Cutting Edge Measures	sqft	New	0.00	6	\$0.00	0%	0%	\$0.02	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Retail	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	New	709.42	18	\$4,092.80	0%	0%	\$0.40	0.00	0.00	7th Power Plan
Small Retail	Miscellaneous	Pool Pump - Timer	perBldg	New	0.00	10	\$85.22	15%	75%	\$0.00	0.00	0.00	Ontario Power TRM
Small Retail	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	New	1,422.22	6	\$35.93	1%	3%	\$0.00	0.00	0.34	7th Power Plan
Small Retail	Cooling	Advanced New Construction Designs	sqft	New	0.89	25	\$4.11	10%	25%	\$0.11	23.30	26.43	AEG Research
Small Retail	Heating	Advanced New Construction Designs	sqft	New	0.67	25	\$4.11	10%	25%	\$0.11	5.53	6.26	AEG Research
Small Retail	Ventilation	Advanced New Construction Designs	sqft	New	0.20	25	\$4.11	10%	25%	\$0.11	7.84	9.67	AEG Research
Small Retail	Water Heating	Advanced New Construction Designs	sqft	New	0.14	25	\$4.11	10%	25%	\$0.11	3.11	4.26	AEG Research
Small Retail	Interior Lighting	Advanced New Construction Designs	sqft	New	0.58	25	\$4.11	10%	25%	\$0.11	19.44	24.91	AEG Research
Small Retail	Exterior Lighting	Advanced New Construction Designs	sqft	New	0.16	25	\$4.11	10%	25%	\$0.11	5.47	7.20	AEG Research
Small Retail	Cooling	Strategic Energy Management	sqft	New	0.13	3	\$0.16	0%	3%	\$0.10	0.07	0.10	AEG Research
Small Retail	Heating	Strategic Energy Management	sqft	New	0.10	3	\$0.16	0%	3%	\$0.10	0.02	0.02	AEG Research
Small Retail	Ventilation	Strategic Energy Management	sqft	New	0.03	3	\$0.16	0%	3%	\$0.10	0.02	0.04	AEG Research
Small Retail	Water Heating	Strategic Energy Management	sqft	New	0.02	3	\$0.16	0%	3%	\$0.10	0.01	0.02	AEG Research
Small Retail	Interior Lighting	Strategic Energy Management	sqft	New	0.09	3	\$0.16	0%	3%	\$0.10	0.06	0.12	AEG Research
Small Retail	Exterior Lighting	Strategic Energy Management	sqft	New	0.02	3	\$0.16	0%	3%	\$0.10	0.02	0.04	AEG Research
Small Retail	Refrigeration	Strategic Energy Management	sqft	New	0.00	3	\$0.16	0%	3%	\$0.10	0.00	0.00	AEG Research
Small Retail	Office Equipment	Strategic Energy Management	sqft	New	0.01	3	\$0.16	0%	3%	\$0.10	0.01	0.01	AEG Research
Small Retail	Cooling	Commissioning	sqft	New	0.18	3	\$0.66	16%	69%	\$0.36	1.64	2.40	AEG Research

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Small Retail	Heating	Commissioning	sqft	New	0.13	3	\$0.66	16%	69%	\$0.36	0.39	0.56	AEG Research
Small Retail	Ventilation	Commissioning	sqft	New	0.04	3	\$0.66	16%	69%	\$0.36	0.58	0.96	AEG Research
Small Retail	Water Heating	Commissioning	sqft	New	0.01	3	\$0.66	16%	69%	\$0.36	0.08	0.18	AEG Research
Small Retail	Interior Lighting	Commissioning	sqft	New	0.10	3	\$0.66	16%	69%	\$0.36	1.19	2.44	AEG Research
Small Retail	Exterior Lighting	Commissioning	sqft	New	0.03	3	\$0.66	16%	69%	\$0.36	0.33	0.78	AEG Research
Small Retail	Refrigeration	Commissioning	sqft	New	0.01	3	\$0.66	16%	69%	\$0.36	0.09	0.06	AEG Research
Small Retail	Cooling	Retrocommissioning	sqft	New	0.18	3	\$0.42	0%	0%	\$0.23	0.00	0.00	AEG Research
Small Retail	Heating	Retrocommissioning	sqft	New	0.13	3	\$0.42	0%	0%	\$0.23	0.00	0.00	AEG Research
Small Retail	Ventilation	Retrocommissioning	sqft	New	0.04	3	\$0.42	0%	0%	\$0.23	0.00	0.00	AEG Research
Small Retail	Water Heating	Retrocommissioning	sqft	New	0.01	3	\$0.42	0%	0%	\$0.23	0.00	0.00	AEG Research
Small Retail	Interior Lighting	Retrocommissioning	sqft	New	0.10	3	\$0.42	0%	0%	\$0.23	0.00	0.00	AEG Research
Small Retail	Exterior Lighting	Retrocommissioning	sqft	New	0.03	3	\$0.42	0%	0%	\$0.23	0.00	0.00	AEG Research
Small Retail	Refrigeration	Retrocommissioning	sqft	New	0.01	3	\$0.42	0%	0%	\$0.23	0.00	0.00	AEG Research
Small Retail	Interior Lighting	Fruit Storage - Lighting Controls	sqft	New	0.07	10	\$0.09	0%	0%	\$0.10	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Retail	Refrigeration	Fruit Storage Refrigeration Retrofit	sqft	New	0.02	10	\$1.09	0%	0%	\$8.65	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Retail	Refrigeration	Fruit Storage Refrigeration Tuneup	sqft	New	0.00	3	\$0.23	0%	0%	\$17.74	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Retail	Refrigeration	Fruit Storage Retrofit - CO2 Scrub	sqft	New	0.01	10	\$3.13	0%	0%	\$51.31	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Retail	Refrigeration	Fruit Storage Retrofit - Membrane	sqft	New	0.00	10	\$0.68	0%	0%	\$55.68	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Restaurant	Cooling	Insulation - Ceiling	sqft roof	Existing	0.03	45	\$1.28	15%	35%	\$0.25	1.35	1.64	Building Energy Simulation Tool
Restaurant	Heating	Insulation - Ceiling	sqft roof	Existing	0.24	45	\$1.28	15%	35%	\$0.25	1.60	1.97	Building Energy Simulation Tool
Restaurant	Ventilation	Insulation - Ceiling	sqft roof	Existing	0.12	45	\$1.28	15%	35%	\$0.25	5.40	7.26	Building Energy Simulation Tool
Restaurant	Cooling	Insulation - Ducting	sqft duct	Existing	0.03	20	\$0.84	15%	35%	\$0.00	0.28	0.36	Building Energy Simulation Tool

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Restaurant	Heating	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.84	15%	35%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Restaurant	Ventilation	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.84	15%	35%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Restaurant	Cooling	Building Shell - Cool Roofs	sqft roof	Existing	0.19	20	\$0.78	45%	50%	\$43.23	1.94	2.57	Building Energy Simulation Tool
Restaurant	Heating	Building Shell - Cool Roofs	sqft roof	Existing	-0.13	20	\$0.78	45%	50%	\$43.23	-0.21	-0.27	Building Energy Simulation Tool
Restaurant	Ventilation	Building Shell - Cool Roofs	sqft roof	Existing	-0.07	20	\$0.78	45%	50%	\$43.23	-0.73	-1.03	Building Energy Simulation Tool
Restaurant	Cooling	Insulation - Wall Cavity	sqft wall	Existing	-0.38	45	\$0.78	15%	35%	\$0.21	-9.62	-11.67	Building Energy Simulation Tool
Restaurant	Heating	Insulation - Wall Cavity	sqft wall	Existing	0.44	45	\$0.78	15%	35%	\$0.21	1.78	2.17	Building Energy Simulation Tool
Restaurant	Ventilation	Insulation - Wall Cavity	sqft wall	Existing	0.22	45	\$0.78	15%	35%	\$0.21	6.20	8.10	Building Energy Simulation Tool
Restaurant	Cooling	HVAC - Duct Repair and Sealing	tonCool	Existing	-2.74	18	\$0.57	15%	50%	\$10.00	-1.10	-1.45	Building Energy Simulation Tool
Restaurant	Heating	HVAC - Duct Repair and Sealing	tonCool	Existing	-4.32	18	\$0.57	15%	50%	\$10.00	-0.28	-0.36	Building Energy Simulation Tool
Restaurant	Ventilation	HVAC - Duct Repair and Sealing	tonCool	Existing	-2.26	18	\$0.57	15%	50%	\$10.00	-0.99	-1.38	Building Energy Simulation Tool
Restaurant	Cooling	Windows - High Efficiency Glazing	sqft window	Existing	6.05	30	\$35.93	48%	48%	\$0.20	0.00	0.00	7th Power Plan
Restaurant	Heating	Windows - High Efficiency Glazing	sqft window	Existing	6.93	30	\$35.93	48%	48%	\$0.20	0.00	0.00	7th Power Plan
Restaurant	Ventilation	Windows - High Efficiency Glazing	sqft window	Existing	1.99	30	\$35.93	48%	48%	\$0.20	0.00	0.00	7th Power Plan
Restaurant	Cooling	Chiller - Chilled Water Reset	ChillCtrl	Existing	0.00	10	\$884.85	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Restaurant	Cooling	Chiller - Chilled Water Variable-Flow System	HP cool	Existing	0.00	15	\$332.55	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Restaurant	Cooling	Chiller - Variable Speed Fans	HP fan	Existing	0.00	15	\$208.36	15%	75%	\$0.00	0.00	0.00	New Jersey TRM
Restaurant	Cooling	Water-Cooled Chiller - Condenser Water Reset	ChillCtrl	Existing	0.00	10	\$884.85	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Restaurant	Cooling	HVAC - Economizer	HP cool	Existing	107.94	10	\$168.42	18%	75%	\$0.20	58.78	77.78	AEG-BEST

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Restaurant	Heating	Space Heating - Heat Recovery Ventilator	CFM	Existing	0.34	14	\$5.08	3%	75%	\$1.60	6.09	8.44	7th Power Plan
Restaurant	Ventilation	Ventilation - ECM on VAV Boxes	sqft	Existing	0.38	18	\$0.25	15%	20%	\$0.06	4.35	5.73	7th Power Plan
Restaurant	Ventilation	Ventilation - Variable Speed Control	sqft	Existing	0.10	15	\$181.39	13%	50%	\$167.16	8.86	14.00	AEG-BEST
Restaurant	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.02	15	\$0.25	15%	25%	\$1.46	0.39	0.60	7th Power Plan
Restaurant	Cooling	Destratification Fans (HVLS)	Strat Fan	Existing	6,371.14	15	\$7,270.90	15%	15%	\$0.06	0.00	0.00	AEG Research
Restaurant	Heating	Destratification Fans (HVLS)	Strat Fan	Existing	6,805.01	15	\$7,270.90	15%	15%	\$0.06	0.00	0.00	AEG Research
Restaurant	Cooling	RTU - Maintenance	tonCool	Existing	49.60	3	\$35.00	15%	45%	\$0.22	15.21	22.31	AEG Research
Restaurant	Cooling	RTU - Advanced Controls	sqft	Existing	0.31	15	\$0.07	15%	45%	\$0.02	16.06	19.34	7th Power Plan
Restaurant	Cooling	RTU - Evaporative Precooler	tonCool	Existing	102.43	15	\$681.62	15%	75%	\$0.67	58.15	68.71	AEG Research
Restaurant	Cooling	Ductless Mini Split Heat Pump	tonCool	Existing	218.54	15	\$3,359.26	15%	75%	\$0.84	4.62	6.59	7th Power Plan
Restaurant	Heating	Ductless Mini Split Heat Pump	tonCool	Existing	180.15	15	\$3,359.26	15%	75%	\$0.84	0.35	0.45	7th Power Plan
Restaurant	Cooling	Thermostat - WiFi/Interactive	sqft	Existing	0.97	5	\$0.66	30%	40%	\$0.07	19.84	25.42	7th Power Plan
Restaurant	Heating	Thermostat - WiFi/Interactive	sqft	Existing	0.56	5	\$0.66	30%	40%	\$0.07	1.86	2.32	7th Power Plan
Restaurant	Ventilation	Thermostat - WiFi/Interactive	sqft	Existing	0.28	5	\$0.66	30%	40%	\$0.07	6.29	8.53	7th Power Plan
Restaurant	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	Existing	8.99	10	\$8.35	25%	65%	\$0.07	0.95	2.27	Illinois TRM
Restaurant	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	Existing	23.29	10	\$11.64	25%	65%	\$0.04	1.23	2.94	7th Power Plan
Restaurant	Water Heating	Water Heater - High Efficiency Circulation Pump	WHUnits	Existing	52.03	15	\$36.75	0%	0%	\$0.05	0.00	0.00	Hawaii TRM
Restaurant	Water Heating	Water Heater - Pipe Insulation	PipeFeet	Existing	249.57	15	\$14.88	16%	75%	\$0.00	16.59	35.91	AEG-BEST
Restaurant	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	Existing	46.29	4	\$144.04	25%	65%	\$0.48	4.79	11.17	7th Power Plan
Restaurant	Water Heating	Water Heater - Thermostat Setback	WHUnits	Existing	51.93	2	\$5.00	15%	75%	\$0.03	8.11	18.70	Illinois TRM
Restaurant	Water Heating	Water Heater - Solar System	PipeFeet	Existing	860.02	20	\$215.28	1%	30%	\$0.01	27.68	61.22	AEG-BEST

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Restaurant	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.46	15	\$0.35	3%	23%	\$0.06	26.62	37.38	7th Power Plan
Restaurant	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.64	15	\$0.58	3%	23%	\$0.07	36.08	51.63	7th Power Plan
Restaurant	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	Existing	84.91	15	\$54.41	1%	3%	\$0.05	0.86	1.59	7th Power Plan
Restaurant	Interior Lighting	Interior Lighting - Timeclocks and Timers	occ sens	Existing	0.00	8	\$111.67	7%	15%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Restaurant	Interior Lighting	Interior Lighting - Skylights	1000 sqft	Existing	0.00	15	\$1,006.35	15%	25%	\$0.00	0.00	0.00	AEG Research
Restaurant	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	1000 sqft	Existing	199.92	16	\$1,807.69	5%	15%	\$0.69	4.46	8.20	7th Power Plan
Restaurant	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	Existing	2,048.92	11	\$30.80	15%	50%	\$0.00	16.83	28.64	Illinois TRM
Restaurant	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	ELtg Watts	Existing	1.05	8	\$0.63	15%	25%	\$0.07	17.21	32.51	7th Power Plan
Restaurant	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	Existing	57.73	8	\$55.10	15%	25%	\$0.10	8.72	16.94	Pacific Gas and Electric Research
Restaurant	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	Existing	69.45	7	\$3,400.00	15%	30%	\$5.66	15.47	31.07	AEG Research
Restaurant	Refrigeration	Refrigeration - Anti-Sweat Heater	Fridge Feet	Existing	51.43	8	\$48.18	11%	75%	\$0.13	1.77	3.44	7th Power Plan
Restaurant	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	Existing	251.99	4	\$10.44	5%	35%	\$0.01	25.39	44.11	Michigan Energy Measures Database
Restaurant	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	Existing	1,719.80	16	\$165.20	11%	75%	\$0.01	117.64	192.58	7th Power Plan
Restaurant	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	Existing	70.53	15	\$335.85	0%	0%	\$0.44	0.00	0.00	7th Power Plan
Restaurant	Refrigeration	Refrigeration - Strip Curtain	WalkIn Door	Existing	79.31	2	\$10.41	11%	75%	\$0.05	44.37	76.26	7th Power Plan
Restaurant	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBtuh	Existing	0.99	15	\$45.43	6%	38%	\$3.92	48.15	80.71	Annual Energy Outlook, 2015
Restaurant	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	Existing	21.69	15	\$313.82	6%	38%	\$1.31	88.88	143.55	Annual Energy Outlook, 2015
Restaurant	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	Existing	1,074.32	10	\$506.05	11%	75%	\$0.06	72.36	123.84	Vermont TRM
Restaurant	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	Existing	30.59	6	\$45.41	0%	0%	\$0.24	0.00	0.00	7th Power Plan

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Restaurant	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	Existing	2.53	8	\$3.72	0%	0%	\$0.20	0.00	0.00	7th Power Plan
Restaurant	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	Existing	593.99	5	\$45.85	0%	0%	\$0.02	0.00	0.00	Illinois TRM
Restaurant	Refrigeration	Grocery - ECMs for Display Cases	Fridge Case	Existing	133.27	16	\$165.20	11%	75%	\$0.11	1.64	2.48	7th Power Plan
Restaurant	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	Existing	940.02	5	\$187.94	25%	75%	\$0.04	44.70	63.59	Illinois TRM
Restaurant	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	Existing	3,602.00	18	\$8,526.67	25%	50%	\$0.21	8.28	10.98	7th Power Plan
Restaurant	Office Equipment	Office Equipment - Smart Power Strips	Smart Strip	Existing	23.53	4	\$41.63	10%	50%	\$0.41	5.74	6.26	7th Power Plan
Restaurant	Cooling	Lodging - Guest Room Controls	LodgUnit	Existing	330.70	15	\$260.00	0%	0%	\$0.16	0.00	0.00	AEG-BEST
Restaurant	Heating	Lodging - Guest Room Controls	LodgUnit	Existing	-153.93	15	\$260.00	0%	0%	\$0.16	0.00	0.00	AEG-BEST
Restaurant	Office Equipment	Data Center - Best Practice Measures	sqft	Existing	0.05	5	\$0.01	0%	0%	\$0.02	0.00	0.00	com-datacenters-7p_v5p.xlsx
Restaurant	Cooling	Data Center - Commercially Available Measures	sqft	Existing	0.02	8	\$0.01	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Restaurant	Ventilation	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.01	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Restaurant	Interior Lighting	Data Center - Commercially Available Measures	sqft	Existing	0.04	8	\$0.01	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Restaurant	Office Equipment	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.01	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Restaurant	Cooling	Data Center - Cutting Edge Measures	sqft	Existing	0.07	6	\$0.01	0%	0%	\$0.02	0.00	0.00	com-datacenters-7p_v5p.xlsx
Restaurant	Office Equipment	Data Center - Cutting Edge Measures	sqft	Existing	0.00	6	\$0.01	0%	0%	\$0.02	0.00	0.00	com-datacenters-7p_v5p.xlsx
Restaurant	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	Existing	581.25	18	\$4,092.80	0%	0%	\$0.62	0.00	0.00	7th Power Plan
Restaurant	Miscellaneous	Pool Pump - Timer	perBldg	Existing	0.00	10	\$85.22	15%	75%	\$0.00	0.00	0.00	Ontario Power TRM
Restaurant	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	Existing	1,771.92	6	\$35.93	1%	3%	\$0.00	0.00	6.66	7th Power Plan
Restaurant	Cooling	Advanced New Construction Designs	sqft	Existing	1.63	25	\$4.11	0%	0%	\$0.05	0.00	0.00	AEG Research

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Restaurant	Heating	Advanced New Construction Designs	sqft	Existing	0.90	25	\$4.11	0%	0%	\$0.05	0.00	0.00	AEG Research
Restaurant	Ventilation	Advanced New Construction Designs	sqft	Existing	0.45	25	\$4.11	0%	0%	\$0.05	0.00	0.00	AEG Research
Restaurant	Water Heating	Advanced New Construction Designs	sqft	Existing	1.04	25	\$4.11	0%	0%	\$0.05	0.00	0.00	AEG Research
Restaurant	Interior Lighting	Advanced New Construction Designs	sqft	Existing	1.06	25	\$4.11	0%	0%	\$0.05	0.00	0.00	AEG Research
Restaurant	Exterior Lighting	Advanced New Construction Designs	sqft	Existing	0.48	25	\$4.11	0%	0%	\$0.05	0.00	0.00	AEG Research
Restaurant	Cooling	Strategic Energy Management	sqft	Existing	0.23	3	\$0.43	0%	0%	\$0.10	0.00	0.00	AEG Research
Restaurant	Heating	Strategic Energy Management	sqft	Existing	0.13	3	\$0.43	0%	0%	\$0.10	0.00	0.00	AEG Research
Restaurant	Ventilation	Strategic Energy Management	sqft	Existing	0.07	3	\$0.43	0%	0%	\$0.10	0.00	0.00	AEG Research
Restaurant	Water Heating	Strategic Energy Management	sqft	Existing	0.16	3	\$0.43	0%	0%	\$0.10	0.00	0.00	AEG Research
Restaurant	Interior Lighting	Strategic Energy Management	sqft	Existing	0.16	3	\$0.43	0%	0%	\$0.10	0.00	0.00	AEG Research
Restaurant	Exterior Lighting	Strategic Energy Management	sqft	Existing	0.07	3	\$0.43	0%	0%	\$0.10	0.00	0.00	AEG Research
Restaurant	Refrigeration	Strategic Energy Management	sqft	Existing	0.24	3	\$0.43	0%	0%	\$0.10	0.00	0.00	AEG Research
Restaurant	Office Equipment	Strategic Energy Management	sqft	Existing	0.03	3	\$0.43	0%	0%	\$0.10	0.00	0.00	AEG Research
Restaurant	Cooling	Commissioning	sqft	Existing	0.31	3	\$1.26	0%	0%	\$0.23	0.00	0.00	AEG Research
Restaurant	Heating	Commissioning	sqft	Existing	0.18	3	\$1.26	0%	0%	\$0.23	0.00	0.00	AEG Research
Restaurant	Ventilation	Commissioning	sqft	Existing	0.09	3	\$1.26	0%	0%	\$0.23	0.00	0.00	AEG Research
Restaurant	Water Heating	Commissioning	sqft	Existing	0.07	3	\$1.26	0%	0%	\$0.23	0.00	0.00	AEG Research
Restaurant	Interior Lighting	Commissioning	sqft	Existing	0.19	3	\$1.26	0%	0%	\$0.23	0.00	0.00	AEG Research
Restaurant	Exterior Lighting	Commissioning	sqft	Existing	0.08	3	\$1.26	0%	0%	\$0.23	0.00	0.00	AEG Research
Restaurant	Refrigeration	Commissioning	sqft	Existing	0.52	3	\$1.26	0%	0%	\$0.23	0.00	0.00	AEG Research
Restaurant	Cooling	Retrocommissioning	sqft	Existing	0.32	3	\$0.80	24%	79%	\$0.14	38.38	56.02	AEG Research
Restaurant	Heating	Retrocommissioning	sqft	Existing	0.18	3	\$0.80	24%	79%	\$0.14	3.44	4.94	AEG Research

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Restaurant	Ventilation	Retrocommissioning	sqft	Existing	0.09	3	\$0.80	24%	79%	\$0.14	12.39	19.21	AEG Research
Restaurant	Water Heating	Retrocommissioning	sqft	Existing	0.07	3	\$0.80	24%	79%	\$0.14	4.74	11.15	AEG Research
Restaurant	Interior Lighting	Retrocommissioning	sqft	Existing	0.19	3	\$0.80	24%	79%	\$0.14	22.79	43.39	AEG Research
Restaurant	Exterior Lighting	Retrocommissioning	sqft	Existing	0.08	3	\$0.80	24%	79%	\$0.14	10.01	19.75	AEG Research
Restaurant	Refrigeration	Retrocommissioning	sqft	Existing	0.55	3	\$0.80	24%	79%	\$0.14	74.00	113.66	AEG Research
Restaurant	Interior Lighting	Fruit Storage - Lighting Controls	sqft	Existing	0.13	10	\$0.09	0%	0%	\$0.06	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Restaurant	Refrigeration	Fruit Storage Refrigeration Retrofit	sqft	Existing	1.92	10	\$1.09	0%	0%	\$0.07	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Restaurant	Refrigeration	Fruit Storage Refrigeration Tuneup	sqft	Existing	0.47	3	\$0.23	0%	0%	\$0.14	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Restaurant	Refrigeration	Fruit Storage Retrofit - CO2 Scrub	sqft	Existing	0.89	10	\$3.13	0%	0%	\$0.40	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Restaurant	Refrigeration	Fruit Storage Retrofit - Membrane	sqft	Existing	0.18	10	\$0.68	0%	0%	\$0.43	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Restaurant	Cooling	Insulation - Ceiling	sqft roof	New	0.00	45	\$1.28	15%	50%	\$0.79	0.00	0.00	Building Energy Simulation Tool
Restaurant	Heating	Insulation - Ceiling	sqft roof	New	0.08	45	\$1.28	15%	50%	\$0.79	0.23	0.26	Building Energy Simulation Tool
Restaurant	Ventilation	Insulation - Ceiling	sqft roof	New	0.04	45	\$1.28	15%	50%	\$0.79	0.74	0.86	Building Energy Simulation Tool
Restaurant	Cooling	Insulation - Ducting	sqft duct	New	0.22	20	\$0.84	15%	50%	\$0.00	0.96	1.10	Building Energy Simulation Tool
Restaurant	Heating	Insulation - Ducting	sqft duct	New	0.00	20	\$0.84	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Restaurant	Ventilation	Insulation - Ducting	sqft duct	New	0.00	20	\$0.84	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Restaurant	Cooling	Building Shell - Cool Roofs	sqft roof	New	0.04	20	\$0.78	45%	50%	\$68.93	0.11	0.13	Building Energy Simulation Tool
Restaurant	Heating	Building Shell - Cool Roofs	sqft roof	New	-0.03	20	\$0.78	45%	50%	\$68.93	-0.01	-0.01	Building Energy Simulation Tool
Restaurant	Ventilation	Building Shell - Cool Roofs	sqft roof	New	-0.01	20	\$0.78	45%	50%	\$68.93	-0.04	-0.05	Building Energy Simulation Tool
Restaurant	Cooling	Insulation - Wall Cavity	sqft wall	New	-0.03	45	\$0.78	15%	50%	\$2.07	-0.28	-0.32	Building Energy Simulation Tool

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Restaurant	Heating	Insulation - Wall Cavity	sqft wall	New	0.04	45	\$0.78	15%	50%	\$2.07	0.06	0.07	Building Energy Simulation Tool
Restaurant	Ventilation	Insulation - Wall Cavity	sqft wall	New	0.02	45	\$0.78	15%	50%	\$2.07	0.21	0.24	Building Energy Simulation Tool
Restaurant	Cooling	HVAC - Duct Repair and Sealing	tonCool	New	0.31	18	\$0.57	15%	35%	\$10.00	0.02	0.02	Building Energy Simulation Tool
Restaurant	Heating	HVAC - Duct Repair and Sealing	tonCool	New	-2.44	18	\$0.57	15%	35%	\$10.00	-0.02	-0.02	Building Energy Simulation Tool
Restaurant	Ventilation	HVAC - Duct Repair and Sealing	tonCool	New	-1.10	18	\$0.57	15%	35%	\$10.00	-0.07	-0.08	Building Energy Simulation Tool
Restaurant	Cooling	Windows - High Efficiency Glazing	sqft window	New	5.62	30	\$35.93	66%	66%	\$0.21	0.00	0.00	7th Power Plan
Restaurant	Heating	Windows - High Efficiency Glazing	sqft window	New	6.41	30	\$35.93	66%	66%	\$0.21	0.00	0.00	7th Power Plan
Restaurant	Ventilation	Windows - High Efficiency Glazing	sqft window	New	1.63	30	\$35.93	66%	66%	\$0.21	0.00	0.00	7th Power Plan
Restaurant	Cooling	Chiller - Chilled Water Reset	ChillCtrl	New	0.00	10	\$884.85	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Restaurant	Cooling	Chiller - Chilled Water Variable-Flow System	HP cool	New	0.00	15	\$332.55	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Restaurant	Cooling	Chiller - Variable Speed Fans	HP fan	New	0.00	15	\$208.36	15%	75%	\$0.00	0.00	0.00	New Jersey TRM
Restaurant	Cooling	Water-Cooled Chiller - Condenser Water Reset	ChillCtrl	New	0.00	10	\$884.85	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Restaurant	Cooling	HVAC - Economizer	HP cool	New	100.59	10	\$168.42	18%	75%	\$0.21	5.83	7.69	AEG-BEST
Restaurant	Heating	Space Heating - Heat Recovery Ventilator	CFM	New	0.32	14	\$5.08	6%	75%	\$1.70	0.74	0.95	7th Power Plan
Restaurant	Ventilation	Ventilation - ECM on VAV Boxes	sqft	New	0.31	18	\$0.25	15%	20%	\$0.07	0.87	1.01	7th Power Plan
Restaurant	Ventilation	Ventilation - Variable Speed Control	sqft	New	0.09	15	\$181.39	19%	50%	\$194.48	0.95	1.26	AEG-BEST
Restaurant	Ventilation	Ventilation - Demand Controlled	sqft	New	0.01	15	\$0.25	15%	25%	\$1.70	0.05	0.06	7th Power Plan
Restaurant	Cooling	Destratification Fans (HVLS)	Strat Fan	New	5,997.67	15	\$7,270.90	15%	15%	\$0.06	0.00	0.00	AEG Research
Restaurant	Heating	Destratification Fans (HVLS)	Strat Fan	New	6,319.11	15	\$7,270.90	15%	15%	\$0.06	0.00	0.00	AEG Research
Restaurant	Cooling	RTU - Maintenance	tonCool	New	47.59	3	\$35.00	15%	45%	\$0.22	0.50	0.73	AEG Research
Restaurant	Cooling	RTU - Advanced Controls	sqft	New	0.29	15	\$0.07	15%	45%	\$0.02	3.26	3.84	7th Power Plan

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Restaurant	Cooling	RTU - Evaporative Precooler	tonCool	New	97.00	15	\$681.62	15%	75%	\$0.70	14.42	16.46	AEG Research
Restaurant	Cooling	Ductless Mini Split Heat Pump	tonCool	New	184.84	15	\$3,359.26	15%	75%	\$0.95	0.70	0.89	7th Power Plan
Restaurant	Heating	Ductless Mini Split Heat Pump	tonCool	New	161.85	15	\$3,359.26	15%	75%	\$0.95	0.05	0.07	7th Power Plan
Restaurant	Cooling	Thermostat - WiFi/Interactive	sqft	New	0.93	5	\$0.66	30%	40%	\$0.08	0.54	0.76	7th Power Plan
Restaurant	Heating	Thermostat - WiFi/Interactive	sqft	New	0.52	5	\$0.66	30%	40%	\$0.08	0.05	0.07	7th Power Plan
Restaurant	Ventilation	Thermostat - WiFi/Interactive	sqft	New	0.23	5	\$0.66	30%	40%	\$0.08	0.16	0.22	7th Power Plan
Restaurant	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	New	7.40	10	\$8.35	25%	65%	\$0.07	0.09	0.19	Illinois TRM
Restaurant	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	New	19.13	10	\$11.64	25%	65%	\$0.04	0.12	0.24	7th Power Plan
Restaurant	Water Heating	Water Heater - High Efficiency Circulation Pump	WHUnits	New	42.74	15	\$36.75	0%	0%	\$0.05	0.00	0.00	Hawaii TRM
Restaurant	Water Heating	Water Heater - Pipe Insulation	PipeFeet	New	199.09	15	\$14.88	1%	75%	\$0.00	2.72	5.02	AEG-BEST
Restaurant	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	New	38.08	4	\$144.04	25%	65%	\$0.48	0.19	0.44	7th Power Plan
Restaurant	Water Heating	Water Heater - Thermostat Setback	WHUnits	New	42.26	2	\$5.00	15%	75%	\$0.03	0.11	0.29	Illinois TRM
Restaurant	Water Heating	Water Heater - Solar System	PipeFeet	New	692.11	20	\$215.28	1%	30%	\$0.01	3.82	6.97	AEG-BEST
Restaurant	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.43	15	\$0.35	11%	23%	\$0.06	6.10	8.16	7th Power Plan
Restaurant	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.60	15	\$0.58	11%	23%	\$0.07	8.41	11.30	7th Power Plan
Restaurant	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	New	77.65	15	\$54.41	1%	3%	\$0.05	0.10	0.16	7th Power Plan
Restaurant	Interior Lighting	Interior Lighting - Timeclocks and Timers	occ sens	New	0.00	8	\$111.67	7%	15%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Restaurant	Interior Lighting	Interior Lighting - Skylights	1000 sqft	New	0.00	15	\$1,006.35	18%	25%	\$0.00	0.00	0.00	AEG Research
Restaurant	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	1000 sqft	New	177.88	16	\$1,807.69	5%	15%	\$0.68	0.61	0.96	7th Power Plan

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Restaurant	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	New	1,823.84	11	\$30.80	15%	50%	\$0.00	1.86	2.94	Illinois TRM
Restaurant	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	ELtg Watts	New	0.89	8	\$0.63	15%	25%	\$0.07	1.43	2.71	7th Power Plan
Restaurant	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	New	49.42	8	\$55.10	15%	25%	\$0.10	0.74	1.42	Pacific Gas and Electric Research
Restaurant	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	New	60.99	7	\$3,400.00	15%	30%	\$5.52	1.20	2.35	AEG Research
Restaurant	Refrigeration	Refrigeration - Anti-Sweat Heater	Fridge Feet	New	43.89	8	\$48.18	11%	75%	\$0.16	0.14	0.22	7th Power Plan
Restaurant	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	New	229.60	4	\$10.44	5%	35%	\$0.01	0.95	1.54	Michigan Energy Measures Database
Restaurant	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	New	1,511.44	16	\$165.20	11%	75%	\$0.01	15.62	21.46	7th Power Plan
Restaurant	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	New	69.99	15	\$335.85	0%	0%	\$0.48	0.00	0.00	7th Power Plan
Restaurant	Refrigeration	Refrigeration - Strip Curtain	Walkin Door	New	75.59	2	\$10.41	11%	75%	\$0.06	0.64	1.05	7th Power Plan
Restaurant	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	New	1.03	15	\$45.43	6%	38%	\$4.24	7.66	9.61	Annual Energy Outlook, 2015
Restaurant	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	New	21.98	15	\$313.82	6%	38%	\$1.41	13.49	16.98	Annual Energy Outlook, 2015
Restaurant	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	New	981.96	10	\$506.05	11%	75%	\$0.07	7.81	11.18	Vermont TRM
Restaurant	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	New	31.19	6	\$45.41	0%	0%	\$0.26	0.00	0.00	7th Power Plan
Restaurant	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	New	2.52	8	\$3.72	0%	0%	\$0.21	0.00	0.00	7th Power Plan
Restaurant	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	New	582.45	5	\$45.85	0%	0%	\$0.02	0.00	0.00	Illinois TRM
Restaurant	Refrigeration	Grocery - ECMs for Display Cases	Fridge Case	New	130.96	16	\$165.20	11%	75%	\$0.12	0.23	0.29	7th Power Plan
Restaurant	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	New	975.70	5	\$187.94	25%	75%	\$0.04	2.50	3.30	Illinois TRM
Restaurant	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	New	2,940.99	18	\$8,526.67	25%	50%	\$0.25	1.62	1.91	7th Power Plan
Restaurant	Office Equipment	Office Equipment - Smart Power Strips	Smart Strip	New	22.07	4	\$41.63	10%	50%	\$0.43	0.20	0.23	7th Power Plan

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Restaurant	Cooling	Lodging - Guest Room Controls	LodgUnit	New	271.13	15	\$260.00	0%	0%	\$0.20	0.00	0.00	AEG-BEST
Restaurant	Heating	Lodging - Guest Room Controls	LodgUnit	New	-141.54	15	\$260.00	0%	0%	\$0.20	0.00	0.00	AEG-BEST
Restaurant	Office Equipment	Data Center - Best Practice Measures	sqft	New	0.05	5	\$0.01	0%	0%	\$0.02	0.00	0.00	com-datacenters-7p_v5p.xlsx
Restaurant	Cooling	Data Center - Commercially Available Measures	sqft	New	0.01	8	\$0.01	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Restaurant	Ventilation	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.01	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Restaurant	Interior Lighting	Data Center - Commercially Available Measures	sqft	New	0.04	8	\$0.01	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Restaurant	Office Equipment	Data Center - Commercially Available Measures	sqft	New	0.01	8	\$0.01	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Restaurant	Cooling	Data Center - Cutting Edge Measures	sqft	New	0.07	6	\$0.01	0%	0%	\$0.02	0.00	0.00	com-datacenters-7p_v5p.xlsx
Restaurant	Office Equipment	Data Center - Cutting Edge Measures	sqft	New	0.00	6	\$0.01	0%	0%	\$0.02	0.00	0.00	com-datacenters-7p_v5p.xlsx
Restaurant	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	New	479.20	18	\$4,092.80	0%	0%	\$0.72	0.00	0.00	7th Power Plan
Restaurant	Miscellaneous	Pool Pump - Timer	perBldg	New	0.00	10	\$85.22	15%	75%	\$0.00	0.00	0.00	Ontario Power TRM
Restaurant	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	New	1,771.92	6	\$35.93	1%	3%	\$0.00	0.00	0.31	7th Power Plan
Restaurant	Cooling	Advanced New Construction Designs	sqft	New	1.53	25	\$4.11	10%	25%	\$0.05	12.96	14.68	AEG Research
Restaurant	Heating	Advanced New Construction Designs	sqft	New	0.83	25	\$4.11	10%	25%	\$0.05	1.13	1.28	AEG Research
Restaurant	Ventilation	Advanced New Construction Designs	sqft	New	0.37	25	\$4.11	10%	25%	\$0.05	3.66	4.24	AEG Research
Restaurant	Water Heating	Advanced New Construction Designs	sqft	New	0.86	25	\$4.11	10%	25%	\$0.05	4.77	6.57	AEG Research
Restaurant	Interior Lighting	Advanced New Construction Designs	sqft	New	0.98	25	\$4.11	10%	25%	\$0.05	8.89	11.16	AEG Research
Restaurant	Exterior Lighting	Advanced New Construction Designs	sqft	New	0.41	25	\$4.11	10%	25%	\$0.05	3.72	4.92	AEG Research
Restaurant	Cooling	Strategic Energy Management	sqft	New	0.22	3	\$0.40	0%	0%	\$0.10	0.00	0.00	AEG Research

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Restaurant	Heating	Strategic Energy Management	sqft	New	0.12	3	\$0.40	0%	0%	\$0.10	0.00	0.00	AEG Research
Restaurant	Ventilation	Strategic Energy Management	sqft	New	0.06	3	\$0.40	0%	0%	\$0.10	0.00	0.00	AEG Research
Restaurant	Water Heating	Strategic Energy Management	sqft	New	0.13	3	\$0.40	0%	0%	\$0.10	0.00	0.00	AEG Research
Restaurant	Interior Lighting	Strategic Energy Management	sqft	New	0.15	3	\$0.40	0%	0%	\$0.10	0.00	0.00	AEG Research
Restaurant	Exterior Lighting	Strategic Energy Management	sqft	New	0.06	3	\$0.40	0%	0%	\$0.10	0.00	0.00	AEG Research
Restaurant	Refrigeration	Strategic Energy Management	sqft	New	0.25	3	\$0.40	0%	0%	\$0.10	0.00	0.00	AEG Research
Restaurant	Office Equipment	Strategic Energy Management	sqft	New	0.02	3	\$0.40	0%	0%	\$0.10	0.00	0.00	AEG Research
Restaurant	Cooling	Commissioning	sqft	New	0.31	3	\$1.19	24%	79%	\$0.23	0.95	1.38	AEG Research
Restaurant	Heating	Commissioning	sqft	New	0.17	3	\$1.19	24%	79%	\$0.23	0.08	0.12	AEG Research
Restaurant	Ventilation	Commissioning	sqft	New	0.08	3	\$1.19	24%	79%	\$0.23	0.27	0.41	AEG Research
Restaurant	Water Heating	Commissioning	sqft	New	0.06	3	\$1.19	24%	79%	\$0.23	0.12	0.29	AEG Research
Restaurant	Interior Lighting	Commissioning	sqft	New	0.17	3	\$1.19	24%	79%	\$0.23	0.56	1.15	AEG Research
Restaurant	Exterior Lighting	Commissioning	sqft	New	0.07	3	\$1.19	24%	79%	\$0.23	0.24	0.53	AEG Research
Restaurant	Refrigeration	Commissioning	sqft	New	0.57	3	\$1.19	24%	79%	\$0.23	2.10	2.79	AEG Research
Restaurant	Cooling	Retrocommissioning	sqft	New	0.31	3	\$0.75	0%	0%	\$0.14	0.00	0.00	AEG Research
Restaurant	Heating	Retrocommissioning	sqft	New	0.17	3	\$0.75	0%	0%	\$0.14	0.00	0.00	AEG Research
Restaurant	Ventilation	Retrocommissioning	sqft	New	0.08	3	\$0.75	0%	0%	\$0.14	0.00	0.00	AEG Research
Restaurant	Water Heating	Retrocommissioning	sqft	New	0.06	3	\$0.75	0%	0%	\$0.14	0.00	0.00	AEG Research
Restaurant	Interior Lighting	Retrocommissioning	sqft	New	0.17	3	\$0.75	0%	0%	\$0.14	0.00	0.00	AEG Research
Restaurant	Exterior Lighting	Retrocommissioning	sqft	New	0.07	3	\$0.75	0%	0%	\$0.14	0.00	0.00	AEG Research
Restaurant	Refrigeration	Retrocommissioning	sqft	New	0.57	3	\$0.75	0%	0%	\$0.14	0.00	0.00	AEG Research
Restaurant	Interior Lighting	Fruit Storage - Lighting Controls	sqft	New	0.12	10	\$0.09	0%	0%	\$0.06	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx

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Restaurant	Refrigeration	Fruit Storage Refrigeration Retrofit	sqft	New	1.84	10	\$1.09	0%	0%	\$0.07	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Restaurant	Refrigeration	Fruit Storage Refrigeration Tuneup	sqft	New	0.47	3	\$0.23	0%	0%	\$0.15	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Restaurant	Refrigeration	Fruit Storage Retrofit - CO2 Scrub	sqft	New	0.88	10	\$3.13	0%	0%	\$0.44	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Restaurant	Refrigeration	Fruit Storage Retrofit - Membrane	sqft	New	0.18	10	\$0.68	0%	0%	\$0.48	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Grocery	Cooling	Insulation - Ceiling	sqft roof	Existing	0.47	45	\$1.28	15%	35%	\$0.20	17.03	21.47	Building Energy Simulation Tool
Grocery	Heating	Insulation - Ceiling	sqft roof	Existing	0.00	45	\$1.28	15%	35%	\$0.20	0.00	0.00	Building Energy Simulation Tool
Grocery	Ventilation	Insulation - Ceiling	sqft roof	Existing	0.00	45	\$1.28	15%	35%	\$0.20	0.01	0.01	Building Energy Simulation Tool
Grocery	Cooling	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.84	15%	35%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Grocery	Heating	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.84	15%	35%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Grocery	Ventilation	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.84	15%	35%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Grocery	Cooling	Building Shell - Cool Roofs	sqft roof	Existing	0.66	20	\$0.78	45%	50%	\$0.17	6.17	7.49	Building Energy Simulation Tool
Grocery	Heating	Building Shell - Cool Roofs	sqft roof	Existing	-0.18	20	\$0.78	45%	50%	\$0.17	-0.31	-0.37	Building Energy Simulation Tool
Grocery	Ventilation	Building Shell - Cool Roofs	sqft roof	Existing	-0.07	20	\$0.78	45%	50%	\$0.17	-0.73	-1.05	Building Energy Simulation Tool
Grocery	Cooling	Insulation - Wall Cavity	sqft wall	Existing	1.16	45	\$0.78	15%	35%	\$0.04	24.55	29.88	Building Energy Simulation Tool
Grocery	Heating	Insulation - Wall Cavity	sqft wall	Existing	0.14	45	\$0.78	15%	35%	\$0.04	0.56	0.66	Building Energy Simulation Tool
Grocery	Ventilation	Insulation - Wall Cavity	sqft wall	Existing	0.06	45	\$0.78	15%	35%	\$0.04	1.32	1.90	Building Energy Simulation Tool
Grocery	Cooling	HVAC - Duct Repair and Sealing	tonCool	Existing	2.52	18	\$0.57	15%	25%	\$0.02	0.16	0.19	Building Energy Simulation Tool
Grocery	Heating	HVAC - Duct Repair and Sealing	tonCool	Existing	0.12	18	\$0.57	15%	25%	\$0.02	0.00	0.00	Building Energy Simulation Tool
Grocery	Ventilation	HVAC - Duct Repair and Sealing	tonCool	Existing	0.05	18	\$0.57	15%	25%	\$0.02	0.00	0.00	Building Energy Simulation Tool

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Grocery	Cooling	Windows - High Efficiency Glazing	sqft window	Existing	3.99	30	\$35.93	48%	48%	\$0.29	0.00	0.00	7th Power Plan
Grocery	Heating	Windows - High Efficiency Glazing	sqft window	Existing	4.68	30	\$35.93	48%	48%	\$0.29	0.00	0.00	7th Power Plan
Grocery	Ventilation	Windows - High Efficiency Glazing	sqft window	Existing	1.09	30	\$35.93	48%	48%	\$0.29	0.00	0.00	7th Power Plan
Grocery	Cooling	Chiller - Chilled Water Reset	ChillCtrl	Existing	5,714.70	10	\$884.85	15%	75%	\$0.02	0.13	0.17	AEG-BEST
Grocery	Cooling	Chiller - Chilled Water Variable-Flow System	HP cool	Existing	533.49	15	\$332.55	15%	75%	\$0.06	1.68	2.28	AEG-BEST
Grocery	Cooling	Chiller - Variable Speed Fans	HP fan	Existing	1,357.12	15	\$208.36	15%	75%	\$0.02	0.43	0.58	New Jersey TRM
Grocery	Cooling	Water-Cooled Chiller - Condenser Water Reset	ChillCtrl	Existing	45,198.76	10	\$884.85	15%	75%	\$0.00	0.39	0.53	AEG-BEST
Grocery	Cooling	HVAC - Economizer	HP cool	Existing	200.03	10	\$168.42	18%	75%	\$0.11	55.93	75.45	AEG-BEST
Grocery	Heating	Space Heating - Heat Recovery Ventilator	CFM	Existing	2.24	14	\$5.08	3%	75%	\$0.25	7.42	9.46	7th Power Plan
Grocery	Ventilation	Ventilation - ECM on VAV Boxes	sqft	Existing	0.32	18	\$0.25	15%	20%	\$0.06	3.40	4.90	7th Power Plan
Grocery	Ventilation	Ventilation - Variable Speed Control	sqft	Existing	0.03	15	\$181.39	13%	50%	\$495.39	2.54	4.50	AEG-BEST
Grocery	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.01	15	\$0.25	15%	75%	\$1.58	1.87	3.21	7th Power Plan
Grocery	Cooling	Destratification Fans (HVLS)	Strat Fan	Existing	7,069.83	15	\$7,270.90	15%	15%	\$0.05	0.00	0.00	AEG Research
Grocery	Heating	Destratification Fans (HVLS)	Strat Fan	Existing	7,502.02	15	\$7,270.90	15%	15%	\$0.05	0.00	0.00	AEG Research
Grocery	Cooling	RTU - Maintenance	tonCool	Existing	91.63	3	\$35.00	15%	45%	\$0.11	15.94	24.05	AEG Research
Grocery	Cooling	RTU - Advanced Controls	sqft	Existing	0.17	15	\$0.07	15%	45%	\$0.04	8.45	10.39	7th Power Plan
Grocery	Cooling	RTU - Evaporative Precooler	tonCool	Existing	187.74	15	\$681.62	15%	75%	\$0.36	59.28	71.68	AEG Research
Grocery	Cooling	Ductless Mini Split Heat Pump	tonCool	Existing	399.53	15	\$3,359.26	15%	25%	\$0.50	0.64	0.95	7th Power Plan
Grocery	Heating	Ductless Mini Split Heat Pump	tonCool	Existing	252.82	15	\$3,359.26	15%	25%	\$0.50	0.34	0.44	7th Power Plan
Grocery	Cooling	Thermostat - WiFi/Interactive	sqft	Existing	1.06	5	\$0.66	30%	40%	\$0.07	18.47	24.51	7th Power Plan
Grocery	Heating	Thermostat - WiFi/Interactive	sqft	Existing	0.60	5	\$0.66	30%	40%	\$0.07	2.07	2.51	7th Power Plan

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Grocery	Ventilation	Thermostat - WiFi/Interactive	sqft	Existing	0.24	5	\$0.66	30%	40%	\$0.07	5.00	7.36	7th Power Plan
Grocery	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	Existing	10.73	10	\$8.35	25%	65%	\$0.06	0.34	0.83	Illinois TRM
Grocery	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	Existing	27.80	10	\$11.64	25%	65%	\$0.03	0.44	1.07	7th Power Plan
Grocery	Water Heating	Water Heater - High Efficiency Circulation Pump	WHUnits	Existing	51.57	15	\$36.75	0%	0%	\$0.05	0.00	0.00	Hawaii TRM
Grocery	Water Heating	Water Heater - Pipe Insulation	PipeFeet	Existing	298.03	15	\$14.88	16%	75%	\$0.00	5.95	13.03	AEG-BEST
Grocery	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	Existing	55.25	4	\$144.04	25%	65%	\$0.40	1.71	4.05	7th Power Plan
Grocery	Water Heating	Water Heater - Thermostat Setback	WHUnits	Existing	51.47	2	\$5.00	15%	75%	\$0.03	2.90	6.78	Illinois TRM
Grocery	Water Heating	Water Heater - Solar System	PipeFeet	Existing	1,027.26	20	\$215.28	1%	30%	\$0.01	9.92	22.22	AEG-BEST
Grocery	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.67	15	\$0.35	3%	23%	\$0.04	33.78	50.91	7th Power Plan
Grocery	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.92	15	\$0.58	3%	23%	\$0.05	45.51	70.17	7th Power Plan
Grocery	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	Existing	374.84	15	\$54.41	1%	3%	\$0.01	0.95	1.84	7th Power Plan
Grocery	Interior Lighting	Interior Lighting - Timeclocks and Timers	occ sens	Existing	0.00	8	\$111.67	7%	15%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Grocery	Interior Lighting	Interior Lighting - Skylights	1000 sqft	Existing	0.00	15	\$1,006.35	15%	30%	\$0.00	0.00	0.00	AEG Research
Grocery	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	1000 sqft	Existing	526.38	16	\$1,807.69	5%	15%	\$0.25	10.36	20.99	7th Power Plan
Grocery	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	Existing	5,515.02	11	\$30.80	15%	50%	\$0.00	40.67	74.18	Illinois TRM
Grocery	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	ELtg Watts	Existing	0.72	8	\$0.63	15%	25%	\$0.10	13.55	26.32	7th Power Plan
Grocery	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	Existing	53.35	8	\$55.10	15%	25%	\$0.11	6.85	13.72	Pacific Gas and Electric Research
Grocery	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	Existing	63.76	7	\$3,400.00	15%	30%	\$6.16	12.02	25.07	AEG Research
Grocery	Refrigeration	Refrigeration - Anti-Sweat Heater	Fridge Feet	Existing	170.30	8	\$48.18	33%	75%	\$0.04	38.89	79.74	7th Power Plan

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Grocery	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	Existing	55.36	4	\$10.44	27%	35%	\$0.04	5.56	10.76	Michigan Energy Measures Database
Grocery	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	Existing	194.78	16	\$165.20	33%	75%	\$0.07	19.92	30.87	7th Power Plan
Grocery	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	Existing	521.63	15	\$335.85	23%	75%	\$0.07	651.54	970.33	7th Power Plan
Grocery	Refrigeration	Refrigeration - Strip Curtain	Walkin Door	Existing	81.76	2	\$10.41	33%	75%	\$0.05	5.83	10.59	7th Power Plan
Grocery	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	Existing	6.50	15	\$45.43	16%	38%	\$0.59	88.11	153.32	Annual Energy Outlook, 2015
Grocery	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	Existing	142.11	15	\$313.82	16%	38%	\$0.20	163.58	272.86	Annual Energy Outlook, 2015
Grocery	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	Existing	119.74	10	\$506.05	33%	75%	\$0.44	11.87	19.72	Vermont TRM
Grocery	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	Existing	42.61	6	\$45.41	20%	75%	\$0.16	78.39	132.67	7th Power Plan
Grocery	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	Existing	7.94	8	\$3.72	20%	75%	\$0.06	5.56	9.11	7th Power Plan
Grocery	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	Existing	2,077.73	5	\$45.85	20%	75%	\$0.00	196.50	272.23	Illinois TRM
Grocery	Refrigeration	Grocery - ECMs for Display Cases	Fridge Case	Existing	185.09	16	\$165.20	33%	75%	\$0.08	33.29	54.27	7th Power Plan
Grocery	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	Existing	907.04	5	\$187.94	25%	75%	\$0.04	10.56	15.78	Illinois TRM
Grocery	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	Existing	3,072.23	18	\$8,526.67	25%	50%	\$0.23	6.48	9.41	7th Power Plan
Grocery	Office Equipment	Office Equipment - Smart Power Strips	Smart Strip	Existing	12.88	4	\$41.63	10%	50%	\$0.74	2.82	3.37	7th Power Plan
Grocery	Cooling	Lodging - Guest Room Controls	LodgUnit	Existing	359.54	15	\$260.00	0%	0%	\$0.12	0.00	0.00	AEG-BEST
Grocery	Heating	Lodging - Guest Room Controls	LodgUnit	Existing	-131.44	15	\$260.00	0%	0%	\$0.12	0.00	0.00	AEG-BEST
Grocery	Office Equipment	Data Center - Best Practice Measures	sqft	Existing	0.02	5	\$0.00	0%	0%	\$0.02	0.00	0.00	com-datacenters-7p_v5p.xlsx
Grocery	Cooling	Data Center - Commercially Available Measures	sqft	Existing	0.02	8	\$0.01	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Grocery	Ventilation	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.01	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Grocery	Interior Lighting	Data Center - Commercially Available Measures	sqft	Existing	0.05	8	\$0.01	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Grocery	Office Equipment	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.01	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Grocery	Cooling	Data Center - Cutting Edge Measures	sqft	Existing	0.08	6	\$0.01	0%	0%	\$0.02	0.00	0.00	com-datacenters-7p_v5p.xlsx
Grocery	Office Equipment	Data Center - Cutting Edge Measures	sqft	Existing	0.00	6	\$0.01	0%	0%	\$0.02	0.00	0.00	com-datacenters-7p_v5p.xlsx
Grocery	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	Existing	1,838.53	18	\$4,092.80	0%	0%	\$0.18	0.00	0.00	7th Power Plan
Grocery	Miscellaneous	Pool Pump - Timer	perBldg	Existing	0.00	10	\$85.22	15%	75%	\$0.00	0.00	0.00	Ontario Power TRM
Grocery	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	Existing	7,807.14	6	\$35.93	1%	3%	\$0.00	0.00	7.57	7th Power Plan
Grocery	Cooling	Advanced New Construction Designs	sqft	Existing	1.73	25	\$4.11	0%	0%	\$0.06	0.00	0.00	AEG Research
Grocery	Heating	Advanced New Construction Designs	sqft	Existing	0.99	25	\$4.11	0%	0%	\$0.06	0.00	0.00	AEG Research
Grocery	Ventilation	Advanced New Construction Designs	sqft	Existing	0.38	25	\$4.11	0%	0%	\$0.06	0.00	0.00	AEG Research
Grocery	Water Heating	Advanced New Construction Designs	sqft	Existing	0.34	25	\$4.11	0%	0%	\$0.06	0.00	0.00	AEG Research
Grocery	Interior Lighting	Advanced New Construction Designs	sqft	Existing	1.29	25	\$4.11	0%	0%	\$0.06	0.00	0.00	AEG Research
Grocery	Exterior Lighting	Advanced New Construction Designs	sqft	Existing	0.40	25	\$4.11	0%	0%	\$0.06	0.00	0.00	AEG Research
Grocery	Cooling	Strategic Energy Management	sqft	Existing	0.25	3	\$0.58	4%	27%	\$0.10	10.70	16.53	AEG Research
Grocery	Heating	Strategic Energy Management	sqft	Existing	0.14	3	\$0.58	4%	27%	\$0.10	1.19	1.64	AEG Research
Grocery	Ventilation	Strategic Energy Management	sqft	Existing	0.06	3	\$0.58	4%	27%	\$0.10	2.88	5.07	AEG Research
Grocery	Water Heating	Strategic Energy Management	sqft	Existing	0.05	3	\$0.58	4%	27%	\$0.10	1.52	3.65	AEG Research
Grocery	Interior Lighting	Strategic Energy Management	sqft	Existing	0.19	3	\$0.58	4%	27%	\$0.10	8.61	18.00	AEG Research
Grocery	Exterior Lighting	Strategic Energy Management	sqft	Existing	0.06	3	\$0.58	4%	27%	\$0.10	2.77	5.73	AEG Research

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Grocery	Refrigeration	Strategic Energy Management	sqft	Existing	0.67	3	\$0.58	4%	27%	\$0.10	33.51	57.59	AEG Research
Grocery	Office Equipment	Strategic Energy Management	sqft	Existing	0.01	3	\$0.58	4%	27%	\$0.10	0.88	1.08	AEG Research
Grocery	Cooling	Commissioning	sqft	Existing	0.34	3	\$1.24	0%	0%	\$0.13	0.00	0.00	AEG Research
Grocery	Heating	Commissioning	sqft	Existing	0.19	3	\$1.24	0%	0%	\$0.13	0.00	0.00	AEG Research
Grocery	Ventilation	Commissioning	sqft	Existing	0.08	3	\$1.24	0%	0%	\$0.13	0.00	0.00	AEG Research
Grocery	Water Heating	Commissioning	sqft	Existing	0.02	3	\$1.24	0%	0%	\$0.13	0.00	0.00	AEG Research
Grocery	Interior Lighting	Commissioning	sqft	Existing	0.22	3	\$1.24	0%	0%	\$0.13	0.00	0.00	AEG Research
Grocery	Exterior Lighting	Commissioning	sqft	Existing	0.07	3	\$1.24	0%	0%	\$0.13	0.00	0.00	AEG Research
Grocery	Refrigeration	Commissioning	sqft	Existing	1.54	3	\$1.24	0%	0%	\$0.13	0.00	0.00	AEG Research
Grocery	Cooling	Retrocommissioning	sqft	Existing	0.35	3	\$0.79	10%	62%	\$0.08	34.71	52.48	AEG Research
Grocery	Heating	Retrocommissioning	sqft	Existing	0.20	3	\$0.79	10%	62%	\$0.08	3.87	5.21	AEG Research
Grocery	Ventilation	Retrocommissioning	sqft	Existing	0.08	3	\$0.79	10%	62%	\$0.08	9.33	16.10	AEG Research
Grocery	Water Heating	Retrocommissioning	sqft	Existing	0.02	3	\$0.79	10%	62%	\$0.08	1.60	3.82	AEG Research
Grocery	Interior Lighting	Retrocommissioning	sqft	Existing	0.23	3	\$0.79	10%	62%	\$0.08	23.12	47.51	AEG Research
Grocery	Exterior Lighting	Retrocommissioning	sqft	Existing	0.07	3	\$0.79	10%	62%	\$0.08	7.43	15.12	AEG Research
Grocery	Refrigeration	Retrocommissioning	sqft	Existing	1.62	3	\$0.79	10%	62%	\$0.08	185.52	307.43	AEG Research
Grocery	Interior Lighting	Fruit Storage - Lighting Controls	sqft	Existing	0.16	10	\$0.09	0%	0%	\$0.05	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Grocery	Refrigeration	Fruit Storage Refrigeration Retrofit	sqft	Existing	6.27	10	\$1.09	0%	0%	\$0.02	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Grocery	Refrigeration	Fruit Storage Refrigeration Tuneup	sqft	Existing	1.35	3	\$0.23	0%	0%	\$0.05	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Grocery	Refrigeration	Fruit Storage Retrofit - CO2 Scrub	sqft	Existing	2.54	10	\$3.13	0%	0%	\$0.13	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Grocery	Refrigeration	Fruit Storage Retrofit - Membrane	sqft	Existing	0.51	10	\$0.68	0%	0%	\$0.14	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Grocery	Cooling	Insulation - Ceiling	sqft roof	New	0.10	45	\$1.28	15%	50%	\$0.83	1.72	1.96	Building Energy Simulation Tool

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Grocery	Heating	Insulation - Ceiling	sqft roof	New	0.01	45	\$1.28	15%	50%	\$0.83	0.03	0.04	Building Energy Simulation Tool
Grocery	Ventilation	Insulation - Ceiling	sqft roof	New	0.00	45	\$1.28	15%	50%	\$0.83	0.06	0.08	Building Energy Simulation Tool
Grocery	Cooling	Insulation - Ducting	sqft duct	New	0.00	20	\$0.84	15%	25%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Grocery	Heating	Insulation - Ducting	sqft duct	New	0.00	20	\$0.84	15%	25%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Grocery	Ventilation	Insulation - Ducting	sqft duct	New	0.00	20	\$0.84	15%	25%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Grocery	Cooling	Building Shell - Cool Roofs	sqft roof	New	0.69	20	\$0.78	45%	50%	\$0.11	1.74	1.97	Building Energy Simulation Tool
Grocery	Heating	Building Shell - Cool Roofs	sqft roof	New	-0.04	20	\$0.78	45%	50%	\$0.11	-0.02	-0.02	Building Energy Simulation Tool
Grocery	Ventilation	Building Shell - Cool Roofs	sqft roof	New	-0.01	20	\$0.78	45%	50%	\$0.11	-0.04	-0.04	Building Energy Simulation Tool
Grocery	Cooling	Insulation - Wall Cavity	sqft wall	New	0.11	45	\$0.78	15%	50%	\$0.50	1.39	1.60	Building Energy Simulation Tool
Grocery	Heating	Insulation - Wall Cavity	sqft wall	New	0.01	45	\$0.78	15%	50%	\$0.50	0.01	0.02	Building Energy Simulation Tool
Grocery	Ventilation	Insulation - Wall Cavity	sqft wall	New	0.00	45	\$0.78	15%	50%	\$0.50	0.03	0.04	Building Energy Simulation Tool
Grocery	Cooling	HVAC - Duct Repair and Sealing	tonCool	New	-6.59	18	\$0.57	15%	25%	\$10.00	-0.10	-0.12	Building Energy Simulation Tool
Grocery	Heating	HVAC - Duct Repair and Sealing	tonCool	New	0.25	18	\$0.57	15%	25%	\$10.00	0.00	0.00	Building Energy Simulation Tool
Grocery	Ventilation	HVAC - Duct Repair and Sealing	tonCool	New	0.07	18	\$0.57	15%	25%	\$10.00	0.00	0.00	Building Energy Simulation Tool
Grocery	Cooling	Windows - High Efficiency Glazing	sqft window	New	3.32	30	\$35.93	66%	66%	\$0.39	0.00	0.00	7th Power Plan
Grocery	Heating	Windows - High Efficiency Glazing	sqft window	New	3.38	30	\$35.93	66%	66%	\$0.39	0.00	0.00	7th Power Plan
Grocery	Ventilation	Windows - High Efficiency Glazing	sqft window	New	0.52	30	\$35.93	66%	66%	\$0.39	0.00	0.00	7th Power Plan
Grocery	Cooling	Chiller - Chilled Water Reset	ChillCtrl	New	4,761.74	10	\$884.85	15%	75%	\$0.02	0.01	0.02	AEG-BEST
Grocery	Cooling	Chiller - Chilled Water Variable-Flow System	HP cool	New	450.14	15	\$332.55	15%	75%	\$0.08	0.22	0.28	AEG-BEST

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Grocery	Cooling	Chiller - Variable Speed Fans	HP fan	New	1,130.62	15	\$208.36	15%	75%	\$0.02	0.06	0.07	New Jersey TRM
Grocery	Cooling	Water-Cooled Chiller - Condenser Water Reset	ChillCtrl	New	37,562.47	10	\$884.85	15%	75%	\$0.00	0.04	0.05	AEG-BEST
Grocery	Cooling	HVAC - Economizer	HP cool	New	217.31	10	\$168.42	18%	75%	\$0.10	7.47	9.62	AEG-BEST
Grocery	Heating	Space Heating - Heat Recovery Ventilator	CFM	New	2.09	14	\$5.08	6%	75%	\$0.27	0.97	1.21	7th Power Plan
Grocery	Ventilation	Ventilation - ECM on VAV Boxes	sqft	New	0.20	18	\$0.25	15%	20%	\$0.09	0.64	0.78	7th Power Plan
Grocery	Ventilation	Ventilation - Variable Speed Control	sqft	New	0.02	15	\$181.39	19%	50%	\$695.37	0.26	0.37	AEG-BEST
Grocery	Ventilation	Ventilation - Demand Controlled	sqft	New	0.01	15	\$0.25	15%	75%	\$2.21	0.22	0.31	7th Power Plan
Grocery	Cooling	Destratification Fans (HVLS)	Strat Fan	New	7,548.49	15	\$7,270.90	15%	15%	\$0.05	0.00	0.00	AEG Research
Grocery	Heating	Destratification Fans (HVLS)	Strat Fan	New	7,019.97	15	\$7,270.90	15%	15%	\$0.05	0.00	0.00	AEG Research
Grocery	Cooling	RTU - Maintenance	tonCool	New	102.75	3	\$35.00	15%	45%	\$0.11	0.71	1.02	AEG Research
Grocery	Cooling	RTU - Advanced Controls	sqft	New	0.18	15	\$0.07	15%	45%	\$0.04	2.28	2.69	7th Power Plan
Grocery	Cooling	RTU - Evaporative Precooler	tonCool	New	209.41	15	\$681.62	15%	75%	\$0.33	20.21	22.94	AEG Research
Grocery	Cooling	Ductless Mini Split Heat Pump	tonCool	New	350.98	15	\$3,359.26	15%	25%	\$0.57	0.12	0.15	7th Power Plan
Grocery	Heating	Ductless Mini Split Heat Pump	tonCool	New	243.24	15	\$3,359.26	15%	25%	\$0.57	0.06	0.08	7th Power Plan
Grocery	Cooling	Thermostat - WiFi/Interactive	sqft	New	1.17	5	\$0.66	30%	40%	\$0.07	0.69	0.95	7th Power Plan
Grocery	Heating	Thermostat - WiFi/Interactive	sqft	New	0.57	5	\$0.66	30%	40%	\$0.07	0.06	0.08	7th Power Plan
Grocery	Ventilation	Thermostat - WiFi/Interactive	sqft	New	0.15	5	\$0.66	30%	40%	\$0.07	0.12	0.19	7th Power Plan
Grocery	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	New	8.92	10	\$8.35	25%	65%	\$0.06	0.04	0.08	Illinois TRM
Grocery	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	New	23.08	10	\$11.64	25%	65%	\$0.03	0.05	0.10	7th Power Plan
Grocery	Water Heating	Water Heater - High Efficiency Circulation Pump	WHUnits	New	42.82	15	\$36.75	0%	0%	\$0.05	0.00	0.00	Hawaii TRM
Grocery	Water Heating	Water Heater - Pipe Insulation	PipeFeet	New	240.22	15	\$14.88	1%	75%	\$0.00	1.12	2.06	AEG-BEST

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Grocery	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	New	46.29	4	\$144.04	25%	65%	\$0.40	0.08	0.18	7th Power Plan
Grocery	Water Heating	Water Heater - Thermostat Setback	WHUnits	New	42.67	2	\$5.00	15%	75%	\$0.03	0.05	0.12	Illinois TRM
Grocery	Water Heating	Water Heater - Solar System	PipeFeet	New	835.41	20	\$215.28	1%	30%	\$0.01	1.57	2.87	AEG-BEST
Grocery	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.62	15	\$0.35	11%	23%	\$0.04	8.99	12.44	7th Power Plan
Grocery	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.85	15	\$0.58	11%	23%	\$0.05	12.35	17.19	7th Power Plan
Grocery	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	New	345.08	15	\$54.41	1%	3%	\$0.01	0.13	0.21	7th Power Plan
Grocery	Interior Lighting	Interior Lighting - Timeclocks and Timers	occ sens	New	0.00	8	\$111.67	7%	15%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Grocery	Interior Lighting	Interior Lighting - Skylights	1000 sqft	New	0.00	15	\$1,006.35	18%	33%	\$0.00	0.00	0.00	AEG Research
Grocery	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	1000 sqft	New	482.02	16	\$1,807.69	5%	15%	\$0.25	1.75	2.83	7th Power Plan
Grocery	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	New	4,965.03	11	\$30.80	15%	50%	\$0.00	5.28	8.71	Illinois TRM
Grocery	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	ELtg Watts	New	0.61	8	\$0.63	15%	25%	\$0.10	1.29	2.43	7th Power Plan
Grocery	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	New	45.64	8	\$55.10	15%	25%	\$0.11	0.67	1.27	Pacific Gas and Electric Research
Grocery	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	New	56.23	7	\$3,400.00	15%	30%	\$6.10	1.09	2.10	AEG Research
Grocery	Refrigeration	Refrigeration - Anti-Sweat Heater	Fridge Feet	New	151.46	8	\$48.18	41%	75%	\$0.05	3.25	5.04	7th Power Plan
Grocery	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	New	48.32	4	\$10.44	35%	35%	\$0.05	0.00	0.00	Michigan Energy Measures Database
Grocery	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	New	184.63	16	\$165.20	41%	75%	\$0.09	2.78	3.20	7th Power Plan
Grocery	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	New	487.15	15	\$335.85	11%	75%	\$0.07	120.58	154.43	7th Power Plan
Grocery	Refrigeration	Refrigeration - Strip Curtain	Walkin Door	New	81.03	2	\$10.41	41%	75%	\$0.06	0.08	0.13	7th Power Plan
Grocery	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBtuh	New	6.72	15	\$45.43	21%	38%	\$0.65	12.86	16.29	Annual Energy Outlook, 2015

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Grocery	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	New	142.14	15	\$313.82	21%	38%	\$0.22	22.53	28.66	Annual Energy Outlook, 2015
Grocery	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	New	119.87	10	\$506.05	41%	75%	\$0.50	1.39	1.64	Vermont TRM
Grocery	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	New	43.53	6	\$45.41	20%	75%	\$0.18	6.76	9.22	7th Power Plan
Grocery	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	New	7.91	8	\$3.72	20%	75%	\$0.07	0.62	0.82	7th Power Plan
Grocery	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	New	1,941.90	5	\$45.85	20%	75%	\$0.01	11.15	15.05	Illinois TRM
Grocery	Refrigeration	Grocery - ECMs for Display Cases	Fridge Case	New	183.62	16	\$165.20	41%	75%	\$0.09	4.62	5.80	7th Power Plan
Grocery	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	New	973.36	5	\$187.94	25%	75%	\$0.04	0.72	0.94	Illinois TRM
Grocery	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	New	1,890.55	18	\$8,526.67	25%	50%	\$0.32	1.21	1.49	7th Power Plan
Grocery	Office Equipment	Office Equipment - Smart Power Strips	Smart Strip	New	12.42	4	\$41.63	10%	50%	\$0.76	0.12	0.15	7th Power Plan
Grocery	Cooling	Lodging - Guest Room Controls	LodgUnit	New	298.97	15	\$260.00	0%	0%	\$0.15	0.00	0.00	AEG-BEST
Grocery	Heating	Lodging - Guest Room Controls	LodgUnit	New	-122.60	15	\$260.00	0%	0%	\$0.15	0.00	0.00	AEG-BEST
Grocery	Office Equipment	Data Center - Best Practice Measures	sqft	New	0.02	5	\$0.00	0%	0%	\$0.02	0.00	0.00	com-datacenters-7p_v5p.xlsx
Grocery	Cooling	Data Center - Commercially Available Measures	sqft	New	0.02	8	\$0.01	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Grocery	Ventilation	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.01	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Grocery	Interior Lighting	Data Center - Commercially Available Measures	sqft	New	0.04	8	\$0.01	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Grocery	Office Equipment	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.01	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Grocery	Cooling	Data Center - Cutting Edge Measures	sqft	New	0.08	6	\$0.01	0%	0%	\$0.02	0.00	0.00	com-datacenters-7p_v5p.xlsx
Grocery	Office Equipment	Data Center - Cutting Edge Measures	sqft	New	0.00	6	\$0.01	0%	0%	\$0.02	0.00	0.00	com-datacenters-7p_v5p.xlsx
Grocery	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	New	1,131.37	18	\$4,092.80	0%	0%	\$0.26	0.00	0.00	7th Power Plan

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Grocery	Miscellaneous	Pool Pump - Timer	perBldg	New	0.00	10	\$85.22	15%	75%	\$0.00	0.00	0.00	Ontario Power TRM
Grocery	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	New	7,807.14	6	\$35.93	1%	3%	\$0.00	0.00	0.40	7th Power Plan
Grocery	Cooling	Advanced New Construction Designs	sqft	New	1.90	25	\$4.11	10%	15%	\$0.06	5.34	6.02	AEG Research
Grocery	Heating	Advanced New Construction Designs	sqft	New	0.93	25	\$4.11	10%	15%	\$0.06	0.48	0.54	AEG Research
Grocery	Ventilation	Advanced New Construction Designs	sqft	New	0.25	25	\$4.11	10%	15%	\$0.06	0.93	1.13	AEG Research
Grocery	Water Heating	Advanced New Construction Designs	sqft	New	0.29	25	\$4.11	10%	15%	\$0.06	0.65	0.89	AEG Research
Grocery	Interior Lighting	Advanced New Construction Designs	sqft	New	1.19	25	\$4.11	10%	15%	\$0.06	3.76	4.90	AEG Research
Grocery	Exterior Lighting	Advanced New Construction Designs	sqft	New	0.35	25	\$4.11	10%	15%	\$0.06	1.10	1.45	AEG Research
Grocery	Cooling	Strategic Energy Management	sqft	New	0.28	3	\$0.55	4%	27%	\$0.10	0.37	0.52	AEG Research
Grocery	Heating	Strategic Energy Management	sqft	New	0.14	3	\$0.55	4%	27%	\$0.10	0.03	0.05	AEG Research
Grocery	Ventilation	Strategic Energy Management	sqft	New	0.04	3	\$0.55	4%	27%	\$0.10	0.07	0.10	AEG Research
Grocery	Water Heating	Strategic Energy Management	sqft	New	0.04	3	\$0.55	4%	27%	\$0.10	0.05	0.11	AEG Research
Grocery	Interior Lighting	Strategic Energy Management	sqft	New	0.18	3	\$0.55	4%	27%	\$0.10	0.27	0.54	AEG Research
Grocery	Exterior Lighting	Strategic Energy Management	sqft	New	0.05	3	\$0.55	4%	27%	\$0.10	0.08	0.17	AEG Research
Grocery	Refrigeration	Strategic Energy Management	sqft	New	0.73	3	\$0.55	4%	27%	\$0.10	1.17	1.65	AEG Research
Grocery	Office Equipment	Strategic Energy Management	sqft	New	0.01	3	\$0.55	4%	27%	\$0.10	0.02	0.03	AEG Research
Grocery	Cooling	Commissioning	sqft	New	0.39	3	\$1.22	10%	62%	\$0.13	1.14	1.64	AEG Research
Grocery	Heating	Commissioning	sqft	New	0.19	3	\$1.22	10%	62%	\$0.13	0.10	0.14	AEG Research
Grocery	Ventilation	Commissioning	sqft	New	0.05	3	\$1.22	10%	62%	\$0.13	0.20	0.33	AEG Research
Grocery	Water Heating	Commissioning	sqft	New	0.02	3	\$1.22	10%	62%	\$0.13	0.05	0.11	AEG Research
Grocery	Interior Lighting	Commissioning	sqft	New	0.21	3	\$1.22	10%	62%	\$0.13	0.69	1.42	AEG Research

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Grocery	Exterior Lighting	Commissioning	sqft	New	0.06	3	\$1.22	10%	62%	\$0.13	0.20	0.45	AEG Research
Grocery	Refrigeration	Commissioning	sqft	New	1.68	3	\$1.22	10%	62%	\$0.13	6.11	8.59	AEG Research
Grocery	Cooling	Retrocommissioning	sqft	New	0.39	3	\$0.78	0%	0%	\$0.08	0.00	0.00	AEG Research
Grocery	Heating	Retrocommissioning	sqft	New	0.19	3	\$0.78	0%	0%	\$0.08	0.00	0.00	AEG Research
Grocery	Ventilation	Retrocommissioning	sqft	New	0.05	3	\$0.78	0%	0%	\$0.08	0.00	0.00	AEG Research
Grocery	Water Heating	Retrocommissioning	sqft	New	0.02	3	\$0.78	0%	0%	\$0.08	0.00	0.00	AEG Research
Grocery	Interior Lighting	Retrocommissioning	sqft	New	0.21	3	\$0.78	0%	0%	\$0.08	0.00	0.00	AEG Research
Grocery	Exterior Lighting	Retrocommissioning	sqft	New	0.06	3	\$0.78	0%	0%	\$0.08	0.00	0.00	AEG Research
Grocery	Refrigeration	Retrocommissioning	sqft	New	1.68	3	\$0.78	0%	0%	\$0.08	0.00	0.00	AEG Research
Grocery	Interior Lighting	Fruit Storage - Lighting Controls	sqft	New	0.15	10	\$0.09	0%	0%	\$0.05	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Grocery	Refrigeration	Fruit Storage Refrigeration Retrofit	sqft	New	5.80	10	\$1.09	0%	0%	\$0.02	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Grocery	Refrigeration	Fruit Storage Refrigeration Tuneup	sqft	New	1.37	3	\$0.23	0%	0%	\$0.05	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Grocery	Refrigeration	Fruit Storage Retrofit - CO2 Scrub	sqft	New	2.56	10	\$3.13	0%	0%	\$0.15	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Grocery	Refrigeration	Fruit Storage Retrofit - Membrane	sqft	New	0.51	10	\$0.68	0%	0%	\$0.16	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Health	Cooling	Insulation - Ceiling	sqft roof	Existing	0.20	45	\$1.28	15%	35%	\$0.13	5.17	8.35	Building Energy Simulation Tool
Health	Heating	Insulation - Ceiling	sqft roof	Existing	0.39	45	\$1.28	15%	35%	\$0.13	0.65	0.77	Building Energy Simulation Tool
Health	Ventilation	Insulation - Ceiling	sqft roof	Existing	0.10	45	\$1.28	15%	35%	\$0.13	2.82	4.22	Building Energy Simulation Tool
Health	Cooling	Insulation - Ducting	sqft duct	Existing	0.54	20	\$0.84	15%	35%	\$0.00	13.72	21.98	Building Energy Simulation Tool
Health	Heating	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.84	15%	35%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Health	Ventilation	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.84	15%	35%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Health	Cooling	Building Shell - Cool Roofs	sqft roof	Existing	0.60	20	\$0.78	45%	50%	\$0.13	4.19	5.85	Building Energy Simulation Tool

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Health	Heating	Building Shell - Cool Roofs	sqft roof	Existing	-0.11	20	\$0.78	45%	50%	\$0.13	-0.05	-0.06	Building Energy Simulation Tool
Health	Ventilation	Building Shell - Cool Roofs	sqft roof	Existing	-0.03	20	\$0.78	45%	50%	\$0.13	-0.21	-0.31	Building Energy Simulation Tool
Health	Cooling	Insulation - Wall Cavity	sqft wall	Existing	-0.05	45	\$0.78	15%	35%	\$0.04	-1.35	-1.88	Building Energy Simulation Tool
Health	Heating	Insulation - Wall Cavity	sqft wall	Existing	1.11	45	\$0.78	15%	35%	\$0.04	1.63	1.94	Building Energy Simulation Tool
Health	Ventilation	Insulation - Wall Cavity	sqft wall	Existing	0.30	45	\$0.78	15%	35%	\$0.04	7.25	10.66	Building Energy Simulation Tool
Health	Cooling	HVAC - Duct Repair and Sealing	tonCool	Existing	27.03	18	\$0.57	15%	50%	\$0.01	9.70	13.50	Building Energy Simulation Tool
Health	Heating	HVAC - Duct Repair and Sealing	tonCool	Existing	-20.28	18	\$0.57	15%	50%	\$0.01	-0.43	-0.52	Building Energy Simulation Tool
Health	Ventilation	HVAC - Duct Repair and Sealing	tonCool	Existing	-5.44	18	\$0.57	15%	50%	\$0.01	-1.92	-2.83	Building Energy Simulation Tool
Health	Cooling	Windows - High Efficiency Glazing	sqft window	Existing	9.06	30	\$35.93	48%	48%	\$0.07	0.00	0.00	7th Power Plan
Health	Heating	Windows - High Efficiency Glazing	sqft window	Existing	27.29	30	\$35.93	48%	48%	\$0.07	0.00	0.00	7th Power Plan
Health	Ventilation	Windows - High Efficiency Glazing	sqft window	Existing	4.19	30	\$35.93	48%	48%	\$0.07	0.00	0.00	7th Power Plan
Health	Cooling	Chiller - Chilled Water Reset	ChillCtrl	Existing	20,648.29	10	\$884.85	15%	75%	\$0.00	62.71	103.58	AEG-BEST
Health	Cooling	Chiller - Chilled Water Variable-Flow System	HP cool	Existing	524.71	15	\$332.55	15%	75%	\$0.05	216.68	375.35	AEG-BEST
Health	Cooling	Chiller - Variable Speed Fans	HP fan	Existing	1,150.79	15	\$208.36	15%	75%	\$0.02	48.02	81.41	New Jersey TRM
Health	Cooling	Water-Cooled Chiller - Condenser Water Reset	ChillCtrl	Existing	43,263.13	10	\$884.85	15%	75%	\$0.00	106.87	169.96	AEG-BEST
Health	Cooling	HVAC - Economizer	HP cool	Existing	129.16	10	\$168.42	18%	75%	\$0.12	55.45	108.10	AEG-BEST
Health	Heating	Space Heating - Heat Recovery Ventilator	CFM	Existing	2.00	14	\$5.08	3%	75%	\$0.28	6.57	8.53	7th Power Plan
Health	Ventilation	Ventilation - ECM on VAV Boxes	sqft	Existing	0.41	18	\$0.25	15%	20%	\$0.05	5.70	8.46	7th Power Plan
Health	Ventilation	Ventilation - Variable Speed Control	sqft	Existing	0.04	15	\$181.39	13%	50%	\$417.41	4.25	7.95	AEG-BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Health	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.02	15	\$0.25	15%	75%	\$1.33	3.11	5.65	7th Power Plan
Health	Cooling	Destratification Fans (HVLS)	Strat Fan	Existing	5,024.75	15	\$7,270.90	15%	15%	\$0.04	0.00	0.00	AEG Research
Health	Heating	Destratification Fans (HVLS)	Strat Fan	Existing	14,002.03	15	\$7,270.90	15%	15%	\$0.04	0.00	0.00	AEG Research
Health	Cooling	RTU - Maintenance	tonCool	Existing	55.55	3	\$35.00	15%	45%	\$0.14	1.89	4.00	AEG Research
Health	Cooling	RTU - Advanced Controls	sqft	Existing	0.12	15	\$0.07	15%	45%	\$0.05	1.14	1.66	7th Power Plan
Health	Cooling	RTU - Evaporative Precooler	tonCool	Existing	112.32	15	\$681.62	15%	75%	\$0.43	6.76	9.83	AEG Research
Health	Cooling	Ductless Mini Split Heat Pump	tonCool	Existing	248.52	15	\$3,359.26	15%	25%	\$0.41	0.09	0.18	7th Power Plan
Health	Heating	Ductless Mini Split Heat Pump	tonCool	Existing	467.77	15	\$3,359.26	15%	25%	\$0.41	0.03	0.04	7th Power Plan
Health	Cooling	Thermostat - WiFi/Interactive	sqft	Existing	0.78	5	\$0.66	30%	40%	\$0.05	19.44	32.30	7th Power Plan
Health	Heating	Thermostat - WiFi/Interactive	sqft	Existing	1.11	5	\$0.66	30%	40%	\$0.05	1.82	2.25	7th Power Plan
Health	Ventilation	Thermostat - WiFi/Interactive	sqft	Existing	0.31	5	\$0.66	30%	40%	\$0.05	8.30	12.65	7th Power Plan
Health	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	Existing	24.55	10	\$8.35	25%	65%	\$0.03	0.29	0.70	Illinois TRM
Health	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	Existing	63.57	10	\$11.64	25%	65%	\$0.01	0.37	0.90	7th Power Plan
Health	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	Existing	51.21	15	\$36.75	15%	50%	\$0.05	1.30	2.45	Hawaii TRM
Health	Water Heating	Water Heater - Pipe Insulation	PipeFeet	Existing	681.85	15	\$14.88	16%	75%	\$0.00	5.00	10.99	AEG-BEST
Health	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	Existing	125.75	4	\$144.04	25%	65%	\$0.17	1.42	3.41	7th Power Plan
Health	Water Heating	Water Heater - Thermostat Setback	WHunits	Existing	51.07	2	\$5.00	15%	75%	\$0.03	2.41	5.71	Illinois TRM
Health	Water Heating	Water Heater - Solar System	PipeFeet	Existing	2,349.50	20	\$215.28	1%	30%	\$0.01	8.33	18.74	AEG-BEST
Health	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.64	15	\$0.35	3%	23%	\$0.04	47.50	69.43	7th Power Plan
Health	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.88	15	\$0.58	3%	23%	\$0.05	64.06	95.74	7th Power Plan
Health	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	Existing	280.66	15	\$54.41	1%	3%	\$0.02	1.38	2.59	7th Power Plan

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Health	Interior Lighting	Interior Lighting - Timeclocks and Timers	occ sens	Existing	0.00	8	\$111.67	7%	15%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Health	Interior Lighting	Interior Lighting - Skylights	1000 sqft	Existing	0.00	15	\$1,006.35	15%	25%	\$0.00	0.00	0.00	AEG Research
Health	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	1000 sqft	Existing	421.93	16	\$1,807.69	5%	15%	\$0.32	12.06	23.84	7th Power Plan
Health	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	Existing	4,389.85	11	\$30.80	15%	50%	\$0.00	46.82	83.88	Illinois TRM
Health	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	ELtg Watts	Existing	1.08	8	\$0.63	15%	25%	\$0.07	6.13	12.21	7th Power Plan
Health	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	Existing	72.10	8	\$55.10	15%	25%	\$0.08	3.10	6.36	Pacific Gas and Electric Research
Health	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	Existing	86.53	7	\$3,400.00	15%	30%	\$4.51	5.47	11.65	AEG Research
Health	Refrigeration	Refrigeration - Anti-Sweat Heater	Fridge Feet	Existing	11.67	8	\$48.18	4%	25%	\$0.62	0.42	0.79	7th Power Plan
Health	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	Existing	22.34	4	\$10.44	4%	25%	\$0.12	0.78	1.29	Michigan Energy Measures Database
Health	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	Existing	196.78	16	\$165.20	4%	25%	\$0.09	1.16	1.84	7th Power Plan
Health	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	Existing	20.58	15	\$335.85	0%	0%	\$1.66	0.00	0.00	7th Power Plan
Health	Refrigeration	Refrigeration - Strip Curtain	Walkln Door	Existing	17.09	2	\$10.41	4%	25%	\$0.28	0.38	0.61	7th Power Plan
Health	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBtuh	Existing	0.29	15	\$45.43	2%	13%	\$14.79	1.82	2.86	Annual Energy Outlook, 2015
Health	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	Existing	6.48	15	\$313.82	2%	13%	\$4.93	3.42	5.11	Annual Energy Outlook, 2015
Health	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	Existing	127.78	10	\$506.05	4%	25%	\$0.51	0.75	1.21	Vermont TRM
Health	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	Existing	6.89	6	\$45.41	0%	0%	\$1.20	0.00	0.00	7th Power Plan
Health	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	Existing	0.56	8	\$3.72	0%	0%	\$0.99	0.00	0.00	7th Power Plan
Health	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	Existing	123.51	5	\$45.85	0%	0%	\$0.08	0.00	0.00	Illinois TRM
Health	Refrigeration	Grocery - ECMs for Display Cases	Fridge Case	Existing	28.84	16	\$165.20	4%	25%	\$0.57	0.37	0.54	7th Power Plan

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Health	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	Existing	1,067.26	5	\$187.94	25%	75%	\$0.04	4.68	6.21	Illinois TRM
Health	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	Existing	3,913.63	18	\$8,526.67	25%	50%	\$0.19	10.76	16.17	7th Power Plan
Health	Office Equipment	Office Equipment - Smart Power Strips	Smart Strip	Existing	21.84	4	\$41.63	10%	50%	\$0.44	6.57	8.10	7th Power Plan
Health	Cooling	Lodging - Guest Room Controls	LodgUnit	Existing	290.35	15	\$260.00	0%	0%	\$0.43	0.00	0.00	AEG-BEST
Health	Heating	Lodging - Guest Room Controls	LodgUnit	Existing	-267.65	15	\$260.00	0%	0%	\$0.43	0.00	0.00	AEG-BEST
Health	Office Equipment	Data Center - Best Practice Measures	sqft	Existing	0.01	5	\$0.00	0%	0%	\$0.02	0.00	0.00	com-datacenters-7p_v5p.xlsx
Health	Cooling	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.01	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Health	Ventilation	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.01	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Health	Interior Lighting	Data Center - Commercially Available Measures	sqft	Existing	0.05	8	\$0.01	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Health	Office Equipment	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.01	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Health	Cooling	Data Center - Cutting Edge Measures	sqft	Existing	0.06	6	\$0.01	0%	0%	\$0.02	0.00	0.00	com-datacenters-7p_v5p.xlsx
Health	Office Equipment	Data Center - Cutting Edge Measures	sqft	Existing	0.00	6	\$0.01	0%	0%	\$0.02	0.00	0.00	com-datacenters-7p_v5p.xlsx
Health	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	Existing	3,529.49	18	\$4,092.80	0%	5%	\$0.10	1.61	2.41	7th Power Plan
Health	Miscellaneous	Pool Pump - Timer	perBldg	Existing	0.00	10	\$85.22	15%	75%	\$0.00	0.00	0.00	Ontario Power TRM
Health	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	Existing	12,125.78	6	\$35.93	1%	3%	\$0.00	0.00	11.11	7th Power Plan
Health	Cooling	Advanced New Construction Designs	sqft	Existing	1.28	25	\$4.11	0%	0%	\$0.05	0.00	0.00	AEG Research
Health	Heating	Advanced New Construction Designs	sqft	Existing	1.84	25	\$4.11	0%	0%	\$0.05	0.00	0.00	AEG Research
Health	Ventilation	Advanced New Construction Designs	sqft	Existing	0.49	25	\$4.11	0%	0%	\$0.05	0.00	0.00	AEG Research
Health	Water Heating	Advanced New Construction Designs	sqft	Existing	0.52	25	\$4.11	0%	0%	\$0.05	0.00	0.00	AEG Research

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Health	Interior Lighting	Advanced New Construction Designs	sqft	Existing	1.28	25	\$4.11	0%	0%	\$0.05	0.00	0.00	AEG Research
Health	Exterior Lighting	Advanced New Construction Designs	sqft	Existing	0.13	25	\$4.11	0%	0%	\$0.05	0.00	0.00	AEG Research
Health	Cooling	Strategic Energy Management	sqft	Existing	0.19	3	\$0.34	4%	28%	\$0.10	12.20	25.06	AEG Research
Health	Heating	Strategic Energy Management	sqft	Existing	0.27	3	\$0.34	4%	28%	\$0.10	1.15	1.57	AEG Research
Health	Ventilation	Strategic Energy Management	sqft	Existing	0.07	3	\$0.34	4%	28%	\$0.10	5.18	9.45	AEG Research
Health	Water Heating	Strategic Energy Management	sqft	Existing	0.08	3	\$0.34	4%	28%	\$0.10	1.33	3.22	AEG Research
Health	Interior Lighting	Strategic Energy Management	sqft	Existing	0.20	3	\$0.34	4%	28%	\$0.10	13.58	26.82	AEG Research
Health	Exterior Lighting	Strategic Energy Management	sqft	Existing	0.02	3	\$0.34	4%	28%	\$0.10	1.34	2.80	AEG Research
Health	Refrigeration	Strategic Energy Management	sqft	Existing	0.02	3	\$0.34	4%	28%	\$0.10	1.69	2.38	AEG Research
Health	Office Equipment	Strategic Energy Management	sqft	Existing	0.02	3	\$0.34	4%	28%	\$0.10	2.14	2.70	AEG Research
Health	Cooling	Commissioning	sqft	Existing	0.26	3	\$1.40	0%	0%	\$0.34	0.00	0.00	AEG Research
Health	Heating	Commissioning	sqft	Existing	0.36	3	\$1.40	0%	0%	\$0.34	0.00	0.00	AEG Research
Health	Ventilation	Commissioning	sqft	Existing	0.10	3	\$1.40	0%	0%	\$0.34	0.00	0.00	AEG Research
Health	Water Heating	Commissioning	sqft	Existing	0.04	3	\$1.40	0%	0%	\$0.34	0.00	0.00	AEG Research
Health	Interior Lighting	Commissioning	sqft	Existing	0.22	3	\$1.40	0%	0%	\$0.34	0.00	0.00	AEG Research
Health	Exterior Lighting	Commissioning	sqft	Existing	0.02	3	\$1.40	0%	0%	\$0.34	0.00	0.00	AEG Research
Health	Refrigeration	Commissioning	sqft	Existing	0.05	3	\$1.40	0%	0%	\$0.34	0.00	0.00	AEG Research
Health	Cooling	Retrocommissioning	sqft	Existing	0.26	3	\$0.89	15%	55%	\$0.22	27.82	57.57	AEG Research
Health	Heating	Retrocommissioning	sqft	Existing	0.37	3	\$0.89	15%	55%	\$0.22	2.61	3.60	AEG Research
Health	Ventilation	Retrocommissioning	sqft	Existing	0.10	3	\$0.89	15%	55%	\$0.22	11.81	21.71	AEG Research
Health	Water Heating	Retrocommissioning	sqft	Existing	0.04	3	\$0.89	15%	55%	\$0.22	1.01	2.46	AEG Research
Health	Interior Lighting	Retrocommissioning	sqft	Existing	0.23	3	\$0.89	15%	55%	\$0.22	25.81	51.35	AEG Research

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Health	Exterior Lighting	Retrocommissioning	sqft	Existing	0.02	3	\$0.89	15%	55%	\$0.22	2.56	5.37	AEG Research
Health	Refrigeration	Retrocommissioning	sqft	Existing	0.05	3	\$0.89	15%	55%	\$0.22	6.41	9.11	AEG Research
Health	Interior Lighting	Fruit Storage - Lighting Controls	sqft	Existing	0.16	10	\$0.09	0%	0%	\$0.05	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Health	Refrigeration	Fruit Storage Refrigeration Retrofit	sqft	Existing	0.15	10	\$1.09	0%	0%	\$0.91	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Health	Refrigeration	Fruit Storage Refrigeration Tuneup	sqft	Existing	0.04	3	\$0.23	0%	0%	\$1.87	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Health	Refrigeration	Fruit Storage Retrofit - CO2 Scrub	sqft	Existing	0.07	10	\$3.13	0%	0%	\$5.41	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Health	Refrigeration	Fruit Storage Retrofit - Membrane	sqft	Existing	0.01	10	\$0.68	0%	0%	\$5.88	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Health	Cooling	Insulation - Ceiling	sqft roof	New	0.02	45	\$1.28	15%	50%	\$0.37	0.29	0.35	Building Energy Simulation Tool
Health	Heating	Insulation - Ceiling	sqft roof	New	0.20	45	\$1.28	15%	50%	\$0.37	0.16	0.18	Building Energy Simulation Tool
Health	Ventilation	Insulation - Ceiling	sqft roof	New	0.04	45	\$1.28	15%	50%	\$0.37	0.61	0.74	Building Energy Simulation Tool
Health	Cooling	Insulation - Ducting	sqft duct	New	0.30	20	\$0.84	15%	50%	\$0.00	4.87	5.72	Building Energy Simulation Tool
Health	Heating	Insulation - Ducting	sqft duct	New	0.00	20	\$0.84	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Health	Ventilation	Insulation - Ducting	sqft duct	New	0.00	20	\$0.84	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Health	Cooling	Building Shell - Cool Roofs	sqft roof	New	0.12	20	\$0.78	45%	50%	\$1.70	0.28	0.33	Building Energy Simulation Tool
Health	Heating	Building Shell - Cool Roofs	sqft roof	New	-0.10	20	\$0.78	45%	50%	\$1.70	-0.01	-0.01	Building Energy Simulation Tool
Health	Ventilation	Building Shell - Cool Roofs	sqft roof	New	-0.02	20	\$0.78	45%	50%	\$1.70	-0.05	-0.05	Building Energy Simulation Tool
Health	Cooling	Insulation - Wall Cavity	sqft wall	New	0.00	45	\$0.78	15%	50%	\$0.20	0.06	0.07	Building Energy Simulation Tool
Health	Heating	Insulation - Wall Cavity	sqft wall	New	0.24	45	\$0.78	15%	50%	\$0.20	0.17	0.19	Building Energy Simulation Tool
Health	Ventilation	Insulation - Wall Cavity	sqft wall	New	0.05	45	\$0.78	15%	50%	\$0.20	0.67	0.80	Building Energy Simulation Tool

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Health	Cooling	HVAC - Duct Repair and Sealing	tonCool	New	15.75	18	\$0.57	15%	35%	\$0.00	0.97	1.16	Building Energy Simulation Tool
Health	Heating	HVAC - Duct Repair and Sealing	tonCool	New	86.65	18	\$0.57	15%	35%	\$0.00	0.27	0.31	Building Energy Simulation Tool
Health	Ventilation	HVAC - Duct Repair and Sealing	tonCool	New	16.40	18	\$0.57	15%	35%	\$0.00	1.09	1.31	Building Energy Simulation Tool
Health	Cooling	Windows - High Efficiency Glazing	sqft window	New	6.81	30	\$35.93	66%	66%	\$0.08	0.00	0.00	7th Power Plan
Health	Heating	Windows - High Efficiency Glazing	sqft window	New	24.59	30	\$35.93	66%	66%	\$0.08	0.00	0.00	7th Power Plan
Health	Ventilation	Windows - High Efficiency Glazing	sqft window	New	2.67	30	\$35.93	66%	66%	\$0.08	0.00	0.00	7th Power Plan
Health	Cooling	Chiller - Chilled Water Reset	ChillCtrl	New	13,241.81	10	\$884.85	15%	75%	\$0.01	6.01	8.58	AEG-BEST
Health	Cooling	Chiller - Chilled Water Variable-Flow System	HP cool	New	347.12	15	\$332.55	15%	75%	\$0.07	27.68	37.97	AEG-BEST
Health	Cooling	Chiller - Variable Speed Fans	HP fan	New	751.33	15	\$208.36	15%	75%	\$0.02	5.98	8.20	New Jersey TRM
Health	Cooling	Water-Cooled Chiller - Condenser Water Reset	ChillCtrl	New	26,751.14	10	\$884.85	15%	75%	\$0.00	9.65	13.84	AEG-BEST
Health	Cooling	HVAC - Economizer	HP cool	New	95.13	10	\$168.42	18%	75%	\$0.15	6.60	9.66	AEG-BEST
Health	Heating	Space Heating - Heat Recovery Ventilator	CFM	New	1.78	14	\$5.08	6%	75%	\$0.31	0.85	1.09	7th Power Plan
Health	Ventilation	Ventilation - ECM on VAV Boxes	sqft	New	0.26	18	\$0.25	15%	20%	\$0.07	1.19	1.44	7th Power Plan
Health	Ventilation	Ventilation - Variable Speed Control	sqft	New	0.03	15	\$181.39	19%	50%	\$565.62	0.48	0.67	AEG-BEST
Health	Ventilation	Ventilation - Demand Controlled	sqft	New	0.01	15	\$0.25	15%	75%	\$1.80	0.40	0.56	7th Power Plan
Health	Cooling	Destratification Fans (HVLS)	Strat Fan	New	3,773.69	15	\$7,270.90	15%	15%	\$0.04	0.00	0.00	AEG Research
Health	Heating	Destratification Fans (HVLS)	Strat Fan	New	12,614.34	15	\$7,270.90	15%	15%	\$0.04	0.00	0.00	AEG Research
Health	Cooling	RTU - Maintenance	tonCool	New	59.57	3	\$35.00	15%	45%	\$0.13	0.10	0.18	AEG Research
Health	Cooling	RTU - Advanced Controls	sqft	New	0.12	15	\$0.07	15%	45%	\$0.04	0.35	0.43	7th Power Plan
Health	Cooling	RTU - Evaporative Precooler	tonCool	New	119.82	15	\$681.62	15%	75%	\$0.39	2.87	3.35	AEG Research
Health	Cooling	Ductless Mini Split Heat Pump	tonCool	New	203.03	15	\$3,359.26	15%	25%	\$0.46	0.02	0.03	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Health	Heating	Ductless Mini Split Heat Pump	tonCool	New	445.68	15	\$3,359.26	15%	25%	\$0.46	0.01	0.01	7th Power Plan
Health	Cooling	Thermostat - WiFi/Interactive	sqft	New	0.59	5	\$0.66	30%	40%	\$0.06	0.63	1.01	7th Power Plan
Health	Heating	Thermostat - WiFi/Interactive	sqft	New	1.01	5	\$0.66	30%	40%	\$0.06	0.06	0.07	7th Power Plan
Health	Ventilation	Thermostat - WiFi/Interactive	sqft	New	0.19	5	\$0.66	30%	40%	\$0.06	0.22	0.33	7th Power Plan
Health	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	New	10.21	10	\$8.35	25%	65%	\$0.05	0.03	0.07	Illinois TRM
Health	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	New	26.49	10	\$11.64	25%	65%	\$0.03	0.04	0.09	7th Power Plan
Health	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	New	42.81	15	\$36.75	15%	50%	\$0.05	0.30	0.45	Hawaii TRM
Health	Water Heating	Water Heater - Pipe Insulation	PipeFeet	New	551.55	15	\$14.88	1%	75%	\$0.00	0.98	1.81	AEG-BEST
Health	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	New	52.56	4	\$144.04	25%	65%	\$0.35	0.07	0.16	7th Power Plan
Health	Water Heating	Water Heater - Thermostat Setback	WHunits	New	42.24	2	\$5.00	15%	75%	\$0.03	0.04	0.10	Illinois TRM
Health	Water Heating	Water Heater - Solar System	PipeFeet	New	1,917.55	20	\$215.28	1%	30%	\$0.01	1.37	2.51	AEG-BEST
Health	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.60	15	\$0.35	11%	23%	\$0.04	12.99	17.70	7th Power Plan
Health	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.83	15	\$0.58	11%	23%	\$0.05	17.86	24.48	7th Power Plan
Health	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	New	261.56	15	\$54.41	1%	3%	\$0.02	0.19	0.31	7th Power Plan
Health	Interior Lighting	Interior Lighting - Timeclocks and Timers	occ sens	New	0.00	8	\$111.67	7%	15%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Health	Interior Lighting	Interior Lighting - Skylights	1000 sqft	New	0.00	15	\$1,006.35	18%	25%	\$0.00	0.00	0.00	AEG Research
Health	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	1000 sqft	New	382.41	16	\$1,807.69	5%	15%	\$0.32	2.05	3.30	7th Power Plan
Health	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	New	3,954.56	11	\$30.80	15%	50%	\$0.00	6.29	10.18	Illinois TRM
Health	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	ELtg Watts	New	0.88	8	\$0.63	15%	25%	\$0.07	0.60	1.16	7th Power Plan

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Health	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	New	60.16	8	\$55.10	15%	25%	\$0.08	0.31	0.61	Pacific Gas and Electric Research
Health	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	New	73.65	7	\$3,400.00	15%	30%	\$4.51	0.50	1.00	AEG Research
Health	Refrigeration	Refrigeration - Anti-Sweat Heater	Fridge Feet	New	9.24	8	\$48.18	4%	25%	\$0.79	0.04	0.06	7th Power Plan
Health	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	New	19.16	4	\$10.44	4%	25%	\$0.14	0.03	0.05	Michigan Energy Measures Database
Health	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	New	170.45	16	\$165.20	4%	25%	\$0.10	0.18	0.24	7th Power Plan
Health	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	New	19.44	15	\$335.85	0%	0%	\$1.81	0.00	0.00	7th Power Plan
Health	Refrigeration	Refrigeration - Strip Curtain	Walkin Door	New	15.54	2	\$10.41	4%	25%	\$0.31	0.01	0.01	7th Power Plan
Health	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	New	0.29	15	\$45.43	2%	13%	\$16.05	0.31	0.40	Annual Energy Outlook, 2015
Health	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	New	6.12	15	\$313.82	2%	13%	\$5.35	0.54	0.69	Annual Energy Outlook, 2015
Health	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	New	113.08	10	\$506.05	4%	25%	\$0.59	0.09	0.13	Vermont TRM
Health	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	New	6.47	6	\$45.41	0%	0%	\$1.31	0.00	0.00	7th Power Plan
Health	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	New	0.52	8	\$3.72	0%	0%	\$1.08	0.00	0.00	7th Power Plan
Health	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	New	117.53	5	\$45.85	0%	0%	\$0.08	0.00	0.00	Illinois TRM
Health	Refrigeration	Grocery - ECMs for Display Cases	Fridge Case	New	26.93	16	\$165.20	4%	25%	\$0.62	0.06	0.07	7th Power Plan
Health	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	New	1,051.50	5	\$187.94	25%	75%	\$0.04	0.28	0.37	Illinois TRM
Health	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	New	2,456.34	18	\$8,526.67	25%	50%	\$0.26	2.22	2.72	7th Power Plan
Health	Office Equipment	Office Equipment - Smart Power Strips	Smart Strip	New	21.40	4	\$41.63	10%	50%	\$0.45	0.29	0.37	7th Power Plan
Health	Cooling	Lodging - Guest Room Controls	LodgUnit	New	206.30	15	\$260.00	0%	0%	\$0.93	0.00	0.00	AEG-BEST
Health	Heating	Lodging - Guest Room Controls	LodgUnit	New	-248.94	15	\$260.00	0%	0%	\$0.93	0.00	0.00	AEG-BEST

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Health	Office Equipment	Data Center - Best Practice Measures	sqft	New	0.01	5	\$0.00	0%	0%	\$0.02	0.00	0.00	com-datacenters-7p_v5p.xlsx
Health	Cooling	Data Center - Commercially Available Measures	sqft	New	0.01	8	\$0.01	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Health	Ventilation	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.01	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Health	Interior Lighting	Data Center - Commercially Available Measures	sqft	New	0.05	8	\$0.01	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Health	Office Equipment	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.01	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Health	Cooling	Data Center - Cutting Edge Measures	sqft	New	0.04	6	\$0.01	0%	0%	\$0.02	0.00	0.00	com-datacenters-7p_v5p.xlsx
Health	Office Equipment	Data Center - Cutting Edge Measures	sqft	New	0.00	6	\$0.01	0%	0%	\$0.02	0.00	0.00	com-datacenters-7p_v5p.xlsx
Health	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	New	2,239.95	18	\$4,092.80	0%	5%	\$0.14	0.34	0.41	7th Power Plan
Health	Miscellaneous	Pool Pump - Timer	perBldg	New	0.00	10	\$85.22	15%	75%	\$0.00	0.00	0.00	Ontario Power TRM
Health	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	New	6,062.89	6	\$35.93	1%	3%	\$0.00	0.00	0.61	7th Power Plan
Health	Cooling	Advanced New Construction Designs	sqft	New	0.96	25	\$4.11	10%	25%	\$0.06	14.71	17.03	AEG Research
Health	Heating	Advanced New Construction Designs	sqft	New	1.66	25	\$4.11	10%	25%	\$0.06	1.28	1.45	AEG Research
Health	Ventilation	Advanced New Construction Designs	sqft	New	0.31	25	\$4.11	10%	25%	\$0.06	5.07	6.08	AEG Research
Health	Water Heating	Advanced New Construction Designs	sqft	New	0.44	25	\$4.11	10%	25%	\$0.06	1.69	2.34	AEG Research
Health	Interior Lighting	Advanced New Construction Designs	sqft	New	1.20	25	\$4.11	10%	25%	\$0.06	16.94	21.72	AEG Research
Health	Exterior Lighting	Advanced New Construction Designs	sqft	New	0.11	25	\$4.11	10%	25%	\$0.06	1.53	2.03	AEG Research
Health	Cooling	Strategic Energy Management	sqft	New	0.14	3	\$0.31	4%	28%	\$0.10	0.35	0.61	AEG Research
Health	Heating	Strategic Energy Management	sqft	New	0.25	3	\$0.31	4%	28%	\$0.10	0.03	0.04	AEG Research
Health	Ventilation	Strategic Energy Management	sqft	New	0.05	3	\$0.31	4%	28%	\$0.10	0.12	0.19	AEG Research

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Health	Water Heating	Strategic Energy Management	sqft	New	0.07	3	\$0.31	4%	28%	\$0.10	0.04	0.10	AEG Research
Health	Interior Lighting	Strategic Energy Management	sqft	New	0.18	3	\$0.31	4%	28%	\$0.10	0.41	0.85	AEG Research
Health	Exterior Lighting	Strategic Energy Management	sqft	New	0.02	3	\$0.31	4%	28%	\$0.10	0.04	0.09	AEG Research
Health	Refrigeration	Strategic Energy Management	sqft	New	0.02	3	\$0.31	4%	28%	\$0.10	0.05	0.07	AEG Research
Health	Office Equipment	Strategic Energy Management	sqft	New	0.02	3	\$0.31	4%	28%	\$0.10	0.06	0.08	AEG Research
Health	Cooling	Commissioning	sqft	New	0.20	3	\$1.23	15%	55%	\$0.34	0.81	1.41	AEG Research
Health	Heating	Commissioning	sqft	New	0.34	3	\$1.23	15%	55%	\$0.34	0.07	0.10	AEG Research
Health	Ventilation	Commissioning	sqft	New	0.07	3	\$1.23	15%	55%	\$0.34	0.28	0.44	AEG Research
Health	Water Heating	Commissioning	sqft	New	0.03	3	\$1.23	15%	55%	\$0.34	0.03	0.08	AEG Research
Health	Interior Lighting	Commissioning	sqft	New	0.21	3	\$1.23	15%	55%	\$0.34	0.79	1.63	AEG Research
Health	Exterior Lighting	Commissioning	sqft	New	0.02	3	\$1.23	15%	55%	\$0.34	0.07	0.16	AEG Research
Health	Refrigeration	Commissioning	sqft	New	0.05	3	\$1.23	15%	55%	\$0.34	0.18	0.25	AEG Research
Health	Cooling	Retrocommissioning	sqft	New	0.20	3	\$0.78	0%	0%	\$0.21	0.00	0.00	AEG Research
Health	Heating	Retrocommissioning	sqft	New	0.34	3	\$0.78	0%	0%	\$0.21	0.00	0.00	AEG Research
Health	Ventilation	Retrocommissioning	sqft	New	0.07	3	\$0.78	0%	0%	\$0.21	0.00	0.00	AEG Research
Health	Water Heating	Retrocommissioning	sqft	New	0.03	3	\$0.78	0%	0%	\$0.21	0.00	0.00	AEG Research
Health	Interior Lighting	Retrocommissioning	sqft	New	0.21	3	\$0.78	0%	0%	\$0.21	0.00	0.00	AEG Research
Health	Exterior Lighting	Retrocommissioning	sqft	New	0.02	3	\$0.78	0%	0%	\$0.21	0.00	0.00	AEG Research
Health	Refrigeration	Retrocommissioning	sqft	New	0.05	3	\$0.78	0%	0%	\$0.21	0.00	0.00	AEG Research
Health	Interior Lighting	Fruit Storage - Lighting Controls	sqft	New	0.15	10	\$0.09	0%	0%	\$0.05	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Health	Refrigeration	Fruit Storage Refrigeration Retrofit	sqft	New	0.14	10	\$1.09	0%	0%	\$1.01	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Health	Refrigeration	Fruit Storage Refrigeration Tuneup	sqft	New	0.04	3	\$0.23	0%	0%	\$2.06	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx

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Health	Refrigeration	Fruit Storage Retrofit - CO2 Scrub	sqft	New	0.07	10	\$3.13	0%	0%	\$5.96	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Health	Refrigeration	Fruit Storage Retrofit - Membrane	sqft	New	0.01	10	\$0.68	0%	0%	\$6.47	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
College	Cooling	Insulation - Ceiling	sqft roof	Existing	0.02	45	\$1.28	15%	35%	\$0.22	0.58	0.78	Building Energy Simulation Tool
College	Heating	Insulation - Ceiling	sqft roof	Existing	0.34	45	\$1.28	15%	35%	\$0.22	4.25	5.11	Building Energy Simulation Tool
College	Ventilation	Insulation - Ceiling	sqft roof	Existing	0.07	45	\$1.28	15%	35%	\$0.22	2.30	3.33	Building Energy Simulation Tool
College	Cooling	Insulation - Ducting	sqft duct	Existing	0.42	20	\$0.84	15%	35%	\$0.00	6.00	8.04	Building Energy Simulation Tool
College	Heating	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.84	15%	35%	\$0.00	0.00	0.00	Building Energy Simulation Tool
College	Ventilation	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.84	15%	35%	\$0.00	0.00	0.00	Building Energy Simulation Tool
College	Cooling	Building Shell - Cool Roofs	sqft roof	Existing	0.34	20	\$0.78	45%	50%	\$0.37	2.56	3.23	Building Energy Simulation Tool
College	Heating	Building Shell - Cool Roofs	sqft roof	Existing	-0.13	20	\$0.78	45%	50%	\$0.37	-0.41	-0.49	Building Energy Simulation Tool
College	Ventilation	Building Shell - Cool Roofs	sqft roof	Existing	-0.03	20	\$0.78	45%	50%	\$0.37	-0.22	-0.31	Building Energy Simulation Tool
College	Cooling	Insulation - Wall Cavity	sqft wall	Existing	-0.31	45	\$0.78	15%	35%	\$0.28	-2.93	-3.70	Building Energy Simulation Tool
College	Heating	Insulation - Wall Cavity	sqft wall	Existing	0.45	45	\$0.78	15%	35%	\$0.28	1.73	2.06	Building Energy Simulation Tool
College	Ventilation	Insulation - Wall Cavity	sqft wall	Existing	0.09	45	\$0.78	15%	35%	\$0.28	0.93	1.33	Building Energy Simulation Tool
College	Cooling	HVAC - Duct Repair and Sealing	tonCool	Existing	20.90	18	\$0.57	15%	50%	\$0.00	4.38	5.54	Building Energy Simulation Tool
College	Heating	HVAC - Duct Repair and Sealing	tonCool	Existing	-7.12	18	\$0.57	15%	50%	\$0.00	-0.62	-0.74	Building Energy Simulation Tool
College	Ventilation	HVAC - Duct Repair and Sealing	tonCool	Existing	-1.44	18	\$0.57	15%	50%	\$0.00	-0.33	-0.48	Building Energy Simulation Tool
College	Cooling	Windows - High Efficiency Glazing	sqft window	Existing	7.43	30	\$35.93	48%	48%	\$0.08	0.00	0.00	7th Power Plan
College	Heating	Windows - High Efficiency Glazing	sqft window	Existing	24.50	30	\$35.93	48%	48%	\$0.08	0.00	0.00	7th Power Plan

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College	Ventilation	Windows - High Efficiency Glazing	sqft window	Existing	2.89	30	\$35.93	48%	48%	\$0.08	0.00	0.00	7th Power Plan
College	Cooling	Chiller - Chilled Water Reset	ChillCtrl	Existing	12,603.74	10	\$884.85	15%	75%	\$0.01	9.06	12.62	AEG-BEST
College	Cooling	Chiller - Chilled Water Variable-Flow System	HP cool	Existing	351.92	15	\$332.55	15%	75%	\$0.09	34.78	49.67	AEG-BEST
College	Cooling	Chiller - Variable Speed Fans	HP fan	Existing	823.12	15	\$208.36	15%	75%	\$0.03	8.19	11.53	New Jersey TRM
College	Cooling	Water-Cooled Chiller - Condenser Water Reset	ChillCtrl	Existing	0.00	10	\$884.85	15%	75%	\$0.00	0.00	0.00	AEG-BEST
College	Cooling	HVAC - Economizer	HP cool	Existing	79.46	10	\$168.42	18%	75%	\$0.24	20.61	31.43	AEG-BEST
College	Heating	Space Heating - Heat Recovery Ventilator	CFM	Existing	0.66	14	\$5.08	3%	75%	\$0.83	17.51	23.30	7th Power Plan
College	Ventilation	Ventilation - ECM on VAV Boxes	sqft	Existing	0.23	18	\$0.25	15%	20%	\$0.09	1.92	2.76	7th Power Plan
College	Ventilation	Ventilation - Variable Speed Control	sqft	Existing	0.02	15	\$181.39	13%	50%	\$669.50	1.43	2.53	AEG-BEST
College	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.01	15	\$0.25	15%	75%	\$2.13	1.04	1.80	7th Power Plan
College	Cooling	Destratification Fans (HVLS)	Strat Fan	Existing	3,405.87	15	\$7,270.90	15%	25%	\$0.05	4.66	6.98	AEG Research
College	Heating	Destratification Fans (HVLS)	Strat Fan	Existing	10,474.53	15	\$7,270.90	15%	25%	\$0.05	6.16	7.88	AEG Research
College	Cooling	RTU - Maintenance	tonCool	Existing	31.11	3	\$35.00	15%	45%	\$0.30	3.18	5.37	AEG Research
College	Cooling	RTU - Advanced Controls	sqft	Existing	0.07	15	\$0.07	15%	45%	\$0.09	1.80	2.32	7th Power Plan
College	Cooling	RTU - Evaporative Precooler	tonCool	Existing	63.00	15	\$681.62	15%	75%	\$0.94	11.37	14.71	AEG Research
College	Cooling	Ductless Mini Split Heat Pump	tonCool	Existing	138.76	15	\$3,359.26	15%	25%	\$0.77	0.29	0.45	7th Power Plan
College	Heating	Ductless Mini Split Heat Pump	tonCool	Existing	274.29	15	\$3,359.26	15%	25%	\$0.77	5.80	7.67	7th Power Plan
College	Cooling	Thermostat - WiFi/Interactive	sqft	Existing	0.52	5	\$0.66	30%	40%	\$0.08	7.38	10.19	7th Power Plan
College	Heating	Thermostat - WiFi/Interactive	sqft	Existing	0.85	5	\$0.66	30%	40%	\$0.08	5.25	6.36	7th Power Plan
College	Ventilation	Thermostat - WiFi/Interactive	sqft	Existing	0.17	5	\$0.66	30%	40%	\$0.08	2.77	4.10	7th Power Plan
College	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	Existing	14.05	10	\$8.35	25%	65%	\$0.05	0.20	0.50	Illinois TRM

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College	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	Existing	36.43	10	\$11.64	25%	65%	\$0.03	0.26	0.65	7th Power Plan
College	Water Heating	Water Heater - High Efficiency Circulation Pump	WHUnits	Existing	50.85	15	\$36.75	15%	25%	\$0.05	0.26	0.50	Hawaii TRM
College	Water Heating	Water Heater - Pipe Insulation	PipeFeet	Existing	390.77	15	\$14.88	16%	75%	\$0.00	3.57	7.89	AEG-BEST
College	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	Existing	72.29	4	\$144.04	25%	65%	\$0.30	1.02	2.45	7th Power Plan
College	Water Heating	Water Heater - Thermostat Setback	WHUnits	Existing	50.80	2	\$5.00	15%	75%	\$0.03	1.73	4.11	Illinois TRM
College	Water Heating	Water Heater - Solar System	PipeFeet	Existing	1,346.16	20	\$215.28	1%	30%	\$0.01	5.95	13.46	AEG-BEST
College	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.34	15	\$0.35	3%	23%	\$0.08	13.05	19.65	7th Power Plan
College	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.46	15	\$0.58	3%	23%	\$0.10	17.55	27.08	7th Power Plan
College	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	Existing	279.08	15	\$54.41	1%	3%	\$0.02	0.36	0.70	7th Power Plan
College	Interior Lighting	Interior Lighting - Timeclocks and Timers	occ sens	Existing	0.00	8	\$111.67	7%	15%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
College	Interior Lighting	Interior Lighting - Skylights	1000 sqft	Existing	0.00	15	\$1,006.35	15%	30%	\$0.00	0.00	0.00	AEG Research
College	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	1000 sqft	Existing	223.02	16	\$1,807.69	5%	15%	\$0.60	3.36	6.90	7th Power Plan
College	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	Existing	2,327.88	11	\$30.80	15%	50%	\$0.00	13.14	24.32	Illinois TRM
College	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	ELtg Watts	Existing	0.33	8	\$0.63	15%	25%	\$0.22	4.30	8.68	7th Power Plan
College	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	Existing	30.54	8	\$55.10	15%	25%	\$0.21	2.35	4.66	Pacific Gas and Electric Research
College	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	Existing	35.32	7	\$3,400.00	15%	30%	\$11.49	3.93	8.36	AEG Research
College	Refrigeration	Refrigeration - Anti-Sweat Heater	Fridge Feet	Existing	8.78	8	\$48.18	4%	25%	\$0.82	0.05	0.10	7th Power Plan
College	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	Existing	19.66	4	\$10.44	4%	25%	\$0.14	0.12	0.19	Michigan Energy Measures Database
College	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	Existing	179.39	16	\$165.20	4%	25%	\$0.09	0.18	0.28	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
College	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	Existing	15.82	15	\$335.85	0%	0%	\$2.18	0.00	0.00	7th Power Plan
College	Refrigeration	Refrigeration - Strip Curtain	Walkin Door	Existing	12.55	2	\$10.41	4%	25%	\$0.38	0.05	0.07	7th Power Plan
College	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	Existing	0.23	15	\$45.43	2%	13%	\$19.34	0.24	0.37	Annual Energy Outlook, 2015
College	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	Existing	4.93	15	\$313.82	2%	13%	\$6.44	0.44	0.66	Annual Energy Outlook, 2015
College	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	Existing	116.56	10	\$506.05	4%	25%	\$0.56	0.12	0.19	Vermont TRM
College	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	Existing	5.19	6	\$45.41	0%	0%	\$1.60	0.00	0.00	7th Power Plan
College	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	Existing	0.42	8	\$3.72	0%	0%	\$1.32	0.00	0.00	7th Power Plan
College	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	Existing	93.00	5	\$45.85	0%	0%	\$0.10	0.00	0.00	Illinois TRM
College	Refrigeration	Grocery - ECMs for Display Cases	Fridge Case	Existing	21.71	16	\$165.20	4%	25%	\$0.76	0.05	0.07	7th Power Plan
College	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	Existing	1,071.47	5	\$187.94	25%	75%	\$0.04	0.62	0.81	Illinois TRM
College	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	Existing	2,198.59	18	\$8,526.67	25%	50%	\$0.31	3.60	5.25	7th Power Plan
College	Office Equipment	Office Equipment - Smart Power Strips	Smart Strip	Existing	23.32	4	\$41.63	10%	50%	\$0.41	3.81	4.66	7th Power Plan
College	Cooling	Lodging - Guest Room Controls	LodgUnit	Existing	158.31	15	\$260.00	0%	0%	\$10.00	0.00	0.00	AEG-BEST
College	Heating	Lodging - Guest Room Controls	LodgUnit	Existing	-175.13	15	\$260.00	0%	0%	\$10.00	0.00	0.00	AEG-BEST
College	Office Equipment	Data Center - Best Practice Measures	sqft	Existing	0.01	5	\$0.00	0%	0%	\$0.02	0.00	0.00	com-datacenters-7p_v5p.xlsx
College	Cooling	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.00	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
College	Ventilation	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.00	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
College	Interior Lighting	Data Center - Commercially Available Measures	sqft	Existing	0.02	8	\$0.00	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
College	Office Equipment	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.00	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx

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College	Cooling	Data Center - Cutting Edge Measures	sqft	Existing	0.04	6	\$0.00	0%	0%	\$0.02	0.00	0.00	com-datacenters-7p_v5p.xlsx
College	Office Equipment	Data Center - Cutting Edge Measures	sqft	Existing	0.00	6	\$0.00	0%	0%	\$0.02	0.00	0.00	com-datacenters-7p_v5p.xlsx
College	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	Existing	1,991.20	18	\$4,092.80	0%	5%	\$0.17	0.54	0.79	7th Power Plan
College	Miscellaneous	Pool Pump - Timer	perBldg	Existing	408.52	10	\$85.22	15%	75%	\$0.03	1.29	1.53	Ontario Power TRM
College	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	Existing	3,125.82	6	\$35.93	1%	3%	\$0.00	1.33	1.55	7th Power Plan
College	Cooling	Advanced New Construction Designs	sqft	Existing	0.86	25	\$4.11	0%	0%	\$0.08	0.00	0.00	AEG Research
College	Heating	Advanced New Construction Designs	sqft	Existing	1.35	25	\$4.11	0%	0%	\$0.08	0.00	0.00	AEG Research
College	Ventilation	Advanced New Construction Designs	sqft	Existing	0.27	25	\$4.11	0%	0%	\$0.08	0.00	0.00	AEG Research
College	Water Heating	Advanced New Construction Designs	sqft	Existing	0.30	25	\$4.11	0%	0%	\$0.08	0.00	0.00	AEG Research
College	Interior Lighting	Advanced New Construction Designs	sqft	Existing	0.64	25	\$4.11	0%	0%	\$0.08	0.00	0.00	AEG Research
College	Exterior Lighting	Advanced New Construction Designs	sqft	Existing	0.18	25	\$4.11	0%	0%	\$0.08	0.00	0.00	AEG Research
College	Cooling	Strategic Energy Management	sqft	Existing	0.12	3	\$0.21	3%	29%	\$0.10	4.86	8.01	AEG Research
College	Heating	Strategic Energy Management	sqft	Existing	0.19	3	\$0.21	3%	29%	\$0.10	3.29	4.63	AEG Research
College	Ventilation	Strategic Energy Management	sqft	Existing	0.04	3	\$0.21	3%	29%	\$0.10	1.88	3.26	AEG Research
College	Water Heating	Strategic Energy Management	sqft	Existing	0.05	3	\$0.21	3%	29%	\$0.10	1.03	2.51	AEG Research
College	Interior Lighting	Strategic Energy Management	sqft	Existing	0.10	3	\$0.21	3%	29%	\$0.10	3.85	7.88	AEG Research
College	Exterior Lighting	Strategic Energy Management	sqft	Existing	0.03	3	\$0.21	3%	29%	\$0.10	1.05	2.18	AEG Research
College	Refrigeration	Strategic Energy Management	sqft	Existing	0.01	3	\$0.21	3%	29%	\$0.10	0.28	0.34	AEG Research
College	Office Equipment	Strategic Energy Management	sqft	Existing	0.03	3	\$0.21	3%	29%	\$0.10	1.35	1.68	AEG Research
College	Cooling	Commissioning	sqft	Existing	0.17	3	\$0.86	0%	0%	\$0.35	0.00	0.00	AEG Research

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College	Heating	Commissioning	sqft	Existing	0.26	3	\$0.86	0%	0%	\$0.35	0.00	0.00	AEG Research
College	Ventilation	Commissioning	sqft	Existing	0.06	3	\$0.86	0%	0%	\$0.35	0.00	0.00	AEG Research
College	Water Heating	Commissioning	sqft	Existing	0.02	3	\$0.86	0%	0%	\$0.35	0.00	0.00	AEG Research
College	Interior Lighting	Commissioning	sqft	Existing	0.11	3	\$0.86	0%	0%	\$0.35	0.00	0.00	AEG Research
College	Exterior Lighting	Commissioning	sqft	Existing	0.03	3	\$0.86	0%	0%	\$0.35	0.00	0.00	AEG Research
College	Refrigeration	Commissioning	sqft	Existing	0.01	3	\$0.86	0%	0%	\$0.35	0.00	0.00	AEG Research
College	Cooling	Retrocommissioning	sqft	Existing	0.17	3	\$0.54	11%	52%	\$0.22	10.48	17.40	AEG Research
College	Heating	Retrocommissioning	sqft	Existing	0.27	3	\$0.54	11%	52%	\$0.22	7.10	10.05	AEG Research
College	Ventilation	Retrocommissioning	sqft	Existing	0.06	3	\$0.54	11%	52%	\$0.22	4.06	7.08	AEG Research
College	Water Heating	Retrocommissioning	sqft	Existing	0.02	3	\$0.54	11%	52%	\$0.22	0.74	1.82	AEG Research
College	Interior Lighting	Retrocommissioning	sqft	Existing	0.11	3	\$0.54	11%	52%	\$0.22	6.91	14.26	AEG Research
College	Exterior Lighting	Retrocommissioning	sqft	Existing	0.03	3	\$0.54	11%	52%	\$0.22	1.88	3.95	AEG Research
College	Refrigeration	Retrocommissioning	sqft	Existing	0.01	3	\$0.54	11%	52%	\$0.22	0.99	1.21	AEG Research
College	Interior Lighting	Fruit Storage - Lighting Controls	sqft	Existing	0.08	10	\$0.09	0%	0%	\$0.10	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
College	Refrigeration	Fruit Storage Refrigeration Retrofit	sqft	Existing	0.04	10	\$1.09	0%	0%	\$3.63	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
College	Refrigeration	Fruit Storage Refrigeration Tuneup	sqft	Existing	0.01	3	\$0.23	0%	0%	\$7.45	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
College	Refrigeration	Fruit Storage Retrofit - CO2 Scrub	sqft	Existing	0.02	10	\$3.13	0%	0%	\$21.53	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
College	Refrigeration	Fruit Storage Retrofit - Membrane	sqft	Existing	0.00	10	\$0.68	0%	0%	\$23.37	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
College	Cooling	Insulation - Ceiling	sqft roof	New	0.00	45	\$1.28	15%	50%	\$1.20	0.00	0.00	Building Energy Simulation Tool
College	Heating	Insulation - Ceiling	sqft roof	New	0.06	45	\$1.28	15%	50%	\$1.20	0.41	0.46	Building Energy Simulation Tool
College	Ventilation	Insulation - Ceiling	sqft roof	New	0.01	45	\$1.28	15%	50%	\$1.20	0.23	0.30	Building Energy Simulation Tool
College	Cooling	Insulation - Ducting	sqft duct	New	0.36	20	\$0.84	15%	50%	\$0.00	2.88	3.34	Building Energy Simulation Tool

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College	Heating	Insulation - Ducting	sqft duct	New	0.00	20	\$0.84	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
College	Ventilation	Insulation - Ducting	sqft duct	New	0.00	20	\$0.84	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
College	Cooling	Building Shell - Cool Roofs	sqft roof	New	0.12	20	\$0.78	45%	50%	\$0.70	0.28	0.33	Building Energy Simulation Tool
College	Heating	Building Shell - Cool Roofs	sqft roof	New	-0.03	20	\$0.78	45%	50%	\$0.70	-0.03	-0.03	Building Energy Simulation Tool
College	Ventilation	Building Shell - Cool Roofs	sqft roof	New	0.00	20	\$0.78	45%	50%	\$0.70	-0.01	-0.02	Building Energy Simulation Tool
College	Cooling	Insulation - Wall Cavity	sqft wall	New	-0.03	45	\$0.78	15%	50%	\$3.07	-0.13	-0.16	Building Energy Simulation Tool
College	Heating	Insulation - Wall Cavity	sqft wall	New	0.04	45	\$0.78	15%	50%	\$3.07	0.08	0.09	Building Energy Simulation Tool
College	Ventilation	Insulation - Wall Cavity	sqft wall	New	0.01	45	\$0.78	15%	50%	\$3.07	0.05	0.06	Building Energy Simulation Tool
College	Cooling	HVAC - Duct Repair and Sealing	tonCool	New	17.35	18	\$0.57	15%	35%	\$0.01	0.60	0.70	Building Energy Simulation Tool
College	Heating	HVAC - Duct Repair and Sealing	tonCool	New	-7.70	18	\$0.57	15%	35%	\$0.01	-0.11	-0.12	Building Energy Simulation Tool
College	Ventilation	HVAC - Duct Repair and Sealing	tonCool	New	-1.31	18	\$0.57	15%	35%	\$0.01	-0.06	-0.08	Building Energy Simulation Tool
College	Cooling	Windows - High Efficiency Glazing	sqft window	New	6.73	30	\$35.93	66%	66%	\$0.09	0.00	0.00	7th Power Plan
College	Heating	Windows - High Efficiency Glazing	sqft window	New	22.98	30	\$35.93	66%	66%	\$0.09	0.00	0.00	7th Power Plan
College	Ventilation	Windows - High Efficiency Glazing	sqft window	New	2.26	30	\$35.93	66%	66%	\$0.09	0.00	0.00	7th Power Plan
College	Cooling	Chiller - Chilled Water Reset	ChillCtrl	New	11,254.22	10	\$884.85	15%	75%	\$0.01	1.13	1.52	AEG-BEST
College	Cooling	Chiller - Chilled Water Variable-Flow System	HP cool	New	319.37	15	\$332.55	15%	75%	\$0.10	5.59	7.34	AEG-BEST
College	Cooling	Chiller - Variable Speed Fans	HP fan	New	740.62	15	\$208.36	15%	75%	\$0.03	1.30	1.70	New Jersey TRM
College	Cooling	Water-Cooled Chiller - Condenser Water Reset	ChillCtrl	New	0.00	10	\$884.85	15%	75%	\$0.00	0.00	0.00	AEG-BEST
College	Cooling	HVAC - Economizer	HP cool	New	71.17	10	\$168.42	18%	75%	\$0.26	2.64	3.70	AEG-BEST

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College	Heating	Space Heating - Heat Recovery Ventilator	CFM	New	0.62	14	\$5.08	6%	75%	\$0.89	2.57	3.27	7th Power Plan
College	Ventilation	Ventilation - ECM on VAV Boxes	sqft	New	0.18	18	\$0.25	15%	20%	\$0.09	0.52	0.66	7th Power Plan
College	Ventilation	Ventilation - Variable Speed Control	sqft	New	0.02	15	\$181.39	19%	50%	\$664.71	0.21	0.32	AEG-BEST
College	Ventilation	Ventilation - Demand Controlled	sqft	New	0.01	15	\$0.25	15%	75%	\$2.11	0.17	0.27	7th Power Plan
College	Cooling	Destratification Fans (HVLS)	Strat Fan	New	3,073.01	15	\$7,270.90	15%	25%	\$0.06	0.76	1.00	AEG Research
College	Heating	Destratification Fans (HVLS)	Strat Fan	New	9,741.93	15	\$7,270.90	15%	25%	\$0.06	0.96	1.18	AEG Research
College	Cooling	RTU - Maintenance	tonCool	New	27.91	3	\$35.00	15%	45%	\$0.33	0.13	0.21	AEG Research
College	Cooling	RTU - Advanced Controls	sqft	New	0.06	15	\$0.07	15%	45%	\$0.10	0.43	0.52	7th Power Plan
College	Cooling	RTU - Evaporative Precooler	tonCool	New	56.31	15	\$681.62	15%	75%	\$1.04	3.66	4.27	AEG Research
College	Cooling	Ductless Mini Split Heat Pump	tonCool	New	117.03	15	\$3,359.26	15%	25%	\$0.84	0.06	0.08	7th Power Plan
College	Heating	Ductless Mini Split Heat Pump	tonCool	New	264.48	15	\$3,359.26	15%	25%	\$0.84	1.20	1.48	7th Power Plan
College	Cooling	Thermostat - WiFi/Interactive	sqft	New	0.48	5	\$0.66	30%	40%	\$0.09	0.26	0.38	7th Power Plan
College	Heating	Thermostat - WiFi/Interactive	sqft	New	0.79	5	\$0.66	30%	40%	\$0.09	0.17	0.23	7th Power Plan
College	Ventilation	Thermostat - WiFi/Interactive	sqft	New	0.13	5	\$0.66	30%	40%	\$0.09	0.10	0.16	7th Power Plan
College	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	New	11.84	10	\$8.35	25%	65%	\$0.05	0.03	0.05	Illinois TRM
College	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	New	30.66	10	\$11.64	25%	65%	\$0.02	0.03	0.07	7th Power Plan
College	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	New	42.85	15	\$36.75	15%	25%	\$0.05	0.07	0.10	Hawaii TRM
College	Water Heating	Water Heater - Pipe Insulation	PipeFeet	New	319.11	15	\$14.88	1%	75%	\$0.00	0.75	1.39	AEG-BEST
College	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	New	60.72	4	\$144.04	25%	65%	\$0.30	0.05	0.12	7th Power Plan
College	Water Heating	Water Heater - Thermostat Setback	WHunits	New	42.86	2	\$5.00	15%	75%	\$0.03	0.03	0.08	Illinois TRM
College	Water Heating	Water Heater - Solar System	PipeFeet	New	1,109.26	20	\$215.28	1%	30%	\$0.01	1.06	1.94	AEG-BEST

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College	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.31	15	\$0.35	11%	23%	\$0.08	3.79	5.21	7th Power Plan
College	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.42	15	\$0.58	11%	23%	\$0.10	5.21	7.21	7th Power Plan
College	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	New	254.21	15	\$54.41	1%	3%	\$0.02	0.05	0.09	7th Power Plan
College	Interior Lighting	Interior Lighting - Timeclocks and Timers	occ sens	New	0.00	8	\$111.67	7%	15%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
College	Interior Lighting	Interior Lighting - Skylights	1000 sqft	New	0.00	15	\$1,006.35	18%	33%	\$0.00	0.00	0.00	AEG Research
College	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	1000 sqft	New	197.54	16	\$1,807.69	5%	15%	\$0.60	0.61	0.99	7th Power Plan
College	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	New	2,055.80	11	\$30.80	15%	50%	\$0.00	1.88	3.07	Illinois TRM
College	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	ELtg Watts	New	0.28	8	\$0.63	15%	25%	\$0.22	0.47	0.87	7th Power Plan
College	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	New	26.01	8	\$55.10	15%	25%	\$0.21	0.25	0.47	Pacific Gas and Electric Research
College	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	New	31.60	7	\$3,400.00	15%	30%	\$11.60	0.41	0.76	AEG Research
College	Refrigeration	Refrigeration - Anti-Sweat Heater	Fridge Feet	New	6.88	8	\$48.18	4%	25%	\$1.06	0.01	0.01	7th Power Plan
College	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	New	16.93	4	\$10.44	4%	25%	\$0.16	0.01	0.01	Michigan Energy Measures Database
College	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	New	154.02	16	\$165.20	4%	25%	\$0.11	0.03	0.04	7th Power Plan
College	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	New	14.99	15	\$335.85	0%	0%	\$2.33	0.00	0.00	7th Power Plan
College	Refrigeration	Refrigeration - Strip Curtain	Walkin Door	New	11.52	2	\$10.41	4%	25%	\$0.42	0.00	0.00	7th Power Plan
College	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	New	0.22	15	\$45.43	2%	13%	\$20.76	0.04	0.05	Annual Energy Outlook, 2015
College	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	New	4.72	15	\$313.82	2%	13%	\$6.92	0.07	0.10	Annual Energy Outlook, 2015
College	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	New	102.18	10	\$506.05	4%	25%	\$0.65	0.02	0.02	Vermont TRM
College	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	New	4.83	6	\$45.41	0%	0%	\$1.75	0.00	0.00	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
College	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	New	0.39	8	\$3.72	0%	0%	\$1.45	0.00	0.00	7th Power Plan
College	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	New	87.77	5	\$45.85	0%	0%	\$0.11	0.00	0.00	Illinois TRM
College	Refrigeration	Grocery - ECMs for Display Cases	Fridge Case	New	20.10	16	\$165.20	4%	25%	\$0.83	0.01	0.01	7th Power Plan
College	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	New	1,048.06	5	\$187.94	25%	75%	\$0.04	0.04	0.05	Illinois TRM
College	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	New	1,714.08	18	\$8,526.67	25%	50%	\$0.31	1.00	1.27	7th Power Plan
College	Office Equipment	Office Equipment - Smart Power Strips	Smart Strip	New	22.82	4	\$41.63	10%	50%	\$0.42	0.18	0.23	7th Power Plan
College	Cooling	Lodging - Guest Room Controls	LodgUnit	New	112.64	15	\$260.00	0%	0%	\$10.00	0.00	0.00	AEG-BEST
College	Heating	Lodging - Guest Room Controls	LodgUnit	New	-153.05	15	\$260.00	0%	0%	\$10.00	0.00	0.00	AEG-BEST
College	Office Equipment	Data Center - Best Practice Measures	sqft	New	0.01	5	\$0.00	0%	0%	\$0.02	0.00	0.00	com-datacenters-7p_v5p.xlsx
College	Cooling	Data Center - Commercially Available Measures	sqft	New	0.01	8	\$0.00	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
College	Ventilation	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
College	Interior Lighting	Data Center - Commercially Available Measures	sqft	New	0.02	8	\$0.00	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
College	Office Equipment	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
College	Cooling	Data Center - Cutting Edge Measures	sqft	New	0.03	6	\$0.00	0%	0%	\$0.02	0.00	0.00	com-datacenters-7p_v5p.xlsx
College	Office Equipment	Data Center - Cutting Edge Measures	sqft	New	0.00	6	\$0.00	0%	0%	\$0.02	0.00	0.00	com-datacenters-7p_v5p.xlsx
College	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	New	1,540.16	18	\$4,092.80	0%	5%	\$0.17	0.15	0.19	7th Power Plan
College	Miscellaneous	Pool Pump - Timer	perBldg	New	406.57	10	\$85.22	15%	75%	\$0.03	0.15	0.19	Ontario Power TRM
College	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	New	3,107.13	6	\$35.93	1%	3%	\$0.00	0.07	0.09	7th Power Plan
College	Cooling	Advanced New Construction Designs	sqft	New	0.78	25	\$4.11	10%	30%	\$0.09	7.96	9.19	AEG Research

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
College	Heating	Advanced New Construction Designs	sqft	New	1.28	25	\$4.11	10%	30%	\$0.09	5.19	5.83	AEG Research
College	Ventilation	Advanced New Construction Designs	sqft	New	0.22	25	\$4.11	10%	30%	\$0.09	2.95	3.74	AEG Research
College	Water Heating	Advanced New Construction Designs	sqft	New	0.25	25	\$4.11	10%	30%	\$0.09	1.73	2.40	AEG Research
College	Interior Lighting	Advanced New Construction Designs	sqft	New	0.58	25	\$4.11	10%	30%	\$0.09	6.30	8.14	AEG Research
College	Exterior Lighting	Advanced New Construction Designs	sqft	New	0.16	25	\$4.11	10%	30%	\$0.09	1.69	2.24	AEG Research
College	Cooling	Strategic Energy Management	sqft	New	0.11	3	\$0.20	3%	29%	\$0.10	0.15	0.24	AEG Research
College	Heating	Strategic Energy Management	sqft	New	0.19	3	\$0.20	3%	29%	\$0.10	0.10	0.14	AEG Research
College	Ventilation	Strategic Energy Management	sqft	New	0.03	3	\$0.20	3%	29%	\$0.10	0.06	0.10	AEG Research
College	Water Heating	Strategic Energy Management	sqft	New	0.04	3	\$0.20	3%	29%	\$0.10	0.03	0.08	AEG Research
College	Interior Lighting	Strategic Energy Management	sqft	New	0.09	3	\$0.20	3%	29%	\$0.10	0.12	0.26	AEG Research
College	Exterior Lighting	Strategic Energy Management	sqft	New	0.02	3	\$0.20	3%	29%	\$0.10	0.03	0.07	AEG Research
College	Refrigeration	Strategic Energy Management	sqft	New	0.00	3	\$0.20	3%	29%	\$0.10	0.01	0.01	AEG Research
College	Office Equipment	Strategic Energy Management	sqft	New	0.03	3	\$0.20	3%	29%	\$0.10	0.04	0.05	AEG Research
College	Cooling	Commissioning	sqft	New	0.16	3	\$0.82	11%	52%	\$0.34	0.33	0.53	AEG Research
College	Heating	Commissioning	sqft	New	0.26	3	\$0.82	11%	52%	\$0.34	0.22	0.31	AEG Research
College	Ventilation	Commissioning	sqft	New	0.05	3	\$0.82	11%	52%	\$0.34	0.13	0.22	AEG Research
College	Water Heating	Commissioning	sqft	New	0.02	3	\$0.82	11%	52%	\$0.34	0.02	0.06	AEG Research
College	Interior Lighting	Commissioning	sqft	New	0.10	3	\$0.82	11%	52%	\$0.34	0.23	0.47	AEG Research
College	Exterior Lighting	Commissioning	sqft	New	0.03	3	\$0.82	11%	52%	\$0.34	0.06	0.13	AEG Research
College	Refrigeration	Commissioning	sqft	New	0.01	3	\$0.82	11%	52%	\$0.34	0.03	0.03	AEG Research
College	Cooling	Retrocommissioning	sqft	New	0.16	3	\$0.52	0%	0%	\$0.22	0.00	0.00	AEG Research
College	Heating	Retrocommissioning	sqft	New	0.26	3	\$0.52	0%	0%	\$0.22	0.00	0.00	AEG Research

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College	Ventilation	Retrocommissioning	sqft	New	0.05	3	\$0.52	0%	0%	\$0.22	0.00	0.00	AEG Research
College	Water Heating	Retrocommissioning	sqft	New	0.02	3	\$0.52	0%	0%	\$0.22	0.00	0.00	AEG Research
College	Interior Lighting	Retrocommissioning	sqft	New	0.10	3	\$0.52	0%	0%	\$0.22	0.00	0.00	AEG Research
College	Exterior Lighting	Retrocommissioning	sqft	New	0.03	3	\$0.52	0%	0%	\$0.22	0.00	0.00	AEG Research
College	Refrigeration	Retrocommissioning	sqft	New	0.01	3	\$0.52	0%	0%	\$0.22	0.00	0.00	AEG Research
College	Interior Lighting	Fruit Storage - Lighting Controls	sqft	New	0.07	10	\$0.09	0%	0%	\$0.10	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
College	Refrigeration	Fruit Storage Refrigeration Retrofit	sqft	New	0.03	10	\$1.09	0%	0%	\$4.07	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
College	Refrigeration	Fruit Storage Refrigeration Tuneup	sqft	New	0.01	3	\$0.23	0%	0%	\$8.35	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
College	Refrigeration	Fruit Storage Retrofit - CO2 Scrub	sqft	New	0.02	10	\$3.13	0%	0%	\$24.14	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
College	Refrigeration	Fruit Storage Retrofit - Membrane	sqft	New	0.00	10	\$0.68	0%	0%	\$26.20	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
School	Cooling	Insulation - Ceiling	sqft roof	Existing	0.01	45	\$1.28	15%	35%	\$0.37	1.60	2.14	Building Energy Simulation Tool
School	Heating	Insulation - Ceiling	sqft roof	Existing	0.22	45	\$1.28	15%	35%	\$0.37	9.47	11.40	Building Energy Simulation Tool
School	Ventilation	Insulation - Ceiling	sqft roof	Existing	0.04	45	\$1.28	15%	35%	\$0.37	5.85	8.40	Building Energy Simulation Tool
School	Cooling	Insulation - Ducting	sqft duct	Existing	0.25	20	\$0.84	15%	35%	\$0.00	16.55	21.97	Building Energy Simulation Tool
School	Heating	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.84	15%	35%	\$0.00	0.00	0.00	Building Energy Simulation Tool
School	Ventilation	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.84	15%	35%	\$0.00	0.00	0.00	Building Energy Simulation Tool
School	Cooling	Building Shell - Cool Roofs	sqft roof	Existing	0.20	20	\$0.78	45%	50%	\$0.64	6.95	8.74	Building Energy Simulation Tool
School	Heating	Building Shell - Cool Roofs	sqft roof	Existing	-0.08	20	\$0.78	45%	50%	\$0.64	-0.89	-1.07	Building Energy Simulation Tool
School	Ventilation	Building Shell - Cool Roofs	sqft roof	Existing	-0.01	20	\$0.78	45%	50%	\$0.64	-0.55	-0.79	Building Energy Simulation Tool
School	Cooling	Insulation - Wall Cavity	sqft wall	Existing	-0.18	45	\$0.78	15%	35%	\$0.45	-7.94	-10.02	Building Energy Simulation Tool

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School	Heating	Insulation - Wall Cavity	sqft wall	Existing	0.28	45	\$0.78	15%	35%	\$0.45	3.76	4.53	Building Energy Simulation Tool
School	Ventilation	Insulation - Wall Cavity	sqft wall	Existing	0.05	45	\$0.78	15%	35%	\$0.45	2.35	3.35	Building Energy Simulation Tool
School	Cooling	HVAC - Duct Repair and Sealing	tonCool	Existing	12.27	18	\$0.57	15%	50%	\$0.01	11.89	15.01	Building Energy Simulation Tool
School	Heating	HVAC - Duct Repair and Sealing	tonCool	Existing	-4.43	18	\$0.57	15%	50%	\$0.01	-1.35	-1.62	Building Energy Simulation Tool
School	Ventilation	HVAC - Duct Repair and Sealing	tonCool	Existing	-0.72	18	\$0.57	15%	50%	\$0.01	-0.84	-1.20	Building Energy Simulation Tool
School	Cooling	Windows - High Efficiency Glazing	sqft window	Existing	4.41	30	\$35.93	48%	48%	\$0.14	0.00	0.00	7th Power Plan
School	Heating	Windows - High Efficiency Glazing	sqft window	Existing	15.50	30	\$35.93	48%	48%	\$0.14	0.00	0.00	7th Power Plan
School	Ventilation	Windows - High Efficiency Glazing	sqft window	Existing	1.44	30	\$35.93	48%	48%	\$0.14	0.00	0.00	7th Power Plan
School	Cooling	Chiller - Chilled Water Reset	ChillCtrl	Existing	7,673.23	10	\$884.85	15%	75%	\$0.01	23.20	32.16	AEG-BEST
School	Cooling	Chiller - Chilled Water Variable-Flow System	HP cool	Existing	214.24	15	\$332.55	15%	75%	\$0.15	89.04	126.63	AEG-BEST
School	Cooling	Chiller - Variable Speed Fans	HP fan	Existing	501.56	15	\$208.36	15%	75%	\$0.04	21.00	29.41	New Jersey TRM
School	Cooling	Water-Cooled Chiller - Condenser Water Reset	ChillCtrl	Existing	0.00	10	\$884.85	15%	75%	\$0.00	0.00	0.00	AEG-BEST
School	Cooling	HVAC - Economizer	HP cool	Existing	48.69	10	\$168.42	18%	75%	\$0.40	58.31	88.01	AEG-BEST
School	Heating	Space Heating - Heat Recovery Ventilator	CFM	Existing	0.49	14	\$5.08	3%	75%	\$1.14	39.39	51.85	7th Power Plan
School	Ventilation	Ventilation - ECM on VAV Boxes	sqft	Existing	0.12	18	\$0.25	15%	20%	\$0.17	4.87	6.95	7th Power Plan
School	Ventilation	Ventilation - Variable Speed Control	sqft	Existing	0.01	15	\$181.39	13%	50%	\$1,341.29	3.61	6.33	AEG-BEST
School	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.01	15	\$0.25	15%	75%	\$4.27	2.64	4.50	7th Power Plan
School	Cooling	Destratification Fans (HVLS)	Strat Fan	Existing	2,007.11	15	\$7,270.90	15%	15%	\$0.09	0.00	0.00	AEG Research
School	Heating	Destratification Fans (HVLS)	Strat Fan	Existing	6,523.94	15	\$7,270.90	15%	15%	\$0.09	0.00	0.00	AEG Research
School	Cooling	RTU - Maintenance	tonCool	Existing	19.15	3	\$35.00	15%	45%	\$0.50	8.28	13.73	AEG Research
School	Cooling	RTU - Advanced Controls	sqft	Existing	0.09	15	\$0.07	15%	45%	\$0.08	9.18	11.72	7th Power Plan

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School	Cooling	RTU - Evaporative Precooler	tonCool	Existing	38.76	15	\$681.62	15%	75%	\$1.55	29.96	38.38	AEG Research
School	Cooling	Ductless Mini Split Heat Pump	tonCool	Existing	85.42	15	\$3,359.26	15%	25%	\$1.11	0.75	1.17	7th Power Plan
School	Heating	Ductless Mini Split Heat Pump	tonCool	Existing	206.41	15	\$3,359.26	15%	25%	\$1.11	9.66	12.62	7th Power Plan
School	Cooling	Thermostat - WiFi/Interactive	sqft	Existing	0.31	5	\$0.66	30%	40%	\$0.14	20.35	27.82	7th Power Plan
School	Heating	Thermostat - WiFi/Interactive	sqft	Existing	0.52	5	\$0.66	30%	40%	\$0.14	10.97	13.65	7th Power Plan
School	Ventilation	Thermostat - WiFi/Interactive	sqft	Existing	0.09	5	\$0.66	30%	40%	\$0.14	7.05	10.36	7th Power Plan
School	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	Existing	6.86	10	\$8.35	25%	65%	\$0.10	0.45	1.10	Illinois TRM
School	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	Existing	17.77	10	\$11.64	25%	65%	\$0.05	0.58	1.42	7th Power Plan
School	Water Heating	Water Heater - High Efficiency Circulation Pump	WHUnits	Existing	51.38	15	\$36.75	15%	25%	\$0.05	0.59	1.11	Hawaii TRM
School	Water Heating	Water Heater - Pipe Insulation	PipeFeet	Existing	190.79	15	\$14.88	16%	75%	\$0.01	7.93	17.34	AEG-BEST
School	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	Existing	35.32	4	\$144.04	25%	65%	\$0.63	2.27	5.39	7th Power Plan
School	Water Heating	Water Heater - Thermostat Setback	WHUnits	Existing	51.21	2	\$5.00	15%	75%	\$0.03	3.85	9.02	Illinois TRM
School	Water Heating	Water Heater - Solar System	PipeFeet	Existing	657.39	20	\$215.28	1%	30%	\$0.02	13.21	29.57	AEG-BEST
School	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.22	15	\$0.35	3%	23%	\$0.13	42.60	63.87	7th Power Plan
School	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.30	15	\$0.58	3%	23%	\$0.15	57.39	88.04	7th Power Plan
School	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	Existing	183.90	15	\$54.41	1%	3%	\$0.02	1.20	2.34	7th Power Plan
School	Interior Lighting	Interior Lighting - Timeclocks and Timers	occ sens	Existing	0.00	8	\$111.67	7%	15%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
School	Interior Lighting	Interior Lighting - Skylights	1000 sqft	Existing	0.00	15	\$1,006.35	15%	30%	\$0.00	0.00	0.00	AEG Research
School	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	1000 sqft	Existing	153.77	16	\$1,807.69	5%	15%	\$0.87	11.63	23.82	7th Power Plan

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School	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	Existing	1,604.96	11	\$30.80	15%	50%	\$0.00	45.41	83.99	Illinois TRM
School	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	ELtg Watts	Existing	0.29	8	\$0.63	15%	25%	\$0.25	15.74	32.25	7th Power Plan
School	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	Existing	27.87	8	\$55.10	15%	25%	\$0.23	8.59	17.32	Pacific Gas and Electric Research
School	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	Existing	32.32	7	\$3,400.00	15%	30%	\$12.57	14.43	31.11	AEG Research
School	Refrigeration	Refrigeration - Anti-Sweat Heater	Fridge Feet	Existing	9.19	8	\$48.18	4%	25%	\$0.78	0.66	1.24	7th Power Plan
School	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	Existing	19.82	4	\$10.44	4%	25%	\$0.13	1.33	2.15	Michigan Energy Measures Database
School	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	Existing	188.20	16	\$165.20	4%	25%	\$0.09	1.97	3.13	7th Power Plan
School	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	Existing	16.68	15	\$335.85	0%	0%	\$2.06	0.00	0.00	7th Power Plan
School	Refrigeration	Refrigeration - Strip Curtain	Walkin Door	Existing	13.41	2	\$10.41	4%	25%	\$0.36	0.50	0.80	7th Power Plan
School	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	Existing	0.24	15	\$45.43	2%	13%	\$18.32	2.89	4.52	Annual Energy Outlook, 2015
School	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	Existing	5.21	15	\$313.82	2%	13%	\$6.11	5.36	8.04	Annual Energy Outlook, 2015
School	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	Existing	122.22	10	\$506.05	4%	25%	\$0.53	1.27	2.06	Vermont TRM
School	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	Existing	5.43	6	\$45.41	0%	0%	\$1.52	0.00	0.00	7th Power Plan
School	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	Existing	0.44	8	\$3.72	0%	0%	\$1.26	0.00	0.00	7th Power Plan
School	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	Existing	97.40	5	\$45.85	0%	0%	\$0.10	0.00	0.00	Illinois TRM
School	Refrigeration	Grocery - ECMs for Display Cases	Fridge Case	Existing	22.74	16	\$165.20	4%	25%	\$0.72	0.58	0.85	7th Power Plan
School	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	Existing	1,071.36	5	\$187.94	25%	75%	\$0.04	7.41	9.78	Illinois TRM
School	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	Existing	1,102.12	18	\$8,526.67	25%	50%	\$0.62	9.15	13.25	7th Power Plan
School	Office Equipment	Office Equipment - Smart Power Strips	Smart Strip	Existing	15.55	4	\$41.63	10%	50%	\$0.62	12.93	15.49	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
School	Cooling	Lodging - Guest Room Controls	LodgUnit	Existing	80.14	15	\$260.00	0%	0%	\$10.00	0.00	0.00	AEG-BEST
School	Heating	Lodging - Guest Room Controls	LodgUnit	Existing	-116.50	15	\$260.00	0%	0%	\$10.00	0.00	0.00	AEG-BEST
School	Office Equipment	Data Center - Best Practice Measures	sqft	Existing	0.01	5	\$0.00	0%	0%	\$0.02	0.00	0.00	com-datacenters-7p_v5p.xlsx
School	Cooling	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.00	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
School	Ventilation	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.00	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
School	Interior Lighting	Data Center - Commercially Available Measures	sqft	Existing	0.02	8	\$0.00	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
School	Office Equipment	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.00	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
School	Cooling	Data Center - Cutting Edge Measures	sqft	Existing	0.02	6	\$0.00	0%	0%	\$0.02	0.00	0.00	com-datacenters-7p_v5p.xlsx
School	Office Equipment	Data Center - Cutting Edge Measures	sqft	Existing	0.00	6	\$0.00	0%	0%	\$0.02	0.00	0.00	com-datacenters-7p_v5p.xlsx
School	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	Existing	996.41	18	\$4,092.80	0%	0%	\$0.33	0.00	0.00	7th Power Plan
School	Miscellaneous	Pool Pump - Timer	perBldg	Existing	468.49	10	\$85.22	15%	75%	\$0.02	0.50	0.59	Ontario Power TRM
School	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	Existing	2,154.77	6	\$35.93	1%	3%	\$0.00	4.65	5.39	7th Power Plan
School	Cooling	Advanced New Construction Designs	sqft	Existing	0.51	25	\$4.11	0%	0%	\$0.14	0.00	0.00	AEG Research
School	Heating	Advanced New Construction Designs	sqft	Existing	0.85	25	\$4.11	0%	0%	\$0.14	0.00	0.00	AEG Research
School	Ventilation	Advanced New Construction Designs	sqft	Existing	0.14	25	\$4.11	0%	0%	\$0.14	0.00	0.00	AEG Research
School	Water Heating	Advanced New Construction Designs	sqft	Existing	0.14	25	\$4.11	0%	0%	\$0.14	0.00	0.00	AEG Research
School	Interior Lighting	Advanced New Construction Designs	sqft	Existing	0.42	25	\$4.11	0%	0%	\$0.14	0.00	0.00	AEG Research
School	Exterior Lighting	Advanced New Construction Designs	sqft	Existing	0.14	25	\$4.11	0%	0%	\$0.14	0.00	0.00	AEG Research
School	Cooling	Strategic Energy Management	sqft	Existing	0.07	3	\$0.13	2%	22%	\$0.10	10.25	16.67	AEG Research

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
School	Heating	Strategic Energy Management	sqft	Existing	0.12	3	\$0.13	2%	22%	\$0.10	5.64	7.90	AEG Research
School	Ventilation	Strategic Energy Management	sqft	Existing	0.02	3	\$0.13	2%	22%	\$0.10	3.66	6.28	AEG Research
School	Water Heating	Strategic Energy Management	sqft	Existing	0.02	3	\$0.13	2%	22%	\$0.10	1.77	4.24	AEG Research
School	Interior Lighting	Strategic Energy Management	sqft	Existing	0.06	3	\$0.13	2%	22%	\$0.10	9.75	20.10	AEG Research
School	Exterior Lighting	Strategic Energy Management	sqft	Existing	0.02	3	\$0.13	2%	22%	\$0.10	2.95	6.24	AEG Research
School	Refrigeration	Strategic Energy Management	sqft	Existing	0.01	3	\$0.13	2%	22%	\$0.10	2.34	3.16	AEG Research
School	Office Equipment	Strategic Energy Management	sqft	Existing	0.02	3	\$0.13	2%	22%	\$0.10	3.52	4.30	AEG Research
School	Cooling	Commissioning	sqft	Existing	0.10	3	\$0.54	0%	0%	\$0.34	0.00	0.00	AEG Research
School	Heating	Commissioning	sqft	Existing	0.17	3	\$0.54	0%	0%	\$0.34	0.00	0.00	AEG Research
School	Ventilation	Commissioning	sqft	Existing	0.03	3	\$0.54	0%	0%	\$0.34	0.00	0.00	AEG Research
School	Water Heating	Commissioning	sqft	Existing	0.01	3	\$0.54	0%	0%	\$0.34	0.00	0.00	AEG Research
School	Interior Lighting	Commissioning	sqft	Existing	0.07	3	\$0.54	0%	0%	\$0.34	0.00	0.00	AEG Research
School	Exterior Lighting	Commissioning	sqft	Existing	0.02	3	\$0.54	0%	0%	\$0.34	0.00	0.00	AEG Research
School	Refrigeration	Commissioning	sqft	Existing	0.03	3	\$0.54	0%	0%	\$0.34	0.00	0.00	AEG Research
School	Cooling	Retrocommissioning	sqft	Existing	0.10	3	\$0.34	13%	56%	\$0.21	30.23	49.43	AEG Research
School	Heating	Retrocommissioning	sqft	Existing	0.17	3	\$0.34	13%	56%	\$0.21	16.62	23.43	AEG Research
School	Ventilation	Retrocommissioning	sqft	Existing	0.03	3	\$0.34	13%	56%	\$0.21	10.79	18.61	AEG Research
School	Water Heating	Retrocommissioning	sqft	Existing	0.01	3	\$0.34	13%	56%	\$0.21	1.74	4.19	AEG Research
School	Interior Lighting	Retrocommissioning	sqft	Existing	0.07	3	\$0.34	13%	56%	\$0.21	23.96	49.66	AEG Research
School	Exterior Lighting	Retrocommissioning	sqft	Existing	0.02	3	\$0.34	13%	56%	\$0.21	7.26	15.42	AEG Research
School	Refrigeration	Retrocommissioning	sqft	Existing	0.03	3	\$0.34	13%	56%	\$0.21	11.25	15.48	AEG Research
School	Interior Lighting	Fruit Storage - Lighting Controls	sqft	Existing	0.05	10	\$0.09	0%	0%	\$0.16	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
School	Refrigeration	Fruit Storage Refrigeration Retrofit	sqft	Existing	0.09	10	\$1.09	0%	0%	\$1.56	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
School	Refrigeration	Fruit Storage Refrigeration Tuneup	sqft	Existing	0.02	3	\$0.23	0%	0%	\$3.20	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
School	Refrigeration	Fruit Storage Retrofit - CO2 Scrub	sqft	Existing	0.04	10	\$3.13	0%	0%	\$9.25	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
School	Refrigeration	Fruit Storage Retrofit - Membrane	sqft	Existing	0.01	10	\$0.68	0%	0%	\$10.04	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
School	Cooling	Insulation - Ceiling	sqft roof	New	0.00	45	\$1.28	15%	50%	\$2.01	0.00	0.00	Building Energy Simulation Tool
School	Heating	Insulation - Ceiling	sqft roof	New	0.04	45	\$1.28	15%	50%	\$2.01	0.82	0.93	Building Energy Simulation Tool
School	Ventilation	Insulation - Ceiling	sqft roof	New	0.01	45	\$1.28	15%	50%	\$2.01	0.53	0.68	Building Energy Simulation Tool
School	Cooling	Insulation - Ducting	sqft duct	New	0.21	20	\$0.84	15%	50%	\$0.00	7.11	8.23	Building Energy Simulation Tool
School	Heating	Insulation - Ducting	sqft duct	New	0.00	20	\$0.84	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
School	Ventilation	Insulation - Ducting	sqft duct	New	0.00	20	\$0.84	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
School	Cooling	Building Shell - Cool Roofs	sqft roof	New	0.07	20	\$0.78	45%	50%	\$1.19	0.69	0.80	Building Energy Simulation Tool
School	Heating	Building Shell - Cool Roofs	sqft roof	New	-0.02	20	\$0.78	45%	50%	\$1.19	-0.05	-0.06	Building Energy Simulation Tool
School	Ventilation	Building Shell - Cool Roofs	sqft roof	New	0.00	20	\$0.78	45%	50%	\$1.19	-0.03	-0.04	Building Energy Simulation Tool
School	Cooling	Insulation - Wall Cavity	sqft wall	New	-0.02	45	\$0.78	15%	50%	\$5.01	-0.33	-0.38	Building Energy Simulation Tool
School	Heating	Insulation - Wall Cavity	sqft wall	New	0.02	45	\$0.78	15%	50%	\$5.01	0.16	0.18	Building Energy Simulation Tool
School	Ventilation	Insulation - Wall Cavity	sqft wall	New	0.00	45	\$0.78	15%	50%	\$5.01	0.10	0.13	Building Energy Simulation Tool
School	Cooling	HVAC - Duct Repair and Sealing	tonCool	New	10.18	18	\$0.57	15%	35%	\$0.01	1.47	1.72	Building Energy Simulation Tool
School	Heating	HVAC - Duct Repair and Sealing	tonCool	New	-4.74	18	\$0.57	15%	35%	\$0.01	-0.21	-0.24	Building Energy Simulation Tool
School	Ventilation	HVAC - Duct Repair and Sealing	tonCool	New	-0.65	18	\$0.57	15%	35%	\$0.01	-0.14	-0.18	Building Energy Simulation Tool

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
School	Cooling	Windows - High Efficiency Glazing	sqft window	New	3.97	30	\$35.93	66%	66%	\$0.15	0.00	0.00	7th Power Plan
School	Heating	Windows - High Efficiency Glazing	sqft window	New	14.25	30	\$35.93	66%	66%	\$0.15	0.00	0.00	7th Power Plan
School	Ventilation	Windows - High Efficiency Glazing	sqft window	New	1.13	30	\$35.93	66%	66%	\$0.15	0.00	0.00	7th Power Plan
School	Cooling	Chiller - Chilled Water Reset	ChillCtrl	New	6,821.49	10	\$884.85	15%	75%	\$0.02	2.60	3.52	AEG-BEST
School	Cooling	Chiller - Chilled Water Variable-Flow System	HP cool	New	193.26	15	\$332.55	15%	75%	\$0.16	12.90	16.95	AEG-BEST
School	Cooling	Chiller - Variable Speed Fans	HP fan	New	449.08	15	\$208.36	15%	75%	\$0.04	3.00	3.93	New Jersey TRM
School	Cooling	Water-Cooled Chiller - Condenser Water Reset	ChillCtrl	New	0.00	10	\$884.85	15%	75%	\$0.00	0.00	0.00	AEG-BEST
School	Cooling	HVAC - Economizer	HP cool	New	43.55	10	\$168.42	18%	75%	\$0.43	6.75	9.41	AEG-BEST
School	Heating	Space Heating - Heat Recovery Ventilator	CFM	New	0.45	14	\$5.08	6%	75%	\$1.22	5.13	6.52	7th Power Plan
School	Ventilation	Ventilation - ECM on VAV Boxes	sqft	New	0.09	18	\$0.25	15%	20%	\$0.17	1.19	1.51	7th Power Plan
School	Ventilation	Ventilation - Variable Speed Control	sqft	New	0.01	15	\$181.39	19%	50%	\$1,331.70	0.48	0.72	AEG-BEST
School	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.25	15%	75%	\$4.24	0.40	0.61	7th Power Plan
School	Cooling	Destratification Fans (HVLS)	Strat Fan	New	1,806.10	15	\$7,270.90	15%	15%	\$0.09	0.00	0.00	AEG Research
School	Heating	Destratification Fans (HVLS)	Strat Fan	New	5,996.63	15	\$7,270.90	15%	15%	\$0.09	0.00	0.00	AEG Research
School	Cooling	RTU - Maintenance	tonCool	New	17.08	3	\$35.00	15%	45%	\$0.55	0.31	0.49	AEG Research
School	Cooling	RTU - Advanced Controls	sqft	New	0.07	15	\$0.07	15%	45%	\$0.08	2.01	2.44	7th Power Plan
School	Cooling	RTU - Evaporative Precooler	tonCool	New	34.44	15	\$681.62	15%	75%	\$1.71	8.61	10.03	AEG Research
School	Cooling	Ductless Mini Split Heat Pump	tonCool	New	71.61	15	\$3,359.26	15%	25%	\$1.22	0.14	0.18	7th Power Plan
School	Heating	Ductless Mini Split Heat Pump	tonCool	New	195.59	15	\$3,359.26	15%	25%	\$1.22	1.77	2.19	7th Power Plan
School	Cooling	Thermostat - WiFi/Interactive	sqft	New	0.28	5	\$0.66	30%	40%	\$0.15	0.64	0.94	7th Power Plan
School	Heating	Thermostat - WiFi/Interactive	sqft	New	0.48	5	\$0.66	30%	40%	\$0.15	0.33	0.45	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
School	Ventilation	Thermostat - WiFi/Interactive	sqft	New	0.07	5	\$0.66	30%	40%	\$0.15	0.22	0.37	7th Power Plan
School	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	New	5.73	10	\$8.35	25%	65%	\$0.10	0.05	0.10	Illinois TRM
School	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	New	14.82	10	\$11.64	25%	65%	\$0.05	0.07	0.13	7th Power Plan
School	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	New	42.82	15	\$36.75	15%	25%	\$0.05	0.13	0.20	Hawaii TRM
School	Water Heating	Water Heater - Pipe Insulation	PipeFeet	New	154.36	15	\$14.88	1%	75%	\$0.01	1.50	2.77	AEG-BEST
School	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	New	29.49	4	\$144.04	25%	65%	\$0.62	0.11	0.24	7th Power Plan
School	Water Heating	Water Heater - Thermostat Setback	WHunits	New	42.79	2	\$5.00	15%	75%	\$0.03	0.07	0.16	Illinois TRM
School	Water Heating	Water Heater - Solar System	PipeFeet	New	536.61	20	\$215.28	1%	30%	\$0.02	2.10	3.85	AEG-BEST
School	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.20	15	\$0.35	11%	23%	\$0.13	11.22	15.43	7th Power Plan
School	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.27	15	\$0.58	11%	23%	\$0.15	15.43	21.33	7th Power Plan
School	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	New	166.55	15	\$54.41	1%	3%	\$0.02	0.16	0.26	7th Power Plan
School	Interior Lighting	Interior Lighting - Timeclocks and Timers	occ sens	New	0.00	8	\$111.67	7%	15%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
School	Interior Lighting	Interior Lighting - Skylights	1000 sqft	New	0.00	15	\$1,006.35	18%	33%	\$0.00	0.00	0.00	AEG Research
School	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	1000 sqft	New	136.31	16	\$1,807.69	5%	15%	\$0.88	1.91	3.10	7th Power Plan
School	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	New	1,412.95	11	\$30.80	15%	50%	\$0.00	5.85	9.58	Illinois TRM
School	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	ELtg Watts	New	0.25	8	\$0.63	15%	25%	\$0.25	1.58	2.93	7th Power Plan
School	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fxt	New	24.02	8	\$55.10	15%	25%	\$0.23	0.87	1.57	Pacific Gas and Electric Research
School	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fxt	New	28.84	7	\$3,400.00	15%	30%	\$12.71	1.36	2.55	AEG Research
School	Refrigeration	Refrigeration - Anti-Sweat Heater	Fridge Feet	New	7.22	8	\$48.18	4%	25%	\$1.01	0.06	0.09	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
School	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	New	16.72	4	\$10.44	4%	25%	\$0.16	0.05	0.08	Michigan Energy Measures Database
School	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	New	159.08	16	\$165.20	4%	25%	\$0.11	0.29	0.38	7th Power Plan
School	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	New	15.77	15	\$335.85	0%	0%	\$2.22	0.00	0.00	7th Power Plan
School	Refrigeration	Refrigeration - Strip Curtain	Walkin Door	New	12.13	2	\$10.41	4%	25%	\$0.40	0.01	0.01	7th Power Plan
School	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	New	0.24	15	\$45.43	2%	13%	\$19.72	0.47	0.61	Annual Energy Outlook, 2015
School	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	New	4.96	15	\$313.82	2%	13%	\$6.57	0.83	1.06	Annual Energy Outlook, 2015
School	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	New	105.54	10	\$506.05	4%	25%	\$0.63	0.15	0.20	Vermont TRM
School	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	New	5.07	6	\$45.41	0%	0%	\$1.67	0.00	0.00	7th Power Plan
School	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	New	0.41	8	\$3.72	0%	0%	\$1.38	0.00	0.00	7th Power Plan
School	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	New	91.98	5	\$45.85	0%	0%	\$0.11	0.00	0.00	Illinois TRM
School	Refrigeration	Grocery - ECMs for Display Cases	Fridge Case	New	21.07	16	\$165.20	4%	25%	\$0.79	0.09	0.11	7th Power Plan
School	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	New	1,047.83	5	\$187.94	25%	75%	\$0.04	0.42	0.56	Illinois TRM
School	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	New	844.94	18	\$8,526.67	25%	50%	\$0.62	2.22	2.86	7th Power Plan
School	Office Equipment	Office Equipment - Smart Power Strips	Smart Strip	New	15.13	4	\$41.63	10%	50%	\$0.64	0.55	0.67	7th Power Plan
School	Cooling	Lodging - Guest Room Controls	LodgUnit	New	68.95	15	\$260.00	0%	0%	\$10.00	0.00	0.00	AEG-BEST
School	Heating	Lodging - Guest Room Controls	LodgUnit	New	-113.46	15	\$260.00	0%	0%	\$10.00	0.00	0.00	AEG-BEST
School	Office Equipment	Data Center - Best Practice Measures	sqft	New	0.01	5	\$0.00	0%	0%	\$0.02	0.00	0.00	com-datacenters-7p_v5p.xlsx
School	Cooling	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
School	Ventilation	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
School	Interior Lighting	Data Center - Commercially Available Measures	sqft	New	0.01	8	\$0.00	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
School	Office Equipment	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
School	Cooling	Data Center - Cutting Edge Measures	sqft	New	0.02	6	\$0.00	0%	0%	\$0.02	0.00	0.00	com-datacenters-7p_v5p.xlsx
School	Office Equipment	Data Center - Cutting Edge Measures	sqft	New	0.00	6	\$0.00	0%	0%	\$0.02	0.00	0.00	com-datacenters-7p_v5p.xlsx
School	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	New	767.81	18	\$4,092.80	0%	0%	\$0.33	0.00	0.00	7th Power Plan
School	Miscellaneous	Pool Pump - Timer	perBldg	New	468.86	10	\$85.22	15%	75%	\$0.02	0.05	0.06	Ontario Power TRM
School	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	New	2,153.79	6	\$35.93	1%	3%	\$0.00	0.23	0.29	7th Power Plan
School	Cooling	Advanced New Construction Designs	sqft	New	0.46	25	\$4.11	10%	25%	\$0.15	14.73	17.03	AEG Research
School	Heating	Advanced New Construction Designs	sqft	New	0.79	25	\$4.11	10%	25%	\$0.15	7.74	8.73	AEG Research
School	Ventilation	Advanced New Construction Designs	sqft	New	0.11	25	\$4.11	10%	25%	\$0.15	5.10	6.45	AEG Research
School	Water Heating	Advanced New Construction Designs	sqft	New	0.12	25	\$4.11	10%	25%	\$0.15	2.60	3.59	AEG Research
School	Interior Lighting	Advanced New Construction Designs	sqft	New	0.38	25	\$4.11	10%	25%	\$0.15	14.11	18.24	AEG Research
School	Exterior Lighting	Advanced New Construction Designs	sqft	New	0.12	25	\$4.11	10%	25%	\$0.15	4.22	5.66	AEG Research
School	Cooling	Strategic Energy Management	sqft	New	0.07	3	\$0.12	2%	22%	\$0.10	0.29	0.46	AEG Research
School	Heating	Strategic Energy Management	sqft	New	0.12	3	\$0.12	2%	22%	\$0.10	0.15	0.21	AEG Research
School	Ventilation	Strategic Energy Management	sqft	New	0.02	3	\$0.12	2%	22%	\$0.10	0.10	0.18	AEG Research
School	Water Heating	Strategic Energy Management	sqft	New	0.02	3	\$0.12	2%	22%	\$0.10	0.05	0.13	AEG Research
School	Interior Lighting	Strategic Energy Management	sqft	New	0.06	3	\$0.12	2%	22%	\$0.10	0.28	0.59	AEG Research
School	Exterior Lighting	Strategic Energy Management	sqft	New	0.02	3	\$0.12	2%	22%	\$0.10	0.08	0.18	AEG Research

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
School	Refrigeration	Strategic Energy Management	sqft	New	0.01	3	\$0.12	2%	22%	\$0.10	0.06	0.08	AEG Research
School	Office Equipment	Strategic Energy Management	sqft	New	0.02	3	\$0.12	2%	22%	\$0.10	0.10	0.12	AEG Research
School	Cooling	Commissioning	sqft	New	0.09	3	\$0.50	13%	56%	\$0.33	0.86	1.35	AEG Research
School	Heating	Commissioning	sqft	New	0.16	3	\$0.50	13%	56%	\$0.33	0.45	0.63	AEG Research
School	Ventilation	Commissioning	sqft	New	0.02	3	\$0.50	13%	56%	\$0.33	0.30	0.53	AEG Research
School	Water Heating	Commissioning	sqft	New	0.01	3	\$0.50	13%	56%	\$0.33	0.05	0.13	AEG Research
School	Interior Lighting	Commissioning	sqft	New	0.07	3	\$0.50	13%	56%	\$0.33	0.71	1.46	AEG Research
School	Exterior Lighting	Commissioning	sqft	New	0.02	3	\$0.50	13%	56%	\$0.33	0.21	0.44	AEG Research
School	Refrigeration	Commissioning	sqft	New	0.03	3	\$0.50	13%	56%	\$0.33	0.31	0.41	AEG Research
School	Cooling	Retrocommissioning	sqft	New	0.09	3	\$0.32	0%	0%	\$0.21	0.00	0.00	AEG Research
School	Heating	Retrocommissioning	sqft	New	0.16	3	\$0.32	0%	0%	\$0.21	0.00	0.00	AEG Research
School	Ventilation	Retrocommissioning	sqft	New	0.02	3	\$0.32	0%	0%	\$0.21	0.00	0.00	AEG Research
School	Water Heating	Retrocommissioning	sqft	New	0.01	3	\$0.32	0%	0%	\$0.21	0.00	0.00	AEG Research
School	Interior Lighting	Retrocommissioning	sqft	New	0.07	3	\$0.32	0%	0%	\$0.21	0.00	0.00	AEG Research
School	Exterior Lighting	Retrocommissioning	sqft	New	0.02	3	\$0.32	0%	0%	\$0.21	0.00	0.00	AEG Research
School	Refrigeration	Retrocommissioning	sqft	New	0.03	3	\$0.32	0%	0%	\$0.21	0.00	0.00	AEG Research
School	Interior Lighting	Fruit Storage - Lighting Controls	sqft	New	0.05	10	\$0.09	0%	0%	\$0.15	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
School	Refrigeration	Fruit Storage Refrigeration Retrofit	sqft	New	0.08	10	\$1.09	0%	0%	\$1.71	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
School	Refrigeration	Fruit Storage Refrigeration Tuneup	sqft	New	0.02	3	\$0.23	0%	0%	\$3.51	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
School	Refrigeration	Fruit Storage Retrofit - CO2 Scrub	sqft	New	0.04	10	\$3.13	0%	0%	\$10.15	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
School	Refrigeration	Fruit Storage Retrofit - Membrane	sqft	New	0.01	10	\$0.68	0%	0%	\$11.02	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Lodging	Cooling	Insulation - Ceiling	sqft roof	Existing	0.00	45	\$1.28	15%	35%	\$0.56	0.00	0.00	Building Energy Simulation Tool

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Lodging	Heating	Insulation - Ceiling	sqft roof	Existing	0.11	45	\$1.28	15%	35%	\$0.56	15.88	18.88	Building Energy Simulation Tool
Lodging	Ventilation	Insulation - Ceiling	sqft roof	Existing	0.06	45	\$1.28	15%	35%	\$0.56	13.34	17.76	Building Energy Simulation Tool
Lodging	Cooling	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.84	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Lodging	Heating	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.84	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Lodging	Ventilation	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.84	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Lodging	Cooling	Building Shell - Cool Roofs	sqft roof	Existing	0.26	20	\$0.78	45%	50%	\$0.46	13.11	16.42	Building Energy Simulation Tool
Lodging	Heating	Building Shell - Cool Roofs	sqft roof	Existing	-0.07	20	\$0.78	45%	50%	\$0.46	-2.66	-3.16	Building Energy Simulation Tool
Lodging	Ventilation	Building Shell - Cool Roofs	sqft roof	Existing	-0.04	20	\$0.78	45%	50%	\$0.46	-2.30	-3.00	Building Energy Simulation Tool
Lodging	Cooling	Insulation - Wall Cavity	sqft wall	Existing	-0.01	45	\$0.78	15%	35%	\$0.79	-0.43	-0.54	Building Energy Simulation Tool
Lodging	Heating	Insulation - Wall Cavity	sqft wall	Existing	0.05	45	\$0.78	15%	35%	\$0.79	2.99	3.51	Building Energy Simulation Tool
Lodging	Ventilation	Insulation - Wall Cavity	sqft wall	Existing	0.03	45	\$0.78	15%	35%	\$0.79	2.52	3.29	Building Energy Simulation Tool
Lodging	Cooling	HVAC - Duct Repair and Sealing	tonCool	Existing	0.00	18	\$0.57	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Lodging	Heating	HVAC - Duct Repair and Sealing	tonCool	Existing	0.00	18	\$0.57	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Lodging	Ventilation	HVAC - Duct Repair and Sealing	tonCool	Existing	0.00	18	\$0.57	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Lodging	Cooling	Windows - High Efficiency Glazing	sqft window	Existing	2.98	30	\$35.93	48%	48%	\$0.36	0.00	0.00	7th Power Plan
Lodging	Heating	Windows - High Efficiency Glazing	sqft window	Existing	3.75	30	\$35.93	48%	48%	\$0.36	0.00	0.00	7th Power Plan
Lodging	Ventilation	Windows - High Efficiency Glazing	sqft window	Existing	1.16	30	\$35.93	48%	48%	\$0.36	0.00	0.00	7th Power Plan
Lodging	Cooling	Chiller - Chilled Water Reset	ChillCtrl	Existing	5,338.04	10	\$884.85	15%	75%	\$0.02	5.52	7.82	AEG-BEST
Lodging	Cooling	Chiller - Chilled Water Variable-Flow System	HP cool	Existing	111.54	15	\$332.55	15%	75%	\$0.29	15.93	22.90	AEG-BEST

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Lodging	Cooling	Chiller - Variable Speed Fans	HP fan	Existing	277.75	15	\$208.36	15%	75%	\$0.07	3.98	5.67	New Jersey TRM
Lodging	Cooling	Water-Cooled Chiller - Condenser Water Reset	ChillCtrl	Existing	9,432.20	10	\$884.85	15%	75%	\$0.01	7.60	10.85	AEG-BEST
Lodging	Cooling	HVAC - Economizer	HP cool	Existing	76.24	10	\$168.42	18%	75%	\$0.27	52.11	73.62	AEG-BEST
Lodging	Heating	Space Heating - Heat Recovery Ventilator	CFM	Existing	0.56	14	\$5.08	3%	75%	\$0.99	61.58	79.68	7th Power Plan
Lodging	Ventilation	Ventilation - ECM on VAV Boxes	sqft	Existing	0.19	18	\$0.25	15%	20%	\$0.12	10.72	14.00	7th Power Plan
Lodging	Ventilation	Ventilation - Variable Speed Control	sqft	Existing	0.05	15	\$181.39	13%	50%	\$329.03	21.48	33.78	AEG-BEST
Lodging	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.01	15	\$0.25	15%	75%	\$2.88	5.74	8.77	7th Power Plan
Lodging	Cooling	Destratification Fans (HVLS)	Strat Fan	Existing	2,788.90	15	\$7,270.90	15%	30%	\$0.12	38.09	54.18	AEG Research
Lodging	Heating	Destratification Fans (HVLS)	Strat Fan	Existing	3,240.59	15	\$7,270.90	15%	30%	\$0.12	32.15	40.44	AEG Research
Lodging	Cooling	RTU - Maintenance	tonCool	Existing	47.82	3	\$35.00	15%	45%	\$0.22	7.82	11.53	AEG Research
Lodging	Cooling	RTU - Advanced Controls	sqft	Existing	0.14	15	\$0.07	15%	45%	\$0.05	7.72	9.70	7th Power Plan
Lodging	Cooling	RTU - Evaporative Precooler	tonCool	Existing	96.14	15	\$681.62	15%	75%	\$0.67	28.40	34.53	AEG Research
Lodging	Cooling	Ductless Mini Split Heat Pump	tonCool	Existing	208.02	15	\$3,359.26	15%	75%	\$0.99	155.79	226.03	7th Power Plan
Lodging	Heating	Ductless Mini Split Heat Pump	tonCool	Existing	117.32	15	\$3,359.26	15%	75%	\$0.99	88.97	115.85	7th Power Plan
Lodging	Cooling	Thermostat - WiFi/Interactive	sqft	Existing	0.43	5	\$0.66	30%	40%	\$0.16	41.87	54.93	7th Power Plan
Lodging	Heating	Thermostat - WiFi/Interactive	sqft	Existing	0.25	5	\$0.66	30%	40%	\$0.16	17.42	21.35	7th Power Plan
Lodging	Ventilation	Thermostat - WiFi/Interactive	sqft	Existing	0.14	5	\$0.66	30%	40%	\$0.16	15.54	20.86	7th Power Plan
Lodging	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	Existing	44.43	10	\$8.35	25%	65%	\$0.02	1.99	4.74	Illinois TRM
Lodging	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	Existing	115.04	10	\$11.64	25%	65%	\$0.01	2.58	6.13	7th Power Plan
Lodging	Water Heating	Water Heater - High Efficiency Circulation Pump	WHUnits	Existing	51.69	15	\$36.75	15%	25%	\$0.05	2.63	4.84	Hawaii TRM
Lodging	Water Heating	Water Heater - Pipe Insulation	PipeFeet	Existing	1,232.58	15	\$14.88	16%	75%	\$0.00	34.78	74.91	AEG-BEST

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Lodging	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	Existing	228.40	4	\$144.04	25%	65%	\$0.10	10.02	23.30	7th Power Plan
Lodging	Water Heating	Water Heater - Thermostat Setback	WHUnits	Existing	51.72	2	\$5.00	15%	75%	\$0.03	16.97	38.99	Illinois TRM
Lodging	Water Heating	Water Heater - Solar System	PipeFeet	Existing	4,248.80	20	\$215.28	1%	30%	\$0.00	58.06	127.76	AEG-BEST
Lodging	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.19	15	\$0.35	3%	23%	\$0.14	58.41	75.78	7th Power Plan
Lodging	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.26	15	\$0.58	3%	23%	\$0.17	79.48	104.80	7th Power Plan
Lodging	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	Existing	370.41	15	\$54.41	1%	3%	\$0.01	2.11	3.65	7th Power Plan
Lodging	Interior Lighting	Interior Lighting - Timeclocks and Timers	occ sens	Existing	0.00	8	\$111.67	7%	15%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Lodging	Interior Lighting	Interior Lighting - Skylights	1000 sqft	Existing	0.00	15	\$1,006.35	15%	25%	\$0.00	0.00	0.00	AEG Research
Lodging	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	1000 sqft	Existing	46.33	16	\$1,807.69	5%	15%	\$2.93	5.06	9.23	7th Power Plan
Lodging	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	Existing	469.24	11	\$30.80	15%	50%	\$0.01	18.70	32.02	Illinois TRM
Lodging	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	ELtg Watts	Existing	3.94	8	\$0.63	15%	25%	\$0.02	49.80	99.56	7th Power Plan
Lodging	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	Existing	122.83	8	\$55.10	15%	25%	\$0.05	25.23	51.89	Pacific Gas and Electric Research
Lodging	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	Existing	150.93	7	\$3,400.00	15%	30%	\$2.62	46.15	96.33	AEG Research
Lodging	Refrigeration	Refrigeration - Anti-Sweat Heater	Fridge Feet	Existing	43.28	8	\$48.18	0%	0%	\$0.17	0.00	0.00	7th Power Plan
Lodging	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	Existing	61.12	4	\$10.44	0%	0%	\$0.04	0.00	0.00	Michigan Energy Measures Database
Lodging	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	Existing	537.16	16	\$165.20	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Lodging	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	Existing	66.53	15	\$335.85	0%	0%	\$0.52	0.00	0.00	7th Power Plan
Lodging	Refrigeration	Refrigeration - Strip Curtain	Walkin Door	Existing	60.09	2	\$10.41	0%	0%	\$0.08	0.00	0.00	7th Power Plan
Lodging	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBtuh	Existing	1.01	15	\$45.43	0%	0%	\$4.66	0.00	0.00	Annual Energy Outlook, 2015

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Lodging	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	Existing	20.99	15	\$313.82	0%	0%	\$1.55	0.00	0.00	Annual Energy Outlook, 2015
Lodging	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	Existing	351.06	10	\$506.05	0%	0%	\$0.19	0.00	0.00	Vermont TRM
Lodging	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	Existing	25.69	6	\$45.41	0%	0%	\$0.33	0.00	0.00	7th Power Plan
Lodging	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	Existing	2.07	8	\$3.72	0%	0%	\$0.27	0.00	0.00	7th Power Plan
Lodging	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	Existing	466.48	5	\$45.85	0%	0%	\$0.02	0.00	0.00	Illinois TRM
Lodging	Refrigeration	Grocery - ECMs for Display Cases	Fridge Case	Existing	106.45	16	\$165.20	0%	0%	\$0.16	0.00	0.00	7th Power Plan
Lodging	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	Existing	1,063.70	5	\$187.94	25%	75%	\$0.04	24.21	31.97	Illinois TRM
Lodging	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	Existing	1,816.21	18	\$8,526.67	25%	50%	\$0.42	20.44	26.86	7th Power Plan
Lodging	Office Equipment	Office Equipment - Smart Power Strips	Smart Strip	Existing	7.28	4	\$41.63	10%	50%	\$1.32	8.14	9.44	7th Power Plan
Lodging	Cooling	Lodging - Guest Room Controls	LodgUnit	Existing	150.58	15	\$260.00	15%	75%	\$0.26	85.08	115.43	AEG-BEST
Lodging	Heating	Lodging - Guest Room Controls	LodgUnit	Existing	-51.00	15	\$260.00	15%	75%	\$0.26	-28.84	-35.71	AEG-BEST
Lodging	Office Equipment	Data Center - Best Practice Measures	sqft	Existing	0.01	5	\$0.00	0%	0%	\$0.02	0.00	0.00	com-datacenters-7p_v5p.xlsx
Lodging	Cooling	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.00	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Lodging	Ventilation	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.00	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Lodging	Interior Lighting	Data Center - Commercially Available Measures	sqft	Existing	0.02	8	\$0.00	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Lodging	Office Equipment	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.00	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Lodging	Cooling	Data Center - Cutting Edge Measures	sqft	Existing	0.03	6	\$0.00	0%	0%	\$0.02	0.00	0.00	com-datacenters-7p_v5p.xlsx
Lodging	Office Equipment	Data Center - Cutting Edge Measures	sqft	Existing	0.00	6	\$0.00	0%	0%	\$0.02	0.00	0.00	com-datacenters-7p_v5p.xlsx
Lodging	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	Existing	2,717.20	18	\$4,092.80	0%	0%	\$0.13	0.00	0.00	7th Power Plan

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Lodging	Miscellaneous	Pool Pump - Timer	perBldg	Existing	370.05	10	\$85.22	15%	75%	\$0.03	3.94	4.67	Ontario Power TRM
Lodging	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	Existing	4,581.83	6	\$35.93	1%	3%	\$0.00	7.89	9.14	7th Power Plan
Lodging	Cooling	Advanced New Construction Designs	sqft	Existing	0.70	25	\$4.11	0%	0%	\$0.11	0.00	0.00	AEG Research
Lodging	Heating	Advanced New Construction Designs	sqft	Existing	0.41	25	\$4.11	0%	0%	\$0.11	0.00	0.00	AEG Research
Lodging	Ventilation	Advanced New Construction Designs	sqft	Existing	0.22	25	\$4.11	0%	0%	\$0.11	0.00	0.00	AEG Research
Lodging	Water Heating	Advanced New Construction Designs	sqft	Existing	0.56	25	\$4.11	0%	0%	\$0.11	0.00	0.00	AEG Research
Lodging	Interior Lighting	Advanced New Construction Designs	sqft	Existing	0.51	25	\$4.11	0%	0%	\$0.11	0.00	0.00	AEG Research
Lodging	Exterior Lighting	Advanced New Construction Designs	sqft	Existing	0.29	25	\$4.11	0%	0%	\$0.11	0.00	0.00	AEG Research
Lodging	Cooling	Strategic Energy Management	sqft	Existing	0.10	3	\$0.17	0%	0%	\$0.10	0.00	0.00	AEG Research
Lodging	Heating	Strategic Energy Management	sqft	Existing	0.06	3	\$0.17	0%	0%	\$0.10	0.00	0.00	AEG Research
Lodging	Ventilation	Strategic Energy Management	sqft	Existing	0.03	3	\$0.17	0%	0%	\$0.10	0.00	0.00	AEG Research
Lodging	Water Heating	Strategic Energy Management	sqft	Existing	0.09	3	\$0.17	0%	0%	\$0.10	0.00	0.00	AEG Research
Lodging	Interior Lighting	Strategic Energy Management	sqft	Existing	0.08	3	\$0.17	0%	0%	\$0.10	0.00	0.00	AEG Research
Lodging	Exterior Lighting	Strategic Energy Management	sqft	Existing	0.05	3	\$0.17	0%	0%	\$0.10	0.00	0.00	AEG Research
Lodging	Refrigeration	Strategic Energy Management	sqft	Existing	0.02	3	\$0.17	0%	0%	\$0.10	0.00	0.00	AEG Research
Lodging	Office Equipment	Strategic Energy Management	sqft	Existing	0.01	3	\$0.17	0%	0%	\$0.10	0.00	0.00	AEG Research
Lodging	Cooling	Commissioning	sqft	Existing	0.13	3	\$0.61	0%	0%	\$0.32	0.00	0.00	AEG Research
Lodging	Heating	Commissioning	sqft	Existing	0.08	3	\$0.61	0%	0%	\$0.32	0.00	0.00	AEG Research
Lodging	Ventilation	Commissioning	sqft	Existing	0.05	3	\$0.61	0%	0%	\$0.32	0.00	0.00	AEG Research
Lodging	Water Heating	Commissioning	sqft	Existing	0.04	3	\$0.61	0%	0%	\$0.32	0.00	0.00	AEG Research
Lodging	Interior Lighting	Commissioning	sqft	Existing	0.09	3	\$0.61	0%	0%	\$0.32	0.00	0.00	AEG Research

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Lodging	Exterior Lighting	Commissioning	sqft	Existing	0.05	3	\$0.61	0%	0%	\$0.32	0.00	0.00	AEG Research
Lodging	Refrigeration	Commissioning	sqft	Existing	0.05	3	\$0.61	0%	0%	\$0.32	0.00	0.00	AEG Research
Lodging	Cooling	Retrocommissioning	sqft	Existing	0.14	3	\$0.38	25%	90%	\$0.20	90.76	142.48	AEG Research
Lodging	Heating	Retrocommissioning	sqft	Existing	0.08	3	\$0.38	25%	90%	\$0.20	36.75	53.35	AEG Research
Lodging	Ventilation	Retrocommissioning	sqft	Existing	0.05	3	\$0.38	25%	90%	\$0.20	35.83	54.97	AEG Research
Lodging	Water Heating	Retrocommissioning	sqft	Existing	0.04	3	\$0.38	25%	90%	\$0.20	11.74	27.48	AEG Research
Lodging	Interior Lighting	Retrocommissioning	sqft	Existing	0.09	3	\$0.38	25%	90%	\$0.20	66.91	117.65	AEG Research
Lodging	Exterior Lighting	Retrocommissioning	sqft	Existing	0.05	3	\$0.38	25%	90%	\$0.20	32.66	70.12	AEG Research
Lodging	Refrigeration	Retrocommissioning	sqft	Existing	0.06	3	\$0.38	25%	90%	\$0.20	47.13	60.84	AEG Research
Lodging	Interior Lighting	Fruit Storage - Lighting Controls	sqft	Existing	0.07	10	\$0.09	0%	0%	\$0.13	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Lodging	Refrigeration	Fruit Storage Refrigeration Retrofit	sqft	Existing	0.18	10	\$1.09	0%	0%	\$0.79	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Lodging	Refrigeration	Fruit Storage Refrigeration Tuneup	sqft	Existing	0.04	3	\$0.23	0%	0%	\$1.63	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Lodging	Refrigeration	Fruit Storage Retrofit - CO2 Scrub	sqft	Existing	0.09	10	\$3.13	0%	0%	\$4.70	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Lodging	Refrigeration	Fruit Storage Retrofit - Membrane	sqft	Existing	0.02	10	\$0.68	0%	0%	\$5.10	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Lodging	Cooling	Insulation - Ceiling	sqft roof	New	0.00	45	\$1.28	15%	50%	\$2.67	0.00	0.00	Building Energy Simulation Tool
Lodging	Heating	Insulation - Ceiling	sqft roof	New	0.02	45	\$1.28	15%	50%	\$2.67	1.27	1.43	Building Energy Simulation Tool
Lodging	Ventilation	Insulation - Ceiling	sqft roof	New	0.01	45	\$1.28	15%	50%	\$2.67	1.09	1.30	Building Energy Simulation Tool
Lodging	Cooling	Insulation - Ducting	sqft duct	New	0.00	20	\$0.84	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Lodging	Heating	Insulation - Ducting	sqft duct	New	0.00	20	\$0.84	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Lodging	Ventilation	Insulation - Ducting	sqft duct	New	0.00	20	\$0.84	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Lodging	Cooling	Building Shell - Cool Roofs	sqft roof	New	0.08	20	\$0.78	45%	50%	\$1.56	0.95	1.09	Building Energy Simulation Tool

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Lodging	Heating	Building Shell - Cool Roofs	sqft roof	New	-0.03	20	\$0.78	45%	50%	\$1.56	-0.22	-0.25	Building Energy Simulation Tool
Lodging	Ventilation	Building Shell - Cool Roofs	sqft roof	New	-0.01	20	\$0.78	45%	50%	\$1.56	-0.19	-0.22	Building Energy Simulation Tool
Lodging	Cooling	Insulation - Wall Cavity	sqft wall	New	0.00	45	\$0.78	15%	50%	\$8.90	0.00	0.00	Building Energy Simulation Tool
Lodging	Heating	Insulation - Wall Cavity	sqft wall	New	0.00	45	\$0.78	15%	50%	\$8.90	0.09	0.10	Building Energy Simulation Tool
Lodging	Ventilation	Insulation - Wall Cavity	sqft wall	New	0.00	45	\$0.78	15%	50%	\$8.90	0.08	0.09	Building Energy Simulation Tool
Lodging	Cooling	HVAC - Duct Repair and Sealing	tonCool	New	0.00	18	\$0.57	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Lodging	Heating	HVAC - Duct Repair and Sealing	tonCool	New	0.00	18	\$0.57	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Lodging	Ventilation	HVAC - Duct Repair and Sealing	tonCool	New	0.00	18	\$0.57	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Lodging	Cooling	Windows - High Efficiency Glazing	sqft window	New	2.70	30	\$35.93	66%	66%	\$0.40	0.00	0.00	7th Power Plan
Lodging	Heating	Windows - High Efficiency Glazing	sqft window	New	3.39	30	\$35.93	66%	66%	\$0.40	0.00	0.00	7th Power Plan
Lodging	Ventilation	Windows - High Efficiency Glazing	sqft window	New	0.96	30	\$35.93	66%	66%	\$0.40	0.00	0.00	7th Power Plan
Lodging	Cooling	Chiller - Chilled Water Reset	ChillCtrl	New	4,601.20	10	\$884.85	15%	75%	\$0.02	0.51	0.67	AEG-BEST
Lodging	Cooling	Chiller - Chilled Water Variable-Flow System	HP cool	New	96.91	15	\$332.55	15%	75%	\$0.33	1.88	2.42	AEG-BEST
Lodging	Cooling	Chiller - Variable Speed Fans	HP fan	New	239.75	15	\$208.36	15%	75%	\$0.08	0.46	0.60	New Jersey TRM
Lodging	Cooling	Water-Cooled Chiller - Condenser Water Reset	ChillCtrl	New	8,057.95	10	\$884.85	15%	75%	\$0.01	0.70	0.93	AEG-BEST
Lodging	Cooling	HVAC - Economizer	HP cool	New	73.54	10	\$168.42	18%	75%	\$0.27	5.27	7.14	AEG-BEST
Lodging	Heating	Space Heating - Heat Recovery Ventilator	CFM	New	0.51	14	\$5.08	6%	75%	\$1.09	6.59	8.31	7th Power Plan
Lodging	Ventilation	Ventilation - ECM on VAV Boxes	sqft	New	0.16	18	\$0.25	15%	20%	\$0.13	2.01	2.37	7th Power Plan
Lodging	Ventilation	Ventilation - Variable Speed Control	sqft	New	0.04	15	\$181.39	19%	50%	\$373.57	2.19	2.96	AEG-BEST

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Lodging	Ventilation	Ventilation - Demand Controlled	sqft	New	0.01	15	\$0.25	15%	75%	\$3.27	0.67	0.91	7th Power Plan
Lodging	Cooling	Destratification Fans (HVLS)	Strat Fan	New	2,515.02	15	\$7,270.90	15%	30%	\$0.14	4.64	5.97	AEG Research
Lodging	Heating	Destratification Fans (HVLS)	Strat Fan	New	2,906.56	15	\$7,270.90	15%	30%	\$0.14	3.65	4.50	AEG Research
Lodging	Cooling	RTU - Maintenance	tonCool	New	47.77	3	\$35.00	15%	45%	\$0.21	0.25	0.38	AEG Research
Lodging	Cooling	RTU - Advanced Controls	sqft	New	0.14	15	\$0.07	15%	45%	\$0.05	1.63	1.94	7th Power Plan
Lodging	Cooling	RTU - Evaporative Precooler	tonCool	New	95.92	15	\$681.62	15%	75%	\$0.66	7.25	8.34	AEG Research
Lodging	Cooling	Ductless Mini Split Heat Pump	tonCool	New	172.51	15	\$3,359.26	15%	75%	\$1.13	22.38	28.54	7th Power Plan
Lodging	Heating	Ductless Mini Split Heat Pump	tonCool	New	112.59	15	\$3,359.26	15%	75%	\$1.13	13.82	16.95	7th Power Plan
Lodging	Cooling	Thermostat - WiFi/Interactive	sqft	New	0.39	5	\$0.66	30%	40%	\$0.17	1.06	1.51	7th Power Plan
Lodging	Heating	Thermostat - WiFi/Interactive	sqft	New	0.23	5	\$0.66	30%	40%	\$0.17	0.43	0.57	7th Power Plan
Lodging	Ventilation	Thermostat - WiFi/Interactive	sqft	New	0.12	5	\$0.66	30%	40%	\$0.17	0.37	0.54	7th Power Plan
Lodging	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	New	36.61	10	\$8.35	25%	65%	\$0.01	0.18	0.38	Illinois TRM
Lodging	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	New	94.69	10	\$11.64	25%	65%	\$0.01	0.24	0.49	7th Power Plan
Lodging	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	New	42.64	15	\$36.75	15%	25%	\$0.05	0.49	0.73	Hawaii TRM
Lodging	Water Heating	Water Heater - Pipe Insulation	PipeFeet	New	985.22	15	\$14.88	1%	75%	\$0.00	5.47	10.09	AEG-BEST
Lodging	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	New	188.31	4	\$144.04	25%	65%	\$0.10	0.38	0.89	7th Power Plan
Lodging	Water Heating	Water Heater - Thermostat Setback	WHunits	New	42.68	2	\$5.00	15%	75%	\$0.03	0.24	0.58	Illinois TRM
Lodging	Water Heating	Water Heater - Solar System	PipeFeet	New	3,425.93	20	\$215.28	1%	30%	\$0.00	7.67	14.01	AEG-BEST
Lodging	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.20	15	\$0.35	11%	23%	\$0.13	13.02	17.25	7th Power Plan
Lodging	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.27	15	\$0.58	11%	23%	\$0.15	17.97	23.91	7th Power Plan
Lodging	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	New	367.60	15	\$54.41	1%	3%	\$0.01	0.23	0.38	7th Power Plan

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Lodging	Interior Lighting	Interior Lighting - Timeclocks and Timers	occ sens	New	0.00	8	\$111.67	7%	15%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Lodging	Interior Lighting	Interior Lighting - Skylights	1000 sqft	New	0.00	15	\$1,006.35	18%	25%	\$0.00	0.00	0.00	AEG Research
Lodging	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	1000 sqft	New	40.93	16	\$1,807.69	5%	15%	\$2.96	0.65	1.01	7th Power Plan
Lodging	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	New	416.76	11	\$30.80	15%	50%	\$0.01	1.96	3.08	Illinois TRM
Lodging	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	ELtg Watts	New	3.11	8	\$0.63	15%	25%	\$0.02	3.78	7.63	7th Power Plan
Lodging	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	New	98.83	8	\$55.10	15%	25%	\$0.05	1.99	4.00	Pacific Gas and Electric Research
Lodging	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	New	121.32	7	\$3,400.00	15%	30%	\$2.60	3.16	6.64	AEG Research
Lodging	Refrigeration	Refrigeration - Anti-Sweat Heater	Fridge Feet	New	33.81	8	\$48.18	0%	0%	\$0.22	0.00	0.00	7th Power Plan
Lodging	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	New	51.33	4	\$10.44	0%	0%	\$0.05	0.00	0.00	Michigan Energy Measures Database
Lodging	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	New	469.57	16	\$165.20	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Lodging	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	New	62.76	15	\$335.85	0%	0%	\$0.56	0.00	0.00	7th Power Plan
Lodging	Refrigeration	Refrigeration - Strip Curtain	Walkin Door	New	56.22	2	\$10.41	0%	0%	\$0.09	0.00	0.00	7th Power Plan
Lodging	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	New	0.96	15	\$45.43	0%	0%	\$5.00	0.00	0.00	Annual Energy Outlook, 2015
Lodging	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	New	19.80	15	\$313.82	0%	0%	\$1.67	0.00	0.00	Annual Energy Outlook, 2015
Lodging	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	New	312.47	10	\$506.05	0%	0%	\$0.21	0.00	0.00	Vermont TRM
Lodging	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	New	23.78	6	\$45.41	0%	0%	\$0.36	0.00	0.00	7th Power Plan
Lodging	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	New	1.92	8	\$3.72	0%	0%	\$0.30	0.00	0.00	7th Power Plan
Lodging	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	New	433.71	5	\$45.85	0%	0%	\$0.02	0.00	0.00	Illinois TRM
Lodging	Refrigeration	Grocery - ECMs for Display Cases	Fridge Case	New	98.54	16	\$165.20	0%	0%	\$0.17	0.00	0.00	7th Power Plan

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Lodging	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	New	1,054.04	5	\$187.94	25%	75%	\$0.04	1.16	1.54	Illinois TRM
Lodging	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	New	1,462.78	18	\$8,526.67	25%	50%	\$0.48	3.76	4.49	7th Power Plan
Lodging	Office Equipment	Office Equipment - Smart Power Strips	Smart Strip	New	6.99	4	\$41.63	10%	50%	\$1.38	0.28	0.34	7th Power Plan
Lodging	Cooling	Lodging - Guest Room Controls	LodgUnit	New	121.56	15	\$260.00	15%	75%	\$0.32	11.51	14.43	AEG-BEST
Lodging	Heating	Lodging - Guest Room Controls	LodgUnit	New	-47.47	15	\$260.00	15%	75%	\$0.32	-4.24	-5.14	AEG-BEST
Lodging	Office Equipment	Data Center - Best Practice Measures	sqft	New	0.01	5	\$0.00	0%	0%	\$0.02	0.00	0.00	com-datacenters-7p_v5p.xlsx
Lodging	Cooling	Data Center - Commercially Available Measures	sqft	New	0.01	8	\$0.00	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Lodging	Ventilation	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Lodging	Interior Lighting	Data Center - Commercially Available Measures	sqft	New	0.02	8	\$0.00	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Lodging	Office Equipment	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Lodging	Cooling	Data Center - Cutting Edge Measures	sqft	New	0.03	6	\$0.00	0%	0%	\$0.02	0.00	0.00	com-datacenters-7p_v5p.xlsx
Lodging	Office Equipment	Data Center - Cutting Edge Measures	sqft	New	0.00	6	\$0.00	0%	0%	\$0.02	0.00	0.00	com-datacenters-7p_v5p.xlsx
Lodging	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	New	2,216.97	18	\$4,092.80	0%	0%	\$0.15	0.00	0.00	7th Power Plan
Lodging	Miscellaneous	Pool Pump - Timer	perBldg	New	369.35	10	\$85.22	15%	75%	\$0.03	0.35	0.43	Ontario Power TRM
Lodging	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	New	4,568.07	6	\$35.93	1%	3%	\$0.00	0.34	0.41	7th Power Plan
Lodging	Cooling	Advanced New Construction Designs	sqft	New	0.64	25	\$4.11	10%	25%	\$0.11	24.72	28.17	AEG Research
Lodging	Heating	Advanced New Construction Designs	sqft	New	0.38	25	\$4.11	10%	25%	\$0.11	10.02	11.28	AEG Research
Lodging	Ventilation	Advanced New Construction Designs	sqft	New	0.19	25	\$4.11	10%	25%	\$0.11	8.60	10.09	AEG Research
Lodging	Water Heating	Advanced New Construction Designs	sqft	New	0.47	25	\$4.11	10%	25%	\$0.11	9.61	13.20	AEG Research

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Lodging	Interior Lighting	Advanced New Construction Designs	sqft	New	0.51	25	\$4.11	10%	25%	\$0.11	21.09	26.17	AEG Research
Lodging	Exterior Lighting	Advanced New Construction Designs	sqft	New	0.24	25	\$4.11	10%	25%	\$0.11	9.83	13.35	AEG Research
Lodging	Cooling	Strategic Energy Management	sqft	New	0.09	3	\$0.17	0%	0%	\$0.10	0.00	0.00	AEG Research
Lodging	Heating	Strategic Energy Management	sqft	New	0.05	3	\$0.17	0%	0%	\$0.10	0.00	0.00	AEG Research
Lodging	Ventilation	Strategic Energy Management	sqft	New	0.03	3	\$0.17	0%	0%	\$0.10	0.00	0.00	AEG Research
Lodging	Water Heating	Strategic Energy Management	sqft	New	0.07	3	\$0.17	0%	0%	\$0.10	0.00	0.00	AEG Research
Lodging	Interior Lighting	Strategic Energy Management	sqft	New	0.08	3	\$0.17	0%	0%	\$0.10	0.00	0.00	AEG Research
Lodging	Exterior Lighting	Strategic Energy Management	sqft	New	0.04	3	\$0.17	0%	0%	\$0.10	0.00	0.00	AEG Research
Lodging	Refrigeration	Strategic Energy Management	sqft	New	0.02	3	\$0.17	0%	0%	\$0.10	0.00	0.00	AEG Research
Lodging	Office Equipment	Strategic Energy Management	sqft	New	0.01	3	\$0.17	0%	0%	\$0.10	0.00	0.00	AEG Research
Lodging	Cooling	Commissioning	sqft	New	0.13	3	\$0.61	25%	90%	\$0.33	2.14	3.24	AEG Research
Lodging	Heating	Commissioning	sqft	New	0.08	3	\$0.61	25%	90%	\$0.33	0.85	1.21	AEG Research
Lodging	Ventilation	Commissioning	sqft	New	0.04	3	\$0.61	25%	90%	\$0.33	0.76	1.15	AEG Research
Lodging	Water Heating	Commissioning	sqft	New	0.03	3	\$0.61	25%	90%	\$0.33	0.29	0.69	AEG Research
Lodging	Interior Lighting	Commissioning	sqft	New	0.09	3	\$0.61	25%	90%	\$0.33	1.58	3.38	AEG Research
Lodging	Exterior Lighting	Commissioning	sqft	New	0.04	3	\$0.61	25%	90%	\$0.33	0.73	1.76	AEG Research
Lodging	Refrigeration	Commissioning	sqft	New	0.05	3	\$0.61	25%	90%	\$0.33	1.03	1.32	AEG Research
Lodging	Cooling	Retrocommissioning	sqft	New	0.13	3	\$0.39	0%	0%	\$0.21	0.00	0.00	AEG Research
Lodging	Heating	Retrocommissioning	sqft	New	0.08	3	\$0.39	0%	0%	\$0.21	0.00	0.00	AEG Research
Lodging	Ventilation	Retrocommissioning	sqft	New	0.04	3	\$0.39	0%	0%	\$0.21	0.00	0.00	AEG Research
Lodging	Water Heating	Retrocommissioning	sqft	New	0.03	3	\$0.39	0%	0%	\$0.21	0.00	0.00	AEG Research
Lodging	Interior Lighting	Retrocommissioning	sqft	New	0.09	3	\$0.39	0%	0%	\$0.21	0.00	0.00	AEG Research

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Lodging	Exterior Lighting	Retrocommissioning	sqft	New	0.04	3	\$0.39	0%	0%	\$0.21	0.00	0.00	AEG Research
Lodging	Refrigeration	Retrocommissioning	sqft	New	0.05	3	\$0.39	0%	0%	\$0.21	0.00	0.00	AEG Research
Lodging	Interior Lighting	Fruit Storage - Lighting Controls	sqft	New	0.06	10	\$0.09	0%	0%	\$0.12	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Lodging	Refrigeration	Fruit Storage Refrigeration Retrofit	sqft	New	0.16	10	\$1.09	0%	0%	\$0.87	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Lodging	Refrigeration	Fruit Storage Refrigeration Tuneup	sqft	New	0.04	3	\$0.23	0%	0%	\$1.79	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Lodging	Refrigeration	Fruit Storage Retrofit - CO2 Scrub	sqft	New	0.08	10	\$3.13	0%	0%	\$5.17	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Lodging	Refrigeration	Fruit Storage Retrofit - Membrane	sqft	New	0.02	10	\$0.68	0%	0%	\$5.61	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse	Cooling	Insulation - Ceiling	sqft roof	Existing	0.15	45	\$1.28	15%	35%	\$0.22	6.31	7.91	Building Energy Simulation Tool
Warehouse	Heating	Insulation - Ceiling	sqft roof	Existing	0.25	45	\$1.28	15%	35%	\$0.22	11.22	14.47	Building Energy Simulation Tool
Warehouse	Ventilation	Insulation - Ceiling	sqft roof	Existing	0.01	45	\$1.28	15%	35%	\$0.22	3.25	4.67	Building Energy Simulation Tool
Warehouse	Cooling	Insulation - Ducting	sqft duct	Existing	0.05	20	\$0.84	15%	35%	\$1.04	2.13	2.88	Building Energy Simulation Tool
Warehouse	Heating	Insulation - Ducting	sqft duct	Existing	0.01	20	\$0.84	15%	35%	\$1.04	0.45	0.60	Building Energy Simulation Tool
Warehouse	Ventilation	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.84	15%	35%	\$1.04	0.13	0.19	Building Energy Simulation Tool
Warehouse	Cooling	Building Shell - Cool Roofs	sqft roof	Existing	0.21	20	\$0.78	45%	50%	\$18.61	2.27	2.76	Building Energy Simulation Tool
Warehouse	Heating	Building Shell - Cool Roofs	sqft roof	Existing	-0.20	20	\$0.78	45%	50%	\$18.61	-2.30	-2.73	Building Energy Simulation Tool
Warehouse	Ventilation	Building Shell - Cool Roofs	sqft roof	Existing	-0.01	20	\$0.78	45%	50%	\$18.61	-0.55	-0.78	Building Energy Simulation Tool
Warehouse	Cooling	Insulation - Wall Cavity	sqft wall	Existing	0.01	45	\$0.78	15%	35%	\$0.03	0.10	0.13	Building Energy Simulation Tool
Warehouse	Heating	Insulation - Wall Cavity	sqft wall	Existing	2.06	45	\$0.78	15%	35%	\$0.03	18.46	21.86	Building Energy Simulation Tool
Warehouse	Ventilation	Insulation - Wall Cavity	sqft wall	Existing	0.10	45	\$0.78	15%	35%	\$0.03	4.43	6.28	Building Energy Simulation Tool

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Warehouse	Cooling	HVAC - Duct Repair and Sealing	tonCool	Existing	9.71	18	\$0.57	15%	25%	\$0.00	0.43	0.52	Building Energy Simulation Tool
Warehouse	Heating	HVAC - Duct Repair and Sealing	tonCool	Existing	13.80	18	\$0.57	15%	25%	\$0.00	0.65	0.77	Building Energy Simulation Tool
Warehouse	Ventilation	HVAC - Duct Repair and Sealing	tonCool	Existing	0.69	18	\$0.57	15%	25%	\$0.00	0.16	0.22	Building Energy Simulation Tool
Warehouse	Cooling	Windows - High Efficiency Glazing	sqft window	Existing	3.83	30	\$35.93	48%	48%	\$0.15	0.00	0.00	7th Power Plan
Warehouse	Heating	Windows - High Efficiency Glazing	sqft window	Existing	13.77	30	\$35.93	48%	48%	\$0.15	0.00	0.00	7th Power Plan
Warehouse	Ventilation	Windows - High Efficiency Glazing	sqft window	Existing	0.46	30	\$35.93	48%	48%	\$0.15	0.00	0.00	7th Power Plan
Warehouse	Cooling	Chiller - Chilled Water Reset	ChillCtrl	Existing	0.00	10	\$884.85	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Warehouse	Cooling	Chiller - Chilled Water Variable-Flow System	HP cool	Existing	0.00	15	\$332.55	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Warehouse	Cooling	Chiller - Variable Speed Fans	HP fan	Existing	0.00	15	\$208.36	15%	75%	\$0.00	0.00	0.00	New Jersey TRM
Warehouse	Cooling	Water-Cooled Chiller - Condenser Water Reset	ChillCtrl	Existing	0.00	10	\$884.85	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Warehouse	Cooling	HVAC - Economizer	HP cool	Existing	98.73	10	\$168.42	18%	75%	\$0.21	18.59	25.93	AEG-BEST
Warehouse	Heating	Space Heating - Heat Recovery Ventilator	CFM	Existing	4.91	14	\$5.08	3%	75%	\$0.11	53.87	69.49	7th Power Plan
Warehouse	Ventilation	Ventilation - ECM on VAV Boxes	sqft	Existing	0.04	18	\$0.25	15%	20%	\$0.44	2.49	3.61	7th Power Plan
Warehouse	Ventilation	Ventilation - Variable Speed Control	sqft	Existing	0.00	15	\$181.39	13%	50%	\$3,356.27	1.85	3.28	AEG-BEST
Warehouse	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.25	15%	75%	\$10.68	1.30	2.30	7th Power Plan
Warehouse	Cooling	Destratification Fans (HVLS)	Strat Fan	Existing	2,246.52	15	\$7,270.90	15%	75%	\$0.07	27.54	36.64	AEG Research
Warehouse	Heating	Destratification Fans (HVLS)	Strat Fan	Existing	7,838.77	15	\$7,270.90	15%	75%	\$0.07	101.14	135.28	AEG Research
Warehouse	Cooling	RTU - Maintenance	tonCool	Existing	45.77	3	\$35.00	15%	45%	\$0.22	5.00	7.67	AEG Research
Warehouse	Cooling	RTU - Advanced Controls	sqft	Existing	0.05	15	\$0.07	15%	45%	\$0.13	2.81	3.41	7th Power Plan
Warehouse	Cooling	RTU - Evaporative Precooler	tonCool	Existing	93.57	15	\$681.62	15%	75%	\$0.69	18.60	22.60	AEG Research
Warehouse	Cooling	Ductless Mini Split Heat Pump	tonCool	Existing	204.12	15	\$3,359.26	15%	25%	\$0.53	0.46	0.67	7th Power Plan

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Warehouse	Heating	Ductless Mini Split Heat Pump	tonCool	Existing	374.32	15	\$3,359.26	15%	25%	\$0.53	12.80	17.73	7th Power Plan
Warehouse	Cooling	Thermostat - WiFi/Interactive	sqft	Existing	0.32	5	\$0.66	30%	40%	\$0.13	6.59	8.80	7th Power Plan
Warehouse	Heating	Thermostat - WiFi/Interactive	sqft	Existing	0.58	5	\$0.66	30%	40%	\$0.13	12.84	16.84	7th Power Plan
Warehouse	Ventilation	Thermostat - WiFi/Interactive	sqft	Existing	0.03	5	\$0.66	30%	40%	\$0.13	3.66	5.41	7th Power Plan
Warehouse	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	Existing	7.59	10	\$8.35	25%	65%	\$0.09	0.14	0.35	Illinois TRM
Warehouse	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	Existing	19.65	10	\$11.64	25%	65%	\$0.05	0.18	0.45	7th Power Plan
Warehouse	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	Existing	51.19	15	\$36.75	15%	75%	\$0.05	1.14	2.12	Hawaii TRM
Warehouse	Water Heating	Water Heater - Pipe Insulation	PipeFeet	Existing	212.35	15	\$14.88	16%	75%	\$0.00	2.53	5.50	AEG-BEST
Warehouse	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	Existing	39.06	4	\$144.04	25%	65%	\$0.57	0.72	1.70	7th Power Plan
Warehouse	Water Heating	Water Heater - Thermostat Setback	WHunits	Existing	50.68	2	\$5.00	15%	75%	\$0.03	1.21	2.85	Illinois TRM
Warehouse	Water Heating	Water Heater - Solar System	PipeFeet	Existing	731.97	20	\$215.28	1%	30%	\$0.02	4.22	9.38	AEG-BEST
Warehouse	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.19	15	\$0.35	3%	23%	\$0.15	52.62	74.35	7th Power Plan
Warehouse	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.26	15	\$0.58	3%	23%	\$0.18	70.89	102.45	7th Power Plan
Warehouse	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	Existing	536.74	15	\$54.41	1%	3%	\$0.01	1.47	2.60	7th Power Plan
Warehouse	Interior Lighting	Interior Lighting - Timeclocks and Timers	occ sens	Existing	0.00	8	\$111.67	7%	15%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Warehouse	Interior Lighting	Interior Lighting - Skylights	1000 sqft	Existing	0.00	15	\$1,006.35	15%	30%	\$0.00	0.00	0.00	AEG Research
Warehouse	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	1000 sqft	Existing	30.25	16	\$1,807.69	5%	15%	\$4.60	3.23	6.02	7th Power Plan
Warehouse	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	Existing	309.11	11	\$30.80	15%	50%	\$0.01	12.22	20.96	Illinois TRM
Warehouse	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	ELtg Watts	Existing	0.78	8	\$0.63	15%	25%	\$0.09	13.83	26.84	7th Power Plan

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Warehouse	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	Existing	64.12	8	\$55.10	15%	25%	\$0.09	7.00	13.99	Pacific Gas and Electric Research
Warehouse	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	Existing	76.72	7	\$3,400.00	15%	30%	\$5.12	12.31	25.57	AEG Research
Warehouse	Refrigeration	Refrigeration - Anti-Sweat Heater	Fridge Feet	Existing	116.45	8	\$48.18	0%	0%	\$0.06	0.00	0.00	7th Power Plan
Warehouse	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	Existing	221.74	4	\$10.44	0%	0%	\$0.01	0.00	0.00	Michigan Energy Measures Database
Warehouse	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	Existing	1,894.39	16	\$165.20	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Warehouse	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	Existing	167.23	15	\$335.85	0%	0%	\$0.21	0.00	0.00	7th Power Plan
Warehouse	Refrigeration	Refrigeration - Strip Curtain	Walkin Door	Existing	158.28	2	\$10.41	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Warehouse	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	Existing	2.54	15	\$45.43	0%	0%	\$1.88	0.00	0.00	Annual Energy Outlook, 2015
Warehouse	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	Existing	52.75	15	\$313.82	0%	0%	\$0.63	0.00	0.00	Annual Energy Outlook, 2015
Warehouse	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	Existing	1,272.41	10	\$506.05	0%	0%	\$0.05	0.00	0.00	Vermont TRM
Warehouse	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	Existing	69.05	6	\$45.41	0%	0%	\$0.12	0.00	0.00	7th Power Plan
Warehouse	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	Existing	5.56	8	\$3.72	0%	0%	\$0.10	0.00	0.00	7th Power Plan
Warehouse	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	Existing	1,236.60	5	\$45.85	0%	0%	\$0.01	0.00	0.00	Illinois TRM
Warehouse	Refrigeration	Grocery - ECMs for Display Cases	Fridge Case	Existing	289.51	16	\$165.20	0%	0%	\$0.06	0.00	0.00	7th Power Plan
Warehouse	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	Existing	1,045.50	5	\$187.94	25%	75%	\$0.04	3.54	4.65	Illinois TRM
Warehouse	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	Existing	426.64	18	\$8,526.67	25%	50%	\$1.56	4.75	6.92	7th Power Plan
Warehouse	Office Equipment	Office Equipment - Smart Power Strips	Smart Strip	Existing	10.80	4	\$41.63	10%	50%	\$0.89	12.54	14.08	7th Power Plan
Warehouse	Cooling	Lodging - Guest Room Controls	LodgUnit	Existing	93.60	15	\$260.00	0%	0%	\$10.00	0.00	0.00	AEG-BEST
Warehouse	Heating	Lodging - Guest Room Controls	LodgUnit	Existing	-104.07	15	\$260.00	0%	0%	\$10.00	0.00	0.00	AEG-BEST

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Warehouse	Office Equipment	Data Center - Best Practice Measures	sqft	Existing	0.02	5	\$0.00	0%	0%	\$0.02	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse	Cooling	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.00	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse	Ventilation	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.00	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse	Interior Lighting	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.00	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse	Office Equipment	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.00	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse	Cooling	Data Center - Cutting Edge Measures	sqft	Existing	0.02	6	\$0.00	0%	0%	\$0.02	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse	Office Equipment	Data Center - Cutting Edge Measures	sqft	Existing	0.00	6	\$0.00	0%	0%	\$0.02	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	Existing	1,283.99	18	\$4,092.80	0%	0%	\$0.25	0.00	0.00	7th Power Plan
Warehouse	Miscellaneous	Pool Pump - Timer	perBldg	Existing	0.00	10	\$85.22	15%	75%	\$0.00	0.00	0.00	Ontario Power TRM
Warehouse	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	Existing	5,469.95	6	\$35.93	1%	3%	\$0.00	0.00	5.44	7th Power Plan
Warehouse	Cooling	Advanced New Construction Designs	sqft	Existing	0.52	25	\$4.11	0%	0%	\$0.15	0.00	0.00	AEG Research
Warehouse	Heating	Advanced New Construction Designs	sqft	Existing	0.93	25	\$4.11	0%	0%	\$0.15	0.00	0.00	AEG Research
Warehouse	Ventilation	Advanced New Construction Designs	sqft	Existing	0.05	25	\$4.11	0%	0%	\$0.15	0.00	0.00	AEG Research
Warehouse	Water Heating	Advanced New Construction Designs	sqft	Existing	0.05	25	\$4.11	0%	0%	\$0.15	0.00	0.00	AEG Research
Warehouse	Interior Lighting	Advanced New Construction Designs	sqft	Existing	0.37	25	\$4.11	0%	0%	\$0.15	0.00	0.00	AEG Research
Warehouse	Exterior Lighting	Advanced New Construction Designs	sqft	Existing	0.08	25	\$4.11	0%	0%	\$0.15	0.00	0.00	AEG Research
Warehouse	Cooling	Strategic Energy Management	sqft	Existing	0.08	3	\$0.11	3%	11%	\$0.10	1.36	2.10	AEG Research
Warehouse	Heating	Strategic Energy Management	sqft	Existing	0.14	3	\$0.11	3%	11%	\$0.10	2.67	4.01	AEG Research
Warehouse	Ventilation	Strategic Energy Management	sqft	Existing	0.01	3	\$0.11	3%	11%	\$0.10	0.76	1.31	AEG Research

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Warehouse	Water Heating	Strategic Energy Management	sqft	Existing	0.01	3	\$0.11	3%	11%	\$0.10	0.22	0.54	AEG Research
Warehouse	Interior Lighting	Strategic Energy Management	sqft	Existing	0.06	3	\$0.11	3%	11%	\$0.10	4.80	9.02	AEG Research
Warehouse	Exterior Lighting	Strategic Energy Management	sqft	Existing	0.01	3	\$0.11	3%	11%	\$0.10	1.01	2.06	AEG Research
Warehouse	Refrigeration	Strategic Energy Management	sqft	Existing	0.01	3	\$0.11	3%	11%	\$0.10	0.99	0.91	AEG Research
Warehouse	Office Equipment	Strategic Energy Management	sqft	Existing	0.01	3	\$0.11	3%	11%	\$0.10	1.37	1.56	AEG Research
Warehouse	Cooling	Commissioning	sqft	Existing	0.10	3	\$0.51	0%	0%	\$0.34	0.00	0.00	AEG Research
Warehouse	Heating	Commissioning	sqft	Existing	0.19	3	\$0.51	0%	0%	\$0.34	0.00	0.00	AEG Research
Warehouse	Ventilation	Commissioning	sqft	Existing	0.01	3	\$0.51	0%	0%	\$0.34	0.00	0.00	AEG Research
Warehouse	Water Heating	Commissioning	sqft	Existing	0.00	3	\$0.51	0%	0%	\$0.34	0.00	0.00	AEG Research
Warehouse	Interior Lighting	Commissioning	sqft	Existing	0.06	3	\$0.51	0%	0%	\$0.34	0.00	0.00	AEG Research
Warehouse	Exterior Lighting	Commissioning	sqft	Existing	0.01	3	\$0.51	0%	0%	\$0.34	0.00	0.00	AEG Research
Warehouse	Refrigeration	Commissioning	sqft	Existing	0.02	3	\$0.51	0%	0%	\$0.34	0.00	0.00	AEG Research
Warehouse	Cooling	Retrocommissioning	sqft	Existing	0.11	3	\$0.32	9%	71%	\$0.21	14.56	22.48	AEG Research
Warehouse	Heating	Retrocommissioning	sqft	Existing	0.19	3	\$0.32	9%	71%	\$0.21	28.55	42.92	AEG Research
Warehouse	Ventilation	Retrocommissioning	sqft	Existing	0.01	3	\$0.32	9%	71%	\$0.21	8.14	14.01	AEG Research
Warehouse	Water Heating	Retrocommissioning	sqft	Existing	0.00	3	\$0.32	9%	71%	\$0.21	0.80	1.91	AEG Research
Warehouse	Interior Lighting	Retrocommissioning	sqft	Existing	0.06	3	\$0.32	9%	71%	\$0.21	42.76	80.50	AEG Research
Warehouse	Exterior Lighting	Retrocommissioning	sqft	Existing	0.01	3	\$0.32	9%	71%	\$0.21	9.02	18.35	AEG Research
Warehouse	Refrigeration	Retrocommissioning	sqft	Existing	0.02	3	\$0.32	9%	71%	\$0.21	17.56	16.23	AEG Research
Warehouse	Interior Lighting	Fruit Storage - Lighting Controls	sqft	Existing	0.05	10	\$0.09	0%	0%	\$0.19	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse	Refrigeration	Fruit Storage Refrigeration Retrofit	sqft	Existing	0.06	10	\$1.09	0%	0%	\$2.56	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse	Refrigeration	Fruit Storage Refrigeration Tuneup	sqft	Existing	0.01	3	\$0.23	0%	0%	\$5.25	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx

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Warehouse	Refrigeration	Fruit Storage Retrofit - CO2 Scrub	sqft	Existing	0.03	10	\$3.13	0%	0%	\$15.17	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse	Refrigeration	Fruit Storage Retrofit - Membrane	sqft	Existing	0.01	10	\$0.68	0%	0%	\$16.46	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse	Cooling	Insulation - Ceiling	sqft roof	New	0.00	45	\$1.28	15%	50%	\$0.35	0.00	0.00	Building Energy Simulation Tool
Warehouse	Heating	Insulation - Ceiling	sqft roof	New	0.26	45	\$1.28	15%	50%	\$0.35	5.33	5.95	Building Energy Simulation Tool
Warehouse	Ventilation	Insulation - Ceiling	sqft roof	New	0.01	45	\$1.28	15%	50%	\$0.35	1.21	1.52	Building Energy Simulation Tool
Warehouse	Cooling	Insulation - Ducting	sqft duct	New	0.08	20	\$0.84	15%	25%	\$0.71	0.47	0.53	Building Energy Simulation Tool
Warehouse	Heating	Insulation - Ducting	sqft duct	New	0.01	20	\$0.84	15%	25%	\$0.71	0.08	0.10	Building Energy Simulation Tool
Warehouse	Ventilation	Insulation - Ducting	sqft duct	New	0.00	20	\$0.84	15%	25%	\$0.71	0.02	0.02	Building Energy Simulation Tool
Warehouse	Cooling	Building Shell - Cool Roofs	sqft roof	New	0.19	20	\$0.78	45%	50%	\$12.81	0.53	0.60	Building Energy Simulation Tool
Warehouse	Heating	Building Shell - Cool Roofs	sqft roof	New	-0.18	20	\$0.78	45%	50%	\$12.81	-0.54	-0.60	Building Energy Simulation Tool
Warehouse	Ventilation	Building Shell - Cool Roofs	sqft roof	New	-0.01	20	\$0.78	45%	50%	\$12.81	-0.12	-0.15	Building Energy Simulation Tool
Warehouse	Cooling	Insulation - Wall Cavity	sqft wall	New	-0.01	45	\$0.78	15%	50%	\$0.22	-0.04	-0.04	Building Energy Simulation Tool
Warehouse	Heating	Insulation - Wall Cavity	sqft wall	New	0.28	45	\$0.78	15%	50%	\$0.22	1.08	1.21	Building Energy Simulation Tool
Warehouse	Ventilation	Insulation - Wall Cavity	sqft wall	New	0.01	45	\$0.78	15%	50%	\$0.22	0.23	0.29	Building Energy Simulation Tool
Warehouse	Cooling	HVAC - Duct Repair and Sealing	tonCool	New	16.86	18	\$0.57	15%	25%	\$0.00	0.18	0.20	Building Energy Simulation Tool
Warehouse	Heating	HVAC - Duct Repair and Sealing	tonCool	New	10.91	18	\$0.57	15%	25%	\$0.00	0.12	0.14	Building Energy Simulation Tool
Warehouse	Ventilation	HVAC - Duct Repair and Sealing	tonCool	New	0.39	18	\$0.57	15%	25%	\$0.00	0.03	0.03	Building Energy Simulation Tool
Warehouse	Cooling	Windows - High Efficiency Glazing	sqft window	New	3.68	30	\$35.93	66%	66%	\$0.16	0.00	0.00	7th Power Plan
Warehouse	Heating	Windows - High Efficiency Glazing	sqft window	New	14.03	30	\$35.93	66%	66%	\$0.16	0.00	0.00	7th Power Plan

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Warehouse	Ventilation	Windows - High Efficiency Glazing	sqft window	New	0.31	30	\$35.93	66%	66%	\$0.16	0.00	0.00	7th Power Plan
Warehouse	Cooling	Chiller - Chilled Water Reset	ChillCtrl	New	0.00	10	\$884.85	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Warehouse	Cooling	Chiller - Chilled Water Variable-Flow System	HP cool	New	0.00	15	\$332.55	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Warehouse	Cooling	Chiller - Variable Speed Fans	HP fan	New	0.00	15	\$208.36	15%	75%	\$0.00	0.00	0.00	New Jersey TRM
Warehouse	Cooling	Water-Cooled Chiller - Condenser Water Reset	ChillCtrl	New	0.00	10	\$884.85	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Warehouse	Cooling	HVAC - Economizer	HP cool	New	97.16	10	\$168.42	18%	75%	\$0.22	2.17	2.79	AEG-BEST
Warehouse	Heating	Space Heating - Heat Recovery Ventilator	CFM	New	4.63	14	\$5.08	6%	75%	\$0.12	6.81	8.44	7th Power Plan
Warehouse	Ventilation	Ventilation - ECM on VAV Boxes	sqft	New	0.03	18	\$0.25	15%	20%	\$0.51	0.50	0.64	7th Power Plan
Warehouse	Ventilation	Ventilation - Variable Speed Control	sqft	New	0.00	15	\$181.39	19%	50%	\$3,923.17	0.20	0.30	AEG-BEST
Warehouse	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.25	15%	75%	\$12.48	0.17	0.26	7th Power Plan
Warehouse	Cooling	Destratification Fans (HVLS)	Strat Fan	New	2,085.55	15	\$7,270.90	15%	75%	\$0.08	3.73	4.69	AEG Research
Warehouse	Heating	Destratification Fans (HVLS)	Strat Fan	New	7,589.82	15	\$7,270.90	15%	75%	\$0.08	14.36	17.71	AEG Research
Warehouse	Cooling	RTU - Maintenance	tonCool	New	45.94	3	\$35.00	15%	45%	\$0.23	0.19	0.27	AEG Research
Warehouse	Cooling	RTU - Advanced Controls	sqft	New	0.05	15	\$0.07	15%	45%	\$0.14	0.62	0.73	7th Power Plan
Warehouse	Cooling	RTU - Evaporative Precooler	tonCool	New	93.34	15	\$681.62	15%	75%	\$0.72	5.41	6.12	AEG Research
Warehouse	Cooling	Ductless Mini Split Heat Pump	tonCool	New	178.71	15	\$3,359.26	15%	25%	\$0.59	0.08	0.10	7th Power Plan
Warehouse	Heating	Ductless Mini Split Heat Pump	tonCool	New	379.54	15	\$3,359.26	15%	25%	\$0.59	2.46	2.99	7th Power Plan
Warehouse	Cooling	Thermostat - WiFi/Interactive	sqft	New	0.32	5	\$0.66	30%	40%	\$0.14	0.21	0.29	7th Power Plan
Warehouse	Heating	Thermostat - WiFi/Interactive	sqft	New	0.59	5	\$0.66	30%	40%	\$0.14	0.41	0.56	7th Power Plan
Warehouse	Ventilation	Thermostat - WiFi/Interactive	sqft	New	0.02	5	\$0.66	30%	40%	\$0.14	0.09	0.16	7th Power Plan
Warehouse	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	New	6.37	10	\$8.35	25%	65%	\$0.09	0.02	0.03	Illinois TRM

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Warehouse	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	New	16.48	10	\$11.64	25%	65%	\$0.05	0.02	0.04	7th Power Plan
Warehouse	Water Heating	Water Heater - High Efficiency Circulation Pump	WHUnits	New	42.79	15	\$36.75	15%	75%	\$0.05	0.24	0.37	Hawaii TRM
Warehouse	Water Heating	Water Heater - Pipe Insulation	PipeFeet	New	172.30	15	\$14.88	1%	75%	\$0.00	0.46	0.84	AEG-BEST
Warehouse	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	New	33.04	4	\$144.04	25%	65%	\$0.55	0.03	0.07	7th Power Plan
Warehouse	Water Heating	Water Heater - Thermostat Setback	WHUnits	New	42.58	2	\$5.00	15%	75%	\$0.03	0.02	0.05	Illinois TRM
Warehouse	Water Heating	Water Heater - Solar System	PipeFeet	New	599.19	20	\$215.28	1%	30%	\$0.02	0.64	1.17	AEG-BEST
Warehouse	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.17	15	\$0.35	11%	23%	\$0.15	12.33	16.50	7th Power Plan
Warehouse	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.23	15	\$0.58	11%	23%	\$0.18	16.94	22.80	7th Power Plan
Warehouse	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	New	468.11	15	\$54.41	1%	3%	\$0.01	0.17	0.28	7th Power Plan
Warehouse	Interior Lighting	Interior Lighting - Timeclocks and Timers	occ sens	New	0.00	8	\$111.67	7%	15%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Warehouse	Interior Lighting	Interior Lighting - Skylights	1000 sqft	New	0.00	15	\$1,006.35	18%	33%	\$0.00	0.00	0.00	AEG Research
Warehouse	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	1000 sqft	New	26.34	16	\$1,807.69	5%	15%	\$4.60	0.48	0.75	7th Power Plan
Warehouse	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	New	268.15	11	\$30.80	15%	50%	\$0.01	1.44	2.28	Illinois TRM
Warehouse	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	ELtg Watts	New	0.65	8	\$0.63	15%	25%	\$0.09	1.23	2.34	7th Power Plan
Warehouse	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	New	54.29	8	\$55.10	15%	25%	\$0.09	0.65	1.23	Pacific Gas and Electric Research
Warehouse	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	New	67.06	7	\$3,400.00	15%	30%	\$5.08	1.04	2.03	AEG Research
Warehouse	Refrigeration	Refrigeration - Anti-Sweat Heater	Fridge Feet	New	90.07	8	\$48.18	0%	0%	\$0.08	0.00	0.00	7th Power Plan
Warehouse	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	New	199.95	4	\$10.44	0%	0%	\$0.01	0.00	0.00	Michigan Energy Measures Database
Warehouse	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	New	1,749.49	16	\$165.20	0%	0%	\$0.01	0.00	0.00	7th Power Plan

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Warehouse	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	New	159.53	15	\$335.85	0%	0%	\$0.22	0.00	0.00	7th Power Plan
Warehouse	Refrigeration	Refrigeration - Strip Curtain	Walkin Door	New	149.53	2	\$10.41	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Warehouse	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	New	2.43	15	\$45.43	0%	0%	\$1.97	0.00	0.00	Annual Energy Outlook, 2015
Warehouse	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	New	50.32	15	\$313.82	0%	0%	\$0.66	0.00	0.00	Annual Energy Outlook, 2015
Warehouse	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	New	1,175.09	10	\$506.05	0%	0%	\$0.06	0.00	0.00	Vermont TRM
Warehouse	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	New	63.61	6	\$45.41	0%	0%	\$0.13	0.00	0.00	7th Power Plan
Warehouse	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	New	5.13	8	\$3.72	0%	0%	\$0.11	0.00	0.00	7th Power Plan
Warehouse	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	New	1,154.99	5	\$45.85	0%	0%	\$0.01	0.00	0.00	Illinois TRM
Warehouse	Refrigeration	Grocery - ECMs for Display Cases	Fridge Case	New	264.64	16	\$165.20	0%	0%	\$0.06	0.00	0.00	7th Power Plan
Warehouse	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	New	1,019.38	5	\$187.94	25%	75%	\$0.04	0.16	0.21	Illinois TRM
Warehouse	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	New	284.97	18	\$8,526.67	25%	50%	\$1.82	0.94	1.22	7th Power Plan
Warehouse	Office Equipment	Office Equipment - Smart Power Strips	Smart Strip	New	10.24	4	\$41.63	10%	50%	\$0.94	0.48	0.57	7th Power Plan
Warehouse	Cooling	Lodging - Guest Room Controls	LodgUnit	New	85.43	15	\$260.00	0%	0%	\$10.00	0.00	0.00	AEG-BEST
Warehouse	Heating	Lodging - Guest Room Controls	LodgUnit	New	-109.53	15	\$260.00	0%	0%	\$10.00	0.00	0.00	AEG-BEST
Warehouse	Office Equipment	Data Center - Best Practice Measures	sqft	New	0.02	5	\$0.00	0%	0%	\$0.02	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse	Cooling	Data Center - Commercially Available Measures	sqft	New	0.01	8	\$0.00	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse	Ventilation	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse	Interior Lighting	Data Center - Commercially Available Measures	sqft	New	0.01	8	\$0.00	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse	Office Equipment	Data Center - Commercially Available Measures	sqft	New	0.01	8	\$0.00	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx

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Warehouse	Cooling	Data Center - Cutting Edge Measures	sqft	New	0.02	6	\$0.00	0%	0%	\$0.02	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse	Office Equipment	Data Center - Cutting Edge Measures	sqft	New	0.00	6	\$0.00	0%	0%	\$0.02	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	New	861.74	18	\$4,092.80	0%	0%	\$0.29	0.00	0.00	7th Power Plan
Warehouse	Miscellaneous	Pool Pump - Timer	perBldg	New	0.00	10	\$85.22	15%	75%	\$0.00	0.00	0.00	Ontario Power TRM
Warehouse	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	New	5,469.95	6	\$35.93	1%	3%	\$0.00	0.00	0.27	7th Power Plan
Warehouse	Cooling	Advanced New Construction Designs	sqft	New	0.51	25	\$4.11	10%	15%	\$0.16	1.61	1.81	AEG Research
Warehouse	Heating	Advanced New Construction Designs	sqft	New	0.95	25	\$4.11	10%	15%	\$0.16	3.14	3.50	AEG Research
Warehouse	Ventilation	Advanced New Construction Designs	sqft	New	0.04	25	\$4.11	10%	15%	\$0.16	0.71	0.90	AEG Research
Warehouse	Water Heating	Advanced New Construction Designs	sqft	New	0.04	25	\$4.11	10%	15%	\$0.16	0.26	0.36	AEG Research
Warehouse	Interior Lighting	Advanced New Construction Designs	sqft	New	0.32	25	\$4.11	10%	15%	\$0.16	5.10	6.41	AEG Research
Warehouse	Exterior Lighting	Advanced New Construction Designs	sqft	New	0.07	25	\$4.11	10%	15%	\$0.16	1.05	1.39	AEG Research
Warehouse	Cooling	Strategic Energy Management	sqft	New	0.08	3	\$0.11	3%	11%	\$0.10	0.04	0.06	AEG Research
Warehouse	Heating	Strategic Energy Management	sqft	New	0.14	3	\$0.11	3%	11%	\$0.10	0.08	0.11	AEG Research
Warehouse	Ventilation	Strategic Energy Management	sqft	New	0.01	3	\$0.11	3%	11%	\$0.10	0.02	0.03	AEG Research
Warehouse	Water Heating	Strategic Energy Management	sqft	New	0.01	3	\$0.11	3%	11%	\$0.10	0.01	0.02	AEG Research
Warehouse	Interior Lighting	Strategic Energy Management	sqft	New	0.05	3	\$0.11	3%	11%	\$0.10	0.13	0.25	AEG Research
Warehouse	Exterior Lighting	Strategic Energy Management	sqft	New	0.01	3	\$0.11	3%	11%	\$0.10	0.03	0.06	AEG Research
Warehouse	Refrigeration	Strategic Energy Management	sqft	New	0.01	3	\$0.11	3%	11%	\$0.10	0.02	0.02	AEG Research
Warehouse	Office Equipment	Strategic Energy Management	sqft	New	0.01	3	\$0.11	3%	11%	\$0.10	0.03	0.04	AEG Research
Warehouse	Cooling	Commissioning	sqft	New	0.11	3	\$0.48	9%	71%	\$0.34	0.41	0.59	AEG Research

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Warehouse	Heating	Commissioning	sqft	New	0.20	3	\$0.48	9%	71%	\$0.34	0.82	1.15	AEG Research
Warehouse	Ventilation	Commissioning	sqft	New	0.01	3	\$0.48	9%	71%	\$0.34	0.18	0.32	AEG Research
Warehouse	Water Heating	Commissioning	sqft	New	0.00	3	\$0.48	9%	71%	\$0.34	0.02	0.06	AEG Research
Warehouse	Interior Lighting	Commissioning	sqft	New	0.06	3	\$0.48	9%	71%	\$0.34	1.12	2.22	AEG Research
Warehouse	Exterior Lighting	Commissioning	sqft	New	0.01	3	\$0.48	9%	71%	\$0.34	0.23	0.51	AEG Research
Warehouse	Refrigeration	Commissioning	sqft	New	0.02	3	\$0.48	9%	71%	\$0.34	0.40	0.35	AEG Research
Warehouse	Cooling	Retrocommissioning	sqft	New	0.11	3	\$0.31	0%	0%	\$0.22	0.00	0.00	AEG Research
Warehouse	Heating	Retrocommissioning	sqft	New	0.20	3	\$0.31	0%	0%	\$0.22	0.00	0.00	AEG Research
Warehouse	Ventilation	Retrocommissioning	sqft	New	0.01	3	\$0.31	0%	0%	\$0.22	0.00	0.00	AEG Research
Warehouse	Water Heating	Retrocommissioning	sqft	New	0.00	3	\$0.31	0%	0%	\$0.22	0.00	0.00	AEG Research
Warehouse	Interior Lighting	Retrocommissioning	sqft	New	0.06	3	\$0.31	0%	0%	\$0.22	0.00	0.00	AEG Research
Warehouse	Exterior Lighting	Retrocommissioning	sqft	New	0.01	3	\$0.31	0%	0%	\$0.22	0.00	0.00	AEG Research
Warehouse	Refrigeration	Retrocommissioning	sqft	New	0.02	3	\$0.31	0%	0%	\$0.22	0.00	0.00	AEG Research
Warehouse	Interior Lighting	Fruit Storage - Lighting Controls	sqft	New	0.04	10	\$0.09	0%	0%	\$0.18	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse	Refrigeration	Fruit Storage Refrigeration Retrofit	sqft	New	0.05	10	\$1.09	0%	0%	\$2.97	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse	Refrigeration	Fruit Storage Refrigeration Tuneup	sqft	New	0.01	3	\$0.23	0%	0%	\$6.08	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse	Refrigeration	Fruit Storage Retrofit - CO2 Scrub	sqft	New	0.02	10	\$3.13	0%	0%	\$17.58	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse	Refrigeration	Fruit Storage Retrofit - Membrane	sqft	New	0.00	10	\$0.68	0%	0%	\$19.08	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse, Controlled Atm.	Cooling	Insulation - Ceiling	sqft roof	Existing	0.12	45	\$1.28	15%	35%	\$0.24	0.91	1.18	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Heating	Insulation - Ceiling	sqft roof	Existing	0.23	45	\$1.28	15%	35%	\$0.24	0.70	0.87	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Ventilation	Insulation - Ceiling	sqft roof	Existing	0.03	45	\$1.28	15%	35%	\$0.24	0.60	0.86	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Cooling	Insulation - Ducting	sqft duct	Existing	0.04	20	\$0.84	15%	50%	\$1.23	0.55	0.76	Building Energy Simulation Tool

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Warehouse, Controlled Atm.	Heating	Insulation - Ducting	sqft duct	Existing	0.01	20	\$0.84	15%	50%	\$1.23	0.05	0.06	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Ventilation	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.84	15%	50%	\$1.23	0.04	0.06	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Cooling	Building Shell - Cool Roofs	sqft roof	Existing	0.14	20	\$0.78	45%	50%	\$10.00	0.26	0.37	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Heating	Building Shell - Cool Roofs	sqft roof	Existing	-0.15	20	\$0.78	45%	50%	\$10.00	-0.11	-0.14	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Ventilation	Building Shell - Cool Roofs	sqft roof	Existing	-0.02	20	\$0.78	45%	50%	\$10.00	-0.09	-0.14	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Cooling	Insulation - Wall Cavity	sqft wall	Existing	0.01	45	\$0.78	15%	35%	\$0.03	0.01	0.02	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Heating	Insulation - Wall Cavity	sqft wall	Existing	1.74	45	\$0.78	15%	35%	\$0.03	1.02	1.21	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Ventilation	Insulation - Wall Cavity	sqft wall	Existing	0.22	45	\$0.78	15%	35%	\$0.03	0.82	1.17	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Cooling	HVAC - Duct Repair and Sealing	tonCool	Existing	7.80	18	\$0.57	15%	50%	\$0.00	0.22	0.27	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Heating	HVAC - Duct Repair and Sealing	tonCool	Existing	11.64	18	\$0.57	15%	50%	\$0.00	0.13	0.15	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Ventilation	HVAC - Duct Repair and Sealing	tonCool	Existing	1.45	18	\$0.57	15%	50%	\$0.00	0.10	0.14	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Cooling	Windows - High Efficiency Glazing	sqft window	Existing	3.07	30	\$35.93	48%	48%	\$0.17	0.00	0.00	7th Power Plan
Warehouse, Controlled Atm.	Heating	Windows - High Efficiency Glazing	sqft window	Existing	12.77	30	\$35.93	48%	48%	\$0.17	0.00	0.00	7th Power Plan
Warehouse, Controlled Atm.	Ventilation	Windows - High Efficiency Glazing	sqft window	Existing	0.96	30	\$35.93	48%	48%	\$0.17	0.00	0.00	7th Power Plan
Warehouse, Controlled Atm.	Cooling	Chiller - Chilled Water Reset	ChillCtrl	Existing	4,049.28	10	\$884.85	15%	75%	\$0.03	0.47	0.66	AEG-BEST
Warehouse, Controlled Atm.	Cooling	Chiller - Chilled Water Variable-Flow System	HP cool	Existing	160.50	15	\$332.55	15%	75%	\$0.20	2.59	3.65	AEG-BEST
Warehouse, Controlled Atm.	Cooling	Chiller - Variable Speed Fans	HP fan	Existing	595.84	15	\$208.36	15%	75%	\$0.04	0.97	1.34	New Jersey TRM
Warehouse, Controlled Atm.	Cooling	Water-Cooled Chiller - Condenser Water Reset	ChillCtrl	Existing	17,116.54	10	\$884.85	15%	75%	\$0.01	0.20	0.28	AEG-BEST
Warehouse, Controlled Atm.	Cooling	HVAC - Economizer	HP cool	Existing	78.95	10	\$168.42	18%	75%	\$0.25	2.74	4.00	AEG-BEST

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Warehouse, Controlled Atm.	Heating	Space Heating - Heat Recovery Ventilator	CFM	Existing	4.13	14	\$5.08	3%	75%	\$0.14	2.97	3.85	7th Power Plan
Warehouse, Controlled Atm.	Ventilation	Ventilation - ECM on VAV Boxes	sqft	Existing	0.09	18	\$0.25	15%	20%	\$0.21	0.47	0.67	7th Power Plan
Warehouse, Controlled Atm.	Ventilation	Ventilation - Variable Speed Control	sqft	Existing	0.01	15	\$181.39	13%	50%	\$1,592.37	0.36	0.62	AEG-BEST
Warehouse, Controlled Atm.	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.25	15%	75%	\$5.07	0.25	0.43	7th Power Plan
Warehouse, Controlled Atm.	Cooling	Destratification Fans (HVLS)	Strat Fan	Existing	1,769.39	15	\$7,270.90	15%	15%	\$0.09	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Heating	Destratification Fans (HVLS)	Strat Fan	Existing	6,605.46	15	\$7,270.90	15%	15%	\$0.09	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Cooling	RTU - Maintenance	tonCool	Existing	38.74	3	\$35.00	15%	45%	\$0.26	0.48	0.75	AEG Research
Warehouse, Controlled Atm.	Cooling	RTU - Advanced Controls	sqft	Existing	0.04	15	\$0.07	15%	45%	\$0.15	0.26	0.33	7th Power Plan
Warehouse, Controlled Atm.	Cooling	RTU - Evaporative Precooler	tonCool	Existing	78.56	15	\$681.62	15%	75%	\$0.80	1.74	2.18	AEG Research
Warehouse, Controlled Atm.	Cooling	Ductless Mini Split Heat Pump	tonCool	Existing	172.75	15	\$3,359.26	15%	25%	\$0.63	0.04	0.06	7th Power Plan
Warehouse, Controlled Atm.	Heating	Ductless Mini Split Heat Pump	tonCool	Existing	346.79	15	\$3,359.26	15%	25%	\$0.63	0.81	1.06	7th Power Plan
Warehouse, Controlled Atm.	Cooling	Thermostat - WiFi/Interactive	sqft	Existing	0.26	5	\$0.66	30%	40%	\$0.15	0.97	1.32	7th Power Plan
Warehouse, Controlled Atm.	Heating	Thermostat - WiFi/Interactive	sqft	Existing	0.54	5	\$0.66	30%	40%	\$0.15	0.81	1.01	7th Power Plan
Warehouse, Controlled Atm.	Ventilation	Thermostat - WiFi/Interactive	sqft	Existing	0.07	5	\$0.66	30%	40%	\$0.15	0.68	1.01	7th Power Plan
Warehouse, Controlled Atm.	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	Existing	8.31	10	\$8.35	25%	65%	\$0.08	0.02	0.04	Illinois TRM
Warehouse, Controlled Atm.	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	Existing	21.52	10	\$11.64	25%	65%	\$0.04	0.02	0.05	7th Power Plan
Warehouse, Controlled Atm.	Water Heating	Water Heater - High Efficiency Circulation Pump	WHUnits	Existing	51.19	15	\$36.75	15%	75%	\$0.05	0.14	0.25	Hawaii TRM
Warehouse, Controlled Atm.	Water Heating	Water Heater - Pipe Insulation	PipeFeet	Existing	232.57	15	\$14.88	16%	75%	\$0.00	0.30	0.65	AEG-BEST
Warehouse, Controlled Atm.	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	Existing	42.78	4	\$144.04	25%	65%	\$0.52	0.08	0.20	7th Power Plan

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Warehouse, Controlled Atm.	Water Heating	Water Heater - Thermostat Setback	WHunits	Existing	50.68	2	\$5.00	15%	75%	\$0.03	0.14	0.34	Illinois TRM
Warehouse, Controlled Atm.	Water Heating	Water Heater - Solar System	PipeFeet	Existing	801.66	20	\$215.28	1%	30%	\$0.02	0.50	1.11	AEG-BEST
Warehouse, Controlled Atm.	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.19	15	\$0.35	13%	38%	\$0.15	6.05	8.55	7th Power Plan
Warehouse, Controlled Atm.	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.26	15	\$0.58	13%	38%	\$0.18	8.05	11.72	7th Power Plan
Warehouse, Controlled Atm.	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	Existing	536.74	15	\$54.41	1%	3%	\$0.01	0.13	0.23	7th Power Plan
Warehouse, Controlled Atm.	Interior Lighting	Interior Lighting - Timeclocks and Timers	occ sens	Existing	0.00	8	\$111.67	7%	15%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Warehouse, Controlled Atm.	Interior Lighting	Interior Lighting - Skylights	1000 sqft	Existing	0.00	15	\$1,006.35	15%	30%	\$0.00	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	1000 sqft	Existing	29.89	16	\$1,807.69	5%	15%	\$4.60	0.28	0.53	7th Power Plan
Warehouse, Controlled Atm.	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	Existing	309.11	11	\$30.80	15%	50%	\$0.01	1.08	1.85	Illinois TRM
Warehouse, Controlled Atm.	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	ELtg Watts	Existing	1.53	8	\$0.63	15%	25%	\$0.05	1.22	2.37	7th Power Plan
Warehouse, Controlled Atm.	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	Existing	64.12	8	\$55.10	15%	25%	\$0.09	0.62	1.24	Pacific Gas and Electric Research
Warehouse, Controlled Atm.	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	Existing	78.56	7	\$3,400.00	15%	30%	\$5.12	1.13	2.29	AEG Research
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Anti-Sweat Heater	Fridge Feet	Existing	506.62	8	\$48.18	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	Existing	10,746.52	4	\$10.44	0%	0%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	Existing	72,446.17	16	\$165.20	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	Existing	2,310.54	15	\$335.85	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Strip Curtain	Walkin Door	Existing	1,260.63	2	\$10.41	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBtuh	Existing	35.16	15	\$45.43	0%	0%	\$0.14	0.00	0.00	Annual Energy Outlook, 2015
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	Existing	728.84	15	\$313.82	0%	0%	\$0.05	0.00	0.00	Annual Energy Outlook, 2015

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Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	Existing	48,660.14	10	\$506.05	0%	0%	\$0.00	0.00	0.00	Vermont TRM
Warehouse, Controlled Atm.	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	Existing	304.01	6	\$45.41	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Warehouse, Controlled Atm.	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	Existing	24.50	8	\$3.72	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Warehouse, Controlled Atm.	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	Existing	5,381.08	5	\$45.85	0%	0%	\$0.00	0.00	0.00	Illinois TRM
Warehouse, Controlled Atm.	Refrigeration	Grocery - ECMs for Display Cases	Fridge Case	Existing	1,259.79	16	\$165.20	5%	25%	\$0.01	0.19	0.27	7th Power Plan
Warehouse, Controlled Atm.	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	Existing	1,053.95	5	\$187.94	25%	75%	\$0.04	9.40	12.46	Illinois TRM
Warehouse, Controlled Atm.	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	Existing	897.34	18	\$8,526.67	25%	50%	\$0.74	0.88	1.29	7th Power Plan
Warehouse, Controlled Atm.	Office Equipment	Office Equipment - Smart Power Strips	Smart Strip	Existing	5.45	4	\$41.63	10%	50%	\$1.76	0.56	0.63	7th Power Plan
Warehouse, Controlled Atm.	Cooling	Lodging - Guest Room Controls	LodgUnit	Existing	81.60	15	\$260.00	0%	0%	\$10.00	0.00	0.00	AEG-BEST
Warehouse, Controlled Atm.	Heating	Lodging - Guest Room Controls	LodgUnit	Existing	-99.45	15	\$260.00	0%	0%	\$10.00	0.00	0.00	AEG-BEST
Warehouse, Controlled Atm.	Office Equipment	Data Center - Best Practice Measures	sqft	Existing	0.01	5	\$0.00	0%	0%	\$0.02	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse, Controlled Atm.	Cooling	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.00	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse, Controlled Atm.	Ventilation	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.00	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse, Controlled Atm.	Interior Lighting	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.00	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse, Controlled Atm.	Office Equipment	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.00	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse, Controlled Atm.	Cooling	Data Center - Cutting Edge Measures	sqft	Existing	0.02	6	\$0.00	0%	0%	\$0.02	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse, Controlled Atm.	Office Equipment	Data Center - Cutting Edge Measures	sqft	Existing	0.00	6	\$0.00	0%	0%	\$0.02	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse, Controlled Atm.	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	Existing	2,720.85	18	\$4,092.80	0%	0%	\$0.12	0.00	0.00	7th Power Plan
Warehouse, Controlled Atm.	Miscellaneous	Pool Pump - Timer	perBldg	Existing	0.00	10	\$85.22	15%	75%	\$0.00	0.00	0.00	Ontario Power TRM

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Warehouse, Controlled Atm.	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	Existing	21,851.96	6	\$35.93	1%	3%	\$0.00	0.00	1.92	7th Power Plan
Warehouse, Controlled Atm.	Cooling	Advanced New Construction Designs	sqft	Existing	0.42	25	\$4.11	0%	0%	\$0.17	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Heating	Advanced New Construction Designs	sqft	Existing	0.86	25	\$4.11	0%	0%	\$0.17	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Ventilation	Advanced New Construction Designs	sqft	Existing	0.11	25	\$4.11	0%	0%	\$0.17	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Water Heating	Advanced New Construction Designs	sqft	Existing	0.05	25	\$4.11	0%	0%	\$0.17	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Interior Lighting	Advanced New Construction Designs	sqft	Existing	0.36	25	\$4.11	0%	0%	\$0.17	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Exterior Lighting	Advanced New Construction Designs	sqft	Existing	0.08	25	\$4.11	0%	0%	\$0.17	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Cooling	Strategic Energy Management	sqft	Existing	0.06	3	\$0.26	3%	11%	\$0.11	0.20	0.32	AEG Research
Warehouse, Controlled Atm.	Heating	Strategic Energy Management	sqft	Existing	0.13	3	\$0.26	3%	11%	\$0.11	0.17	0.23	AEG Research
Warehouse, Controlled Atm.	Ventilation	Strategic Energy Management	sqft	Existing	0.02	3	\$0.26	3%	11%	\$0.11	0.14	0.24	AEG Research
Warehouse, Controlled Atm.	Water Heating	Strategic Energy Management	sqft	Existing	0.01	3	\$0.26	3%	11%	\$0.11	0.03	0.06	AEG Research
Warehouse, Controlled Atm.	Interior Lighting	Strategic Energy Management	sqft	Existing	0.06	3	\$0.26	3%	11%	\$0.11	0.41	0.79	AEG Research
Warehouse, Controlled Atm.	Exterior Lighting	Strategic Energy Management	sqft	Existing	0.01	3	\$0.26	3%	11%	\$0.11	0.09	0.18	AEG Research
Warehouse, Controlled Atm.	Refrigeration	Strategic Energy Management	sqft	Existing	0.49	3	\$0.26	3%	11%	\$0.11	4.12	5.85	AEG Research
Warehouse, Controlled Atm.	Office Equipment	Strategic Energy Management	sqft	Existing	0.01	3	\$0.26	3%	11%	\$0.11	0.06	0.07	AEG Research
Warehouse, Controlled Atm.	Cooling	Commissioning	sqft	Existing	0.09	3	\$0.46	0%	0%	\$0.10	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Heating	Commissioning	sqft	Existing	0.18	3	\$0.46	0%	0%	\$0.10	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Ventilation	Commissioning	sqft	Existing	0.02	3	\$0.46	0%	0%	\$0.10	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Water Heating	Commissioning	sqft	Existing	0.00	3	\$0.46	0%	0%	\$0.10	0.00	0.00	AEG Research

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Warehouse, Controlled Atm.	Interior Lighting	Commissioning	sqft	Existing	0.06	3	\$0.46	0%	0%	\$0.10	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Exterior Lighting	Commissioning	sqft	Existing	0.01	3	\$0.46	0%	0%	\$0.10	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Refrigeration	Commissioning	sqft	Existing	1.13	3	\$0.46	0%	0%	\$0.10	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Cooling	Retrocommissioning	sqft	Existing	0.09	3	\$0.29	0%	0%	\$0.06	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Heating	Retrocommissioning	sqft	Existing	0.18	3	\$0.29	0%	0%	\$0.06	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Ventilation	Retrocommissioning	sqft	Existing	0.02	3	\$0.29	0%	0%	\$0.06	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Water Heating	Retrocommissioning	sqft	Existing	0.00	3	\$0.29	0%	0%	\$0.06	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Interior Lighting	Retrocommissioning	sqft	Existing	0.06	3	\$0.29	0%	0%	\$0.06	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Exterior Lighting	Retrocommissioning	sqft	Existing	0.01	3	\$0.29	0%	0%	\$0.06	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Refrigeration	Retrocommissioning	sqft	Existing	1.13	3	\$0.29	0%	0%	\$0.06	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Interior Lighting	Fruit Storage - Lighting Controls	sqft	Existing	0.05	10	\$0.09	0%	0%	\$0.19	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse, Controlled Atm.	Refrigeration	Fruit Storage Refrigeration Retrofit	sqft	Existing	3.51	10	\$1.09	0%	0%	\$0.04	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse, Controlled Atm.	Refrigeration	Fruit Storage Refrigeration Tuneup	sqft	Existing	0.90	3	\$0.23	0%	0%	\$0.08	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse, Controlled Atm.	Refrigeration	Fruit Storage Retrofit - CO2 Scrub	sqft	Existing	1.69	10	\$3.13	0%	0%	\$0.25	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse, Controlled Atm.	Refrigeration	Fruit Storage Retrofit - Membrane	sqft	Existing	0.34	10	\$0.68	0%	0%	\$0.27	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse, Controlled Atm.	Cooling	Insulation - Ceiling	sqft roof	New	0.00	45	\$1.28	15%	50%	\$0.38	0.00	0.00	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Heating	Insulation - Ceiling	sqft roof	New	0.23	45	\$1.28	15%	50%	\$0.38	0.31	0.34	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Ventilation	Insulation - Ceiling	sqft roof	New	0.02	45	\$1.28	15%	50%	\$0.38	0.22	0.28	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Cooling	Insulation - Ducting	sqft duct	New	0.06	20	\$0.84	15%	50%	\$0.87	0.22	0.26	Building Energy Simulation Tool

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Warehouse, Controlled Atm.	Heating	Insulation - Ducting	sqft duct	New	0.01	20	\$0.84	15%	50%	\$0.87	0.02	0.02	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Ventilation	Insulation - Ducting	sqft duct	New	0.00	20	\$0.84	15%	50%	\$0.87	0.01	0.02	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Cooling	Building Shell - Cool Roofs	sqft roof	New	0.13	20	\$0.78	45%	50%	\$10.00	0.07	0.08	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Heating	Building Shell - Cool Roofs	sqft roof	New	-0.15	20	\$0.78	45%	50%	\$10.00	-0.03	-0.03	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Ventilation	Building Shell - Cool Roofs	sqft roof	New	-0.01	20	\$0.78	45%	50%	\$10.00	-0.02	-0.03	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Cooling	Insulation - Wall Cavity	sqft wall	New	-0.01	45	\$0.78	15%	50%	\$0.24	-0.01	-0.01	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Heating	Insulation - Wall Cavity	sqft wall	New	0.23	45	\$0.78	15%	50%	\$0.24	0.06	0.07	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Ventilation	Insulation - Wall Cavity	sqft wall	New	0.02	45	\$0.78	15%	50%	\$0.24	0.04	0.05	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Cooling	HVAC - Duct Repair and Sealing	tonCool	New	12.46	18	\$0.57	15%	50%	\$0.00	0.08	0.10	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Heating	HVAC - Duct Repair and Sealing	tonCool	New	9.21	18	\$0.57	15%	50%	\$0.00	0.02	0.03	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Ventilation	HVAC - Duct Repair and Sealing	tonCool	New	0.82	18	\$0.57	15%	50%	\$0.00	0.02	0.02	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Cooling	Windows - High Efficiency Glazing	sqft window	New	2.72	30	\$35.93	66%	66%	\$0.18	0.00	0.00	7th Power Plan
Warehouse, Controlled Atm.	Heating	Windows - High Efficiency Glazing	sqft window	New	12.38	30	\$35.93	66%	66%	\$0.18	0.00	0.00	7th Power Plan
Warehouse, Controlled Atm.	Ventilation	Windows - High Efficiency Glazing	sqft window	New	0.65	30	\$35.93	66%	66%	\$0.18	0.00	0.00	7th Power Plan
Warehouse, Controlled Atm.	Cooling	Chiller - Chilled Water Reset	ChillCtrl	New	3,243.05	10	\$884.85	15%	75%	\$0.03	0.05	0.06	AEG-BEST
Warehouse, Controlled Atm.	Cooling	Chiller - Chilled Water Variable-Flow System	HP cool	New	129.06	15	\$332.55	15%	75%	\$0.24	0.31	0.41	AEG-BEST
Warehouse, Controlled Atm.	Cooling	Chiller - Variable Speed Fans	HP fan	New	474.19	15	\$208.36	15%	75%	\$0.04	0.12	0.15	New Jersey TRM
Warehouse, Controlled Atm.	Cooling	Water-Cooled Chiller - Condenser Water Reset	ChillCtrl	New	13,552.70	10	\$884.85	15%	75%	\$0.01	0.02	0.03	AEG-BEST
Warehouse, Controlled Atm.	Cooling	HVAC - Economizer	HP cool	New	70.33	10	\$168.42	18%	75%	\$0.28	0.30	0.40	AEG-BEST

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Warehouse, Controlled Atm.	Heating	Space Heating - Heat Recovery Ventilator	CFM	New	3.90	14	\$5.08	6%	75%	\$0.14	0.38	0.47	7th Power Plan
Warehouse, Controlled Atm.	Ventilation	Ventilation - ECM on VAV Boxes	sqft	New	0.06	18	\$0.25	15%	20%	\$0.24	0.09	0.12	7th Power Plan
Warehouse, Controlled Atm.	Ventilation	Ventilation - Variable Speed Control	sqft	New	0.01	15	\$181.39	19%	50%	\$1,861.33	0.04	0.06	AEG-BEST
Warehouse, Controlled Atm.	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.25	15%	75%	\$5.92	0.03	0.05	7th Power Plan
Warehouse, Controlled Atm.	Cooling	Destratification Fans (HVLS)	Strat Fan	New	1,527.18	15	\$7,270.90	15%	15%	\$0.09	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Heating	Destratification Fans (HVLS)	Strat Fan	New	6,402.95	15	\$7,270.90	15%	15%	\$0.09	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Cooling	RTU - Maintenance	tonCool	New	37.11	3	\$35.00	15%	45%	\$0.27	0.02	0.03	AEG Research
Warehouse, Controlled Atm.	Cooling	RTU - Advanced Controls	sqft	New	0.04	15	\$0.07	15%	45%	\$0.16	0.06	0.07	7th Power Plan
Warehouse, Controlled Atm.	Cooling	RTU - Evaporative Precooler	tonCool	New	75.00	15	\$681.62	15%	75%	\$0.83	0.50	0.57	AEG Research
Warehouse, Controlled Atm.	Cooling	Ductless Mini Split Heat Pump	tonCool	New	144.34	15	\$3,359.26	15%	25%	\$0.69	0.01	0.01	7th Power Plan
Warehouse, Controlled Atm.	Heating	Ductless Mini Split Heat Pump	tonCool	New	334.57	15	\$3,359.26	15%	25%	\$0.69	0.14	0.17	7th Power Plan
Warehouse, Controlled Atm.	Cooling	Thermostat - WiFi/Interactive	sqft	New	0.24	5	\$0.66	30%	40%	\$0.16	0.03	0.04	7th Power Plan
Warehouse, Controlled Atm.	Heating	Thermostat - WiFi/Interactive	sqft	New	0.52	5	\$0.66	30%	40%	\$0.16	0.02	0.03	7th Power Plan
Warehouse, Controlled Atm.	Ventilation	Thermostat - WiFi/Interactive	sqft	New	0.05	5	\$0.66	30%	40%	\$0.16	0.02	0.03	7th Power Plan
Warehouse, Controlled Atm.	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	New	6.98	10	\$8.35	25%	65%	\$0.08	0.00	0.00	Illinois TRM
Warehouse, Controlled Atm.	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	New	18.04	10	\$11.64	25%	65%	\$0.04	0.00	0.00	7th Power Plan
Warehouse, Controlled Atm.	Water Heating	Water Heater - High Efficiency Circulation Pump	WHUnits	New	42.79	15	\$36.75	15%	75%	\$0.05	0.03	0.04	Hawaii TRM
Warehouse, Controlled Atm.	Water Heating	Water Heater - Pipe Insulation	PipeFeet	New	188.70	15	\$14.88	1%	75%	\$0.00	0.05	0.10	AEG-BEST
Warehouse, Controlled Atm.	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	New	36.19	4	\$144.04	25%	65%	\$0.51	0.00	0.01	7th Power Plan

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Warehouse, Controlled Atm.	Water Heating	Water Heater - Thermostat Setback	WHunits	New	42.58	2	\$5.00	15%	75%	\$0.03	0.00	0.01	Illinois TRM
Warehouse, Controlled Atm.	Water Heating	Water Heater - Solar System	PipeFeet	New	656.24	20	\$215.28	1%	30%	\$0.02	0.08	0.14	AEG-BEST
Warehouse, Controlled Atm.	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.17	15	\$0.35	13%	38%	\$0.15	2.42	3.24	7th Power Plan
Warehouse, Controlled Atm.	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.23	15	\$0.58	13%	38%	\$0.18	3.25	4.40	7th Power Plan
Warehouse, Controlled Atm.	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	New	468.11	15	\$54.41	1%	3%	\$0.01	0.02	0.02	7th Power Plan
Warehouse, Controlled Atm.	Interior Lighting	Interior Lighting - Timeclocks and Timers	occ sens	New	0.00	8	\$111.67	7%	15%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Warehouse, Controlled Atm.	Interior Lighting	Interior Lighting - Skylights	1000 sqft	New	0.00	15	\$1,006.35	18%	33%	\$0.00	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	1000 sqft	New	25.23	16	\$1,807.69	5%	15%	\$4.60	0.04	0.06	7th Power Plan
Warehouse, Controlled Atm.	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	New	268.15	11	\$30.80	15%	50%	\$0.01	0.13	0.20	Illinois TRM
Warehouse, Controlled Atm.	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	ELtg Watts	New	1.27	8	\$0.63	15%	25%	\$0.05	0.11	0.21	7th Power Plan
Warehouse, Controlled Atm.	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	New	54.29	8	\$55.10	15%	25%	\$0.09	0.06	0.11	Pacific Gas and Electric Research
Warehouse, Controlled Atm.	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	New	67.06	7	\$3,400.00	15%	30%	\$5.08	0.09	0.18	AEG Research
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Anti-Sweat Heater	Fridge Feet	New	392.90	8	\$48.18	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	New	9,601.28	4	\$10.44	0%	0%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	New	64,211.09	16	\$165.20	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	New	2,105.55	15	\$335.85	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Strip Curtain	Walkin Door	New	1,118.65	2	\$10.41	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBtuh	New	32.04	15	\$45.43	0%	0%	\$0.15	0.00	0.00	Annual Energy Outlook, 2015
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	New	664.18	15	\$313.82	0%	0%	\$0.05	0.00	0.00	Annual Energy Outlook, 2015

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Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	New	43,128.85	10	\$506.05	0%	0%	\$0.00	0.00	0.00	Vermont TRM
Warehouse, Controlled Atm.	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	New	278.63	6	\$45.41	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Warehouse, Controlled Atm.	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	New	22.45	8	\$3.72	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Warehouse, Controlled Atm.	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	New	5,038.86	5	\$45.85	0%	0%	\$0.00	0.00	0.00	Illinois TRM
Warehouse, Controlled Atm.	Refrigeration	Grocery - ECMs for Display Cases	Fridge Case	New	1,154.52	16	\$165.20	5%	25%	\$0.01	0.03	0.03	7th Power Plan
Warehouse, Controlled Atm.	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	New	1,026.70	5	\$187.94	25%	75%	\$0.04	0.51	0.67	Illinois TRM
Warehouse, Controlled Atm.	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	New	601.80	18	\$8,526.67	25%	50%	\$0.87	0.18	0.23	7th Power Plan
Warehouse, Controlled Atm.	Office Equipment	Office Equipment - Smart Power Strips	Smart Strip	New	5.17	4	\$41.63	10%	50%	\$1.85	0.02	0.03	7th Power Plan
Warehouse, Controlled Atm.	Cooling	Lodging - Guest Room Controls	LodgUnit	New	69.31	15	\$260.00	0%	0%	\$10.00	0.00	0.00	AEG-BEST
Warehouse, Controlled Atm.	Heating	Lodging - Guest Room Controls	LodgUnit	New	-97.19	15	\$260.00	0%	0%	\$10.00	0.00	0.00	AEG-BEST
Warehouse, Controlled Atm.	Office Equipment	Data Center - Best Practice Measures	sqft	New	0.01	5	\$0.00	0%	0%	\$0.02	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse, Controlled Atm.	Cooling	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse, Controlled Atm.	Ventilation	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse, Controlled Atm.	Interior Lighting	Data Center - Commercially Available Measures	sqft	New	0.01	8	\$0.00	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse, Controlled Atm.	Office Equipment	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse, Controlled Atm.	Cooling	Data Center - Cutting Edge Measures	sqft	New	0.02	6	\$0.00	0%	0%	\$0.02	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse, Controlled Atm.	Office Equipment	Data Center - Cutting Edge Measures	sqft	New	0.00	6	\$0.00	0%	0%	\$0.02	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse, Controlled Atm.	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	New	1,828.40	18	\$4,092.80	0%	0%	\$0.14	0.00	0.00	7th Power Plan
Warehouse, Controlled Atm.	Miscellaneous	Pool Pump - Timer	perBldg	New	0.00	10	\$85.22	15%	75%	\$0.00	0.00	0.00	Ontario Power TRM

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Warehouse, Controlled Atm.	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	New	21,851.96	6	\$35.93	1%	3%	\$0.00	0.00	0.10	7th Power Plan
Warehouse, Controlled Atm.	Cooling	Advanced New Construction Designs	sqft	New	0.38	25	\$4.11	10%	15%	\$0.17	0.22	0.25	AEG Research
Warehouse, Controlled Atm.	Heating	Advanced New Construction Designs	sqft	New	0.84	25	\$4.11	10%	15%	\$0.17	0.18	0.20	AEG Research
Warehouse, Controlled Atm.	Ventilation	Advanced New Construction Designs	sqft	New	0.08	25	\$4.11	10%	15%	\$0.17	0.13	0.17	AEG Research
Warehouse, Controlled Atm.	Water Heating	Advanced New Construction Designs	sqft	New	0.04	25	\$4.11	10%	15%	\$0.17	0.03	0.04	AEG Research
Warehouse, Controlled Atm.	Interior Lighting	Advanced New Construction Designs	sqft	New	0.31	25	\$4.11	10%	15%	\$0.17	0.43	0.54	AEG Research
Warehouse, Controlled Atm.	Exterior Lighting	Advanced New Construction Designs	sqft	New	0.07	25	\$4.11	10%	15%	\$0.17	0.09	0.12	AEG Research
Warehouse, Controlled Atm.	Cooling	Strategic Energy Management	sqft	New	0.06	3	\$0.24	3%	11%	\$0.11	0.01	0.01	AEG Research
Warehouse, Controlled Atm.	Heating	Strategic Energy Management	sqft	New	0.13	3	\$0.24	3%	11%	\$0.11	0.00	0.01	AEG Research
Warehouse, Controlled Atm.	Ventilation	Strategic Energy Management	sqft	New	0.01	3	\$0.24	3%	11%	\$0.11	0.00	0.01	AEG Research
Warehouse, Controlled Atm.	Water Heating	Strategic Energy Management	sqft	New	0.01	3	\$0.24	3%	11%	\$0.11	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Interior Lighting	Strategic Energy Management	sqft	New	0.05	3	\$0.24	3%	11%	\$0.11	0.01	0.02	AEG Research
Warehouse, Controlled Atm.	Exterior Lighting	Strategic Energy Management	sqft	New	0.01	3	\$0.24	3%	11%	\$0.11	0.00	0.01	AEG Research
Warehouse, Controlled Atm.	Refrigeration	Strategic Energy Management	sqft	New	0.44	3	\$0.24	3%	11%	\$0.11	0.10	0.14	AEG Research
Warehouse, Controlled Atm.	Office Equipment	Strategic Energy Management	sqft	New	0.01	3	\$0.24	3%	11%	\$0.11	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Cooling	Commissioning	sqft	New	0.08	3	\$0.44	0%	0%	\$0.10	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Heating	Commissioning	sqft	New	0.18	3	\$0.44	0%	0%	\$0.10	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Ventilation	Commissioning	sqft	New	0.02	3	\$0.44	0%	0%	\$0.10	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Water Heating	Commissioning	sqft	New	0.00	3	\$0.44	0%	0%	\$0.10	0.00	0.00	AEG Research

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Warehouse, Controlled Atm.	Interior Lighting	Commissioning	sqft	New	0.05	3	\$0.44	0%	0%	\$0.10	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Exterior Lighting	Commissioning	sqft	New	0.01	3	\$0.44	0%	0%	\$0.10	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Refrigeration	Commissioning	sqft	New	1.01	3	\$0.44	0%	0%	\$0.10	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Cooling	Retrocommissioning	sqft	New	0.08	3	\$0.28	0%	0%	\$0.06	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Heating	Retrocommissioning	sqft	New	0.18	3	\$0.28	0%	0%	\$0.06	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Ventilation	Retrocommissioning	sqft	New	0.02	3	\$0.28	0%	0%	\$0.06	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Water Heating	Retrocommissioning	sqft	New	0.00	3	\$0.28	0%	0%	\$0.06	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Interior Lighting	Retrocommissioning	sqft	New	0.05	3	\$0.28	0%	0%	\$0.06	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Exterior Lighting	Retrocommissioning	sqft	New	0.01	3	\$0.28	0%	0%	\$0.06	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Refrigeration	Retrocommissioning	sqft	New	1.01	3	\$0.28	0%	0%	\$0.06	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Interior Lighting	Fruit Storage - Lighting Controls	sqft	New	0.04	10	\$0.09	0%	0%	\$0.18	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse, Controlled Atm.	Refrigeration	Fruit Storage Refrigeration Retrofit	sqft	New	3.13	10	\$1.09	0%	0%	\$0.05	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse, Controlled Atm.	Refrigeration	Fruit Storage Refrigeration Tuneup	sqft	New	0.81	3	\$0.23	0%	0%	\$0.09	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse, Controlled Atm.	Refrigeration	Fruit Storage Retrofit - CO2 Scrub	sqft	New	1.52	10	\$3.13	0%	0%	\$0.27	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse, Controlled Atm.	Refrigeration	Fruit Storage Retrofit - Membrane	sqft	New	0.30	10	\$0.68	0%	0%	\$0.30	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Data Center	Cooling	Insulation - Ceiling	sqft roof	Existing	0.00	45	\$1.28	15%	35%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Data Center	Heating	Insulation - Ceiling	sqft roof	Existing	0.00	45	\$1.28	15%	35%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Data Center	Ventilation	Insulation - Ceiling	sqft roof	Existing	0.00	45	\$1.28	15%	35%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Data Center	Cooling	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.84	15%	35%	\$0.00	0.00	0.00	Building Energy Simulation Tool

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Data Center	Heating	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.84	15%	35%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Data Center	Ventilation	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.84	15%	35%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Data Center	Cooling	Building Shell - Cool Roofs	sqft roof	Existing	0.00	20	\$0.78	45%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Data Center	Heating	Building Shell - Cool Roofs	sqft roof	Existing	0.00	20	\$0.78	45%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Data Center	Ventilation	Building Shell - Cool Roofs	sqft roof	Existing	0.00	20	\$0.78	45%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Data Center	Cooling	Insulation - Wall Cavity	sqft wall	Existing	0.00	45	\$0.78	15%	35%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Data Center	Heating	Insulation - Wall Cavity	sqft wall	Existing	0.00	45	\$0.78	15%	35%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Data Center	Ventilation	Insulation - Wall Cavity	sqft wall	Existing	0.00	45	\$0.78	15%	35%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Data Center	Cooling	HVAC - Duct Repair and Sealing	tonCool	Existing	0.00	18	\$0.57	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Data Center	Heating	HVAC - Duct Repair and Sealing	tonCool	Existing	0.00	18	\$0.57	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Data Center	Ventilation	HVAC - Duct Repair and Sealing	tonCool	Existing	0.00	18	\$0.57	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Data Center	Cooling	Windows - High Efficiency Glazing	sqft window	Existing	0.00	30	\$35.93	48%	48%	\$0.00	0.00	0.00	7th Power Plan
Data Center	Heating	Windows - High Efficiency Glazing	sqft window	Existing	0.00	30	\$35.93	48%	48%	\$0.00	0.00	0.00	7th Power Plan
Data Center	Ventilation	Windows - High Efficiency Glazing	sqft window	Existing	0.00	30	\$35.93	48%	48%	\$0.00	0.00	0.00	7th Power Plan
Data Center	Cooling	Chiller - Chilled Water Reset	ChillCtrl	Existing	0.00	10	\$884.85	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Data Center	Cooling	Chiller - Chilled Water Variable-Flow System	HP cool	Existing	0.00	15	\$332.55	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Data Center	Cooling	Chiller - Variable Speed Fans	HP fan	Existing	0.00	15	\$208.36	15%	75%	\$0.00	0.00	0.00	New Jersey TRM
Data Center	Cooling	Water-Cooled Chiller - Condenser Water Reset	ChillCtrl	Existing	0.00	10	\$884.85	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Data Center	Cooling	HVAC - Economizer	HP cool	Existing	0.00	10	\$168.42	18%	75%	\$0.00	0.00	0.00	AEG-BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Data Center	Heating	Space Heating - Heat Recovery Ventilator	CFM	Existing	0.00	14	\$5.08	3%	75%	\$0.00	0.00	0.00	7th Power Plan
Data Center	Ventilation	Ventilation - ECM on VAV Boxes	sqft	Existing	0.00	18	\$0.25	15%	20%	\$0.00	0.00	0.00	7th Power Plan
Data Center	Ventilation	Ventilation - Variable Speed Control	sqft	Existing	0.00	15	\$181.39	13%	50%	\$0.00	0.00	0.00	AEG-BEST
Data Center	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.25	15%	75%	\$0.00	0.00	0.00	7th Power Plan
Data Center	Cooling	Destratification Fans (HVLS)	Strat Fan	Existing	0.00	15	\$7,270.90	15%	15%	\$0.00	0.00	0.00	AEG Research
Data Center	Heating	Destratification Fans (HVLS)	Strat Fan	Existing	0.00	15	\$7,270.90	15%	15%	\$0.00	0.00	0.00	AEG Research
Data Center	Cooling	RTU - Maintenance	tonCool	Existing	0.00	3	\$35.00	15%	45%	\$0.00	0.00	0.00	AEG Research
Data Center	Cooling	RTU - Advanced Controls	sqft	Existing	0.00	15	\$0.07	15%	45%	\$0.00	0.00	0.00	7th Power Plan
Data Center	Cooling	RTU - Evaporative Precooler	tonCool	Existing	0.00	15	\$681.62	15%	75%	\$0.00	0.00	0.00	AEG Research
Data Center	Cooling	Ductless Mini Split Heat Pump	tonCool	Existing	0.00	15	\$3,359.26	15%	25%	\$0.00	0.00	0.00	7th Power Plan
Data Center	Heating	Ductless Mini Split Heat Pump	tonCool	Existing	0.00	15	\$3,359.26	15%	25%	\$0.00	0.00	0.00	7th Power Plan
Data Center	Cooling	Thermostat - WiFi/Interactive	sqft	Existing	0.00	5	\$0.66	30%	40%	\$0.00	0.00	0.00	7th Power Plan
Data Center	Heating	Thermostat - WiFi/Interactive	sqft	Existing	0.00	5	\$0.66	30%	40%	\$0.00	0.00	0.00	7th Power Plan
Data Center	Ventilation	Thermostat - WiFi/Interactive	sqft	Existing	0.00	5	\$0.66	30%	40%	\$0.00	0.00	0.00	7th Power Plan
Data Center	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	Existing	0.00	10	\$8.35	25%	65%	\$0.00	0.00	0.00	Illinois TRM
Data Center	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	Existing	0.00	10	\$11.64	25%	65%	\$0.00	0.00	0.00	7th Power Plan
Data Center	Water Heating	Water Heater - High Efficiency Circulation Pump	WHUnits	Existing	0.00	15	\$36.75	15%	75%	\$0.00	0.00	0.00	Hawaii TRM
Data Center	Water Heating	Water Heater - Pipe Insulation	PipeFeet	Existing	0.00	15	\$14.88	16%	75%	\$0.00	0.00	0.00	AEG-BEST
Data Center	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	Existing	0.00	4	\$144.04	25%	65%	\$0.00	0.00	0.00	7th Power Plan
Data Center	Water Heating	Water Heater - Thermostat Setback	WHUnits	Existing	0.00	2	\$5.00	15%	75%	\$0.00	0.00	0.00	Illinois TRM
Data Center	Water Heating	Water Heater - Solar System	PipeFeet	Existing	0.00	20	\$215.28	1%	30%	\$0.00	0.00	0.00	AEG-BEST

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Data Center	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.00	15	\$0.35	3%	23%	\$0.00	0.00	0.00	7th Power Plan
Data Center	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.00	15	\$0.58	3%	23%	\$0.00	0.00	0.00	7th Power Plan
Data Center	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	Existing	0.00	15	\$54.41	1%	3%	\$0.00	0.00	0.00	7th Power Plan
Data Center	Interior Lighting	Interior Lighting - Timeclocks and Timers	occ sens	Existing	0.00	8	\$111.67	7%	15%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Data Center	Interior Lighting	Interior Lighting - Skylights	1000 sqft	Existing	0.00	15	\$1,006.35	15%	25%	\$0.00	0.00	0.00	AEG Research
Data Center	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	1000 sqft	Existing	0.00	16	\$1,807.69	5%	15%	\$0.00	0.00	0.00	7th Power Plan
Data Center	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	Existing	0.00	11	\$30.80	15%	50%	\$0.00	0.00	0.00	Illinois TRM
Data Center	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	ELtg Watts	Existing	0.00	8	\$0.63	15%	25%	\$0.00	0.00	0.00	7th Power Plan
Data Center	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	Existing	0.00	8	\$55.10	15%	25%	\$0.00	0.00	0.00	Pacific Gas and Electric Research
Data Center	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	Existing	0.00	7	\$3,400.00	15%	30%	\$0.00	0.00	0.00	AEG Research
Data Center	Refrigeration	Refrigeration - Anti-Sweat Heater	Fridge Feet	Existing	0.00	8	\$48.18	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Data Center	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	Existing	0.00	4	\$10.44	0%	0%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Data Center	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	Existing	0.00	16	\$165.20	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Data Center	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	Existing	0.00	15	\$335.85	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Data Center	Refrigeration	Refrigeration - Strip Curtain	WalkIn Door	Existing	0.00	2	\$10.41	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Data Center	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	Existing	0.00	15	\$45.43	0%	0%	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Data Center	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	Existing	0.00	15	\$313.82	0%	0%	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Data Center	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	Existing	0.00	10	\$506.05	0%	0%	\$0.00	0.00	0.00	Vermont TRM
Data Center	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	Existing	0.00	6	\$45.41	0%	0%	\$0.00	0.00	0.00	7th Power Plan

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Data Center	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	Existing	0.00	8	\$3.72	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Data Center	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	Existing	0.00	5	\$45.85	0%	0%	\$0.00	0.00	0.00	Illinois TRM
Data Center	Refrigeration	Grocery - ECMs for Display Cases	Fridge Case	Existing	0.00	16	\$165.20	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Data Center	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	Existing	0.00	5	\$187.94	25%	75%	\$0.00	0.00	0.00	Illinois TRM
Data Center	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	Existing	0.00	18	\$8,526.67	25%	50%	\$0.00	0.00	0.00	7th Power Plan
Data Center	Office Equipment	Office Equipment - Smart Power Strips	Smart Strip	Existing	0.00	4	\$41.63	10%	50%	\$0.00	0.00	0.00	7th Power Plan
Data Center	Cooling	Lodging - Guest Room Controls	LodgUnit	Existing	0.00	15	\$260.00	0%	0%	\$0.00	0.00	0.00	AEG-BEST
Data Center	Heating	Lodging - Guest Room Controls	LodgUnit	Existing	0.00	15	\$260.00	0%	0%	\$0.00	0.00	0.00	AEG-BEST
Data Center	Office Equipment	Data Center - Best Practice Measures	sqft	Existing	0.00	5	\$0.91	20%	75%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Data Center	Cooling	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.22	10%	35%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Data Center	Ventilation	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.22	10%	35%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Data Center	Interior Lighting	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.22	10%	35%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Data Center	Office Equipment	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.22	10%	35%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Data Center	Cooling	Data Center - Cutting Edge Measures	sqft	Existing	0.00	6	\$0.07	10%	15%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Data Center	Office Equipment	Data Center - Cutting Edge Measures	sqft	Existing	0.00	6	\$0.07	10%	15%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Data Center	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	Existing	0.00	18	\$4,092.80	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Data Center	Miscellaneous	Pool Pump - Timer	perBldg	Existing	0.00	10	\$85.22	15%	75%	\$0.00	0.00	0.00	Ontario Power TRM
Data Center	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	Existing	0.00	6	\$35.93	1%	3%	\$0.00	0.00	0.00	7th Power Plan
Data Center	Cooling	Advanced New Construction Designs	sqft	Existing	0.00	25	\$4.11	0%	0%	\$0.00	0.00	0.00	AEG Research

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Data Center	Heating	Advanced New Construction Designs	sqft	Existing	0.00	25	\$4.11	0%	0%	\$0.00	0.00	0.00	AEG Research
Data Center	Ventilation	Advanced New Construction Designs	sqft	Existing	0.00	25	\$4.11	0%	0%	\$0.00	0.00	0.00	AEG Research
Data Center	Water Heating	Advanced New Construction Designs	sqft	Existing	0.00	25	\$4.11	0%	0%	\$0.00	0.00	0.00	AEG Research
Data Center	Interior Lighting	Advanced New Construction Designs	sqft	Existing	0.00	25	\$4.11	0%	0%	\$0.00	0.00	0.00	AEG Research
Data Center	Exterior Lighting	Advanced New Construction Designs	sqft	Existing	0.00	25	\$4.11	0%	0%	\$0.00	0.00	0.00	AEG Research
Data Center	Cooling	Strategic Energy Management	sqft	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	AEG Research
Data Center	Heating	Strategic Energy Management	sqft	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	AEG Research
Data Center	Ventilation	Strategic Energy Management	sqft	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	AEG Research
Data Center	Water Heating	Strategic Energy Management	sqft	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	AEG Research
Data Center	Interior Lighting	Strategic Energy Management	sqft	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	AEG Research
Data Center	Exterior Lighting	Strategic Energy Management	sqft	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	AEG Research
Data Center	Refrigeration	Strategic Energy Management	sqft	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	AEG Research
Data Center	Office Equipment	Strategic Energy Management	sqft	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	AEG Research
Data Center	Cooling	Commissioning	sqft	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	AEG Research
Data Center	Heating	Commissioning	sqft	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	AEG Research
Data Center	Ventilation	Commissioning	sqft	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	AEG Research
Data Center	Water Heating	Commissioning	sqft	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	AEG Research
Data Center	Interior Lighting	Commissioning	sqft	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	AEG Research
Data Center	Exterior Lighting	Commissioning	sqft	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	AEG Research
Data Center	Refrigeration	Commissioning	sqft	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	AEG Research
Data Center	Cooling	Retrocommissioning	sqft	Existing	0.00	3	\$0.00	2%	65%	\$0.00	0.00	0.00	AEG Research
Data Center	Heating	Retrocommissioning	sqft	Existing	0.00	3	\$0.00	2%	65%	\$0.00	0.00	0.00	AEG Research

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Data Center	Ventilation	Retrocommissioning	sqft	Existing	0.00	3	\$0.00	2%	65%	\$0.00	0.00	0.00	AEG Research
Data Center	Water Heating	Retrocommissioning	sqft	Existing	0.00	3	\$0.00	2%	65%	\$0.00	0.00	0.00	AEG Research
Data Center	Interior Lighting	Retrocommissioning	sqft	Existing	0.00	3	\$0.00	2%	65%	\$0.00	0.00	0.00	AEG Research
Data Center	Exterior Lighting	Retrocommissioning	sqft	Existing	0.00	3	\$0.00	2%	65%	\$0.00	0.00	0.00	AEG Research
Data Center	Refrigeration	Retrocommissioning	sqft	Existing	0.00	3	\$0.00	2%	65%	\$0.00	0.00	0.00	AEG Research
Data Center	Interior Lighting	Fruit Storage - Lighting Controls	sqft	Existing	0.00	10	\$0.09	0%	0%	\$0.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Data Center	Refrigeration	Fruit Storage Refrigeration Retrofit	sqft	Existing	0.00	10	\$1.09	0%	0%	\$0.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Data Center	Refrigeration	Fruit Storage Refrigeration Tuneup	sqft	Existing	0.00	3	\$0.23	0%	0%	\$0.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Data Center	Refrigeration	Fruit Storage Retrofit - CO2 Scrub	sqft	Existing	0.00	10	\$3.13	0%	0%	\$0.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Data Center	Refrigeration	Fruit Storage Retrofit - Membrane	sqft	Existing	0.00	10	\$0.68	0%	0%	\$0.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Data Center	Cooling	Insulation - Ceiling	sqft roof	New	0.00	45	\$1.28	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Data Center	Heating	Insulation - Ceiling	sqft roof	New	0.00	45	\$1.28	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Data Center	Ventilation	Insulation - Ceiling	sqft roof	New	0.00	45	\$1.28	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Data Center	Cooling	Insulation - Ducting	sqft duct	New	0.00	20	\$0.84	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Data Center	Heating	Insulation - Ducting	sqft duct	New	0.00	20	\$0.84	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Data Center	Ventilation	Insulation - Ducting	sqft duct	New	0.00	20	\$0.84	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Data Center	Cooling	Building Shell - Cool Roofs	sqft roof	New	0.00	20	\$0.78	45%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Data Center	Heating	Building Shell - Cool Roofs	sqft roof	New	0.00	20	\$0.78	45%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Data Center	Ventilation	Building Shell - Cool Roofs	sqft roof	New	0.00	20	\$0.78	45%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Data Center	Cooling	Insulation - Wall Cavity	sqft wall	New	0.00	45	\$0.78	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool

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Data Center	Heating	Insulation - Wall Cavity	sqft wall	New	0.00	45	\$0.78	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Data Center	Ventilation	Insulation - Wall Cavity	sqft wall	New	0.00	45	\$0.78	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Data Center	Cooling	HVAC - Duct Repair and Sealing	tonCool	New	0.00	18	\$0.57	15%	35%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Data Center	Heating	HVAC - Duct Repair and Sealing	tonCool	New	0.00	18	\$0.57	15%	35%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Data Center	Ventilation	HVAC - Duct Repair and Sealing	tonCool	New	0.00	18	\$0.57	15%	35%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Data Center	Cooling	Windows - High Efficiency Glazing	sqft window	New	0.00	30	\$35.93	66%	66%	\$0.00	0.00	0.00	7th Power Plan
Data Center	Heating	Windows - High Efficiency Glazing	sqft window	New	0.00	30	\$35.93	66%	66%	\$0.00	0.00	0.00	7th Power Plan
Data Center	Ventilation	Windows - High Efficiency Glazing	sqft window	New	0.00	30	\$35.93	66%	66%	\$0.00	0.00	0.00	7th Power Plan
Data Center	Cooling	Chiller - Chilled Water Reset	ChillCtrl	New	0.00	10	\$884.85	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Data Center	Cooling	Chiller - Chilled Water Variable-Flow System	HP cool	New	0.00	15	\$332.55	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Data Center	Cooling	Chiller - Variable Speed Fans	HP fan	New	0.00	15	\$208.36	15%	75%	\$0.00	0.00	0.00	New Jersey TRM
Data Center	Cooling	Water-Cooled Chiller - Condenser Water Reset	ChillCtrl	New	0.00	10	\$884.85	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Data Center	Cooling	HVAC - Economizer	HP cool	New	0.00	10	\$168.42	18%	75%	\$0.00	0.00	0.00	AEG-BEST
Data Center	Heating	Space Heating - Heat Recovery Ventilator	CFM	New	0.00	14	\$5.08	6%	75%	\$0.00	0.00	0.00	7th Power Plan
Data Center	Ventilation	Ventilation - ECM on VAV Boxes	sqft	New	0.00	18	\$0.25	15%	20%	\$0.00	0.00	0.00	7th Power Plan
Data Center	Ventilation	Ventilation - Variable Speed Control	sqft	New	0.00	15	\$181.39	19%	50%	\$0.00	0.00	0.00	AEG-BEST
Data Center	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.25	15%	75%	\$0.00	0.00	0.00	7th Power Plan
Data Center	Cooling	Destratification Fans (HVLS)	Strat Fan	New	0.00	15	\$7,270.90	15%	15%	\$0.00	0.00	0.00	AEG Research
Data Center	Heating	Destratification Fans (HVLS)	Strat Fan	New	0.00	15	\$7,270.90	15%	15%	\$0.00	0.00	0.00	AEG Research
Data Center	Cooling	RTU - Maintenance	tonCool	New	0.00	3	\$35.00	15%	45%	\$0.00	0.00	0.00	AEG Research
Data Center	Cooling	RTU - Advanced Controls	sqft	New	0.00	15	\$0.07	15%	45%	\$0.00	0.00	0.00	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Data Center	Cooling	RTU - Evaporative Precooler	tonCool	New	0.00	15	\$681.62	15%	75%	\$0.00	0.00	0.00	AEG Research
Data Center	Cooling	Ductless Mini Split Heat Pump	tonCool	New	0.00	15	\$3,359.26	15%	25%	\$0.00	0.00	0.00	7th Power Plan
Data Center	Heating	Ductless Mini Split Heat Pump	tonCool	New	0.00	15	\$3,359.26	15%	25%	\$0.00	0.00	0.00	7th Power Plan
Data Center	Cooling	Thermostat - WiFi/Interactive	sqft	New	0.00	5	\$0.66	30%	40%	\$0.00	0.00	0.00	7th Power Plan
Data Center	Heating	Thermostat - WiFi/Interactive	sqft	New	0.00	5	\$0.66	30%	40%	\$0.00	0.00	0.00	7th Power Plan
Data Center	Ventilation	Thermostat - WiFi/Interactive	sqft	New	0.00	5	\$0.66	30%	40%	\$0.00	0.00	0.00	7th Power Plan
Data Center	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	New	0.00	10	\$8.35	25%	65%	\$0.00	0.00	0.00	Illinois TRM
Data Center	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	New	0.00	10	\$11.64	25%	65%	\$0.00	0.00	0.00	7th Power Plan
Data Center	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	New	0.00	15	\$36.75	15%	75%	\$0.00	0.00	0.00	Hawaii TRM
Data Center	Water Heating	Water Heater - Pipe Insulation	PipeFeet	New	0.00	15	\$14.88	1%	75%	\$0.00	0.00	0.00	AEG-BEST
Data Center	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	New	0.00	4	\$144.04	25%	65%	\$0.00	0.00	0.00	7th Power Plan
Data Center	Water Heating	Water Heater - Thermostat Setback	WHunits	New	0.00	2	\$5.00	15%	75%	\$0.00	0.00	0.00	Illinois TRM
Data Center	Water Heating	Water Heater - Solar System	PipeFeet	New	0.00	20	\$215.28	1%	30%	\$0.00	0.00	0.00	AEG-BEST
Data Center	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.00	15	\$0.35	11%	23%	\$0.00	0.00	0.00	7th Power Plan
Data Center	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.00	15	\$0.58	11%	23%	\$0.00	0.00	0.00	7th Power Plan
Data Center	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	New	0.00	15	\$54.41	1%	3%	\$0.00	0.00	0.00	7th Power Plan
Data Center	Interior Lighting	Interior Lighting - Timeclocks and Timers	occ sens	New	0.00	8	\$111.67	7%	15%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Data Center	Interior Lighting	Interior Lighting - Skylights	1000 sqft	New	0.00	15	\$1,006.35	18%	25%	\$0.00	0.00	0.00	AEG Research
Data Center	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	1000 sqft	New	0.00	16	\$1,807.69	5%	15%	\$0.00	0.00	0.00	7th Power Plan

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Data Center	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	New	0.00	11	\$30.80	15%	50%	\$0.00	0.00	0.00	Illinois TRM
Data Center	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	ELtg Watts	New	0.00	8	\$0.63	15%	25%	\$0.00	0.00	0.00	7th Power Plan
Data Center	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	New	0.00	8	\$55.10	15%	25%	\$0.00	0.00	0.00	Pacific Gas and Electric Research
Data Center	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	New	0.00	7	\$3,400.00	15%	30%	\$0.00	0.00	0.00	AEG Research
Data Center	Refrigeration	Refrigeration - Anti-Sweat Heater	Fridge Feet	New	0.00	8	\$48.18	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Data Center	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	New	0.00	4	\$10.44	0%	0%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Data Center	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	New	0.00	16	\$165.20	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Data Center	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	New	0.00	15	\$335.85	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Data Center	Refrigeration	Refrigeration - Strip Curtain	Walkin Door	New	0.00	2	\$10.41	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Data Center	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBtuh	New	0.00	15	\$45.43	0%	0%	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Data Center	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	New	0.00	15	\$313.82	0%	0%	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Data Center	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	New	0.00	10	\$506.05	0%	0%	\$0.00	0.00	0.00	Vermont TRM
Data Center	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	New	0.00	6	\$45.41	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Data Center	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	New	0.00	8	\$3.72	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Data Center	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	New	0.00	5	\$45.85	0%	0%	\$0.00	0.00	0.00	Illinois TRM
Data Center	Refrigeration	Grocery - ECMs for Display Cases	Fridge Case	New	0.00	16	\$165.20	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Data Center	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	New	0.00	5	\$187.94	25%	75%	\$0.00	0.00	0.00	Illinois TRM
Data Center	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	New	0.00	18	\$8,526.67	25%	50%	\$0.00	0.00	0.00	7th Power Plan
Data Center	Office Equipment	Office Equipment - Smart Power Strips	Smart Strip	New	0.00	4	\$41.63	10%	50%	\$0.00	0.00	0.00	7th Power Plan

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Data Center	Cooling	Lodging - Guest Room Controls	LodgUnit	New	0.00	15	\$260.00	0%	0%	\$0.00	0.00	0.00	AEG-BEST
Data Center	Heating	Lodging - Guest Room Controls	LodgUnit	New	0.00	15	\$260.00	0%	0%	\$0.00	0.00	0.00	AEG-BEST
Data Center	Office Equipment	Data Center - Best Practice Measures	sqft	New	0.00	5	\$0.91	20%	75%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Data Center	Cooling	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.22	10%	35%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Data Center	Ventilation	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.22	10%	35%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Data Center	Interior Lighting	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.22	10%	35%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Data Center	Office Equipment	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.22	10%	35%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Data Center	Cooling	Data Center - Cutting Edge Measures	sqft	New	0.00	6	\$0.07	10%	15%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Data Center	Office Equipment	Data Center - Cutting Edge Measures	sqft	New	0.00	6	\$0.07	10%	15%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Data Center	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	New	0.00	18	\$4,092.80	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Data Center	Miscellaneous	Pool Pump - Timer	perBldg	New	0.00	10	\$85.22	15%	75%	\$0.00	0.00	0.00	Ontario Power TRM
Data Center	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	New	0.00	6	\$35.93	1%	3%	\$0.00	0.00	0.00	7th Power Plan
Data Center	Cooling	Advanced New Construction Designs	sqft	New	0.00	25	\$4.11	10%	15%	\$0.00	0.00	0.00	AEG Research
Data Center	Heating	Advanced New Construction Designs	sqft	New	0.00	25	\$4.11	10%	15%	\$0.00	0.00	0.00	AEG Research
Data Center	Ventilation	Advanced New Construction Designs	sqft	New	0.00	25	\$4.11	10%	15%	\$0.00	0.00	0.00	AEG Research
Data Center	Water Heating	Advanced New Construction Designs	sqft	New	0.00	25	\$4.11	10%	15%	\$0.00	0.00	0.00	AEG Research
Data Center	Interior Lighting	Advanced New Construction Designs	sqft	New	0.00	25	\$4.11	10%	15%	\$0.00	0.00	0.00	AEG Research
Data Center	Exterior Lighting	Advanced New Construction Designs	sqft	New	0.00	25	\$4.11	10%	15%	\$0.00	0.00	0.00	AEG Research
Data Center	Cooling	Strategic Energy Management	sqft	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	AEG Research

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Data Center	Heating	Strategic Energy Management	sqft	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	AEG Research
Data Center	Ventilation	Strategic Energy Management	sqft	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	AEG Research
Data Center	Water Heating	Strategic Energy Management	sqft	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	AEG Research
Data Center	Interior Lighting	Strategic Energy Management	sqft	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	AEG Research
Data Center	Exterior Lighting	Strategic Energy Management	sqft	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	AEG Research
Data Center	Refrigeration	Strategic Energy Management	sqft	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	AEG Research
Data Center	Office Equipment	Strategic Energy Management	sqft	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	AEG Research
Data Center	Cooling	Commissioning	sqft	New	0.00	3	\$0.00	2%	65%	\$0.00	0.00	0.00	AEG Research
Data Center	Heating	Commissioning	sqft	New	0.00	3	\$0.00	2%	65%	\$0.00	0.00	0.00	AEG Research
Data Center	Ventilation	Commissioning	sqft	New	0.00	3	\$0.00	2%	65%	\$0.00	0.00	0.00	AEG Research
Data Center	Water Heating	Commissioning	sqft	New	0.00	3	\$0.00	2%	65%	\$0.00	0.00	0.00	AEG Research
Data Center	Interior Lighting	Commissioning	sqft	New	0.00	3	\$0.00	2%	65%	\$0.00	0.00	0.00	AEG Research
Data Center	Exterior Lighting	Commissioning	sqft	New	0.00	3	\$0.00	2%	65%	\$0.00	0.00	0.00	AEG Research
Data Center	Refrigeration	Commissioning	sqft	New	0.00	3	\$0.00	2%	65%	\$0.00	0.00	0.00	AEG Research
Data Center	Cooling	Retrocommissioning	sqft	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	AEG Research
Data Center	Heating	Retrocommissioning	sqft	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	AEG Research
Data Center	Ventilation	Retrocommissioning	sqft	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	AEG Research
Data Center	Water Heating	Retrocommissioning	sqft	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	AEG Research
Data Center	Interior Lighting	Retrocommissioning	sqft	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	AEG Research
Data Center	Exterior Lighting	Retrocommissioning	sqft	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	AEG Research
Data Center	Refrigeration	Retrocommissioning	sqft	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	AEG Research
Data Center	Interior Lighting	Fruit Storage - Lighting Controls	sqft	New	0.00	10	\$0.09	0%	0%	\$0.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx

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Data Center	Refrigeration	Fruit Storage Refrigeration Retrofit	sqft	New	0.00	10	\$1.09	0%	0%	\$0.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Data Center	Refrigeration	Fruit Storage Refrigeration Tuneup	sqft	New	0.00	3	\$0.23	0%	0%	\$0.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Data Center	Refrigeration	Fruit Storage Retrofit - CO2 Scrub	sqft	New	0.00	10	\$3.13	0%	0%	\$0.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Data Center	Refrigeration	Fruit Storage Retrofit - Membrane	sqft	New	0.00	10	\$0.68	0%	0%	\$0.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Miscellaneous	Cooling	Insulation - Ceiling	sqft roof	Existing	0.12	45	\$1.28	15%	35%	\$0.26	43.08	54.41	Building Energy Simulation Tool
Miscellaneous	Heating	Insulation - Ceiling	sqft roof	Existing	0.22	45	\$1.28	15%	35%	\$0.26	37.18	44.71	Building Energy Simulation Tool
Miscellaneous	Ventilation	Insulation - Ceiling	sqft roof	Existing	0.03	45	\$1.28	15%	35%	\$0.26	13.82	19.35	Building Energy Simulation Tool
Miscellaneous	Cooling	Insulation - Ducting	sqft duct	Existing	0.26	20	\$0.84	15%	50%	\$0.00	39.94	50.20	Building Energy Simulation Tool
Miscellaneous	Heating	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.84	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Miscellaneous	Ventilation	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.84	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Miscellaneous	Cooling	Building Shell - Cool Roofs	sqft roof	Existing	0.28	20	\$0.78	45%	50%	\$0.60	25.38	31.47	Building Energy Simulation Tool
Miscellaneous	Heating	Building Shell - Cool Roofs	sqft roof	Existing	-0.15	20	\$0.78	45%	50%	\$0.60	-6.31	-7.51	Building Energy Simulation Tool
Miscellaneous	Ventilation	Building Shell - Cool Roofs	sqft roof	Existing	-0.02	20	\$0.78	45%	50%	\$0.60	-2.37	-3.26	Building Energy Simulation Tool
Miscellaneous	Cooling	Insulation - Wall Cavity	sqft wall	Existing	-0.06	45	\$0.78	15%	35%	\$0.06	-6.21	-7.72	Building Energy Simulation Tool
Miscellaneous	Heating	Insulation - Wall Cavity	sqft wall	Existing	0.99	45	\$0.78	15%	35%	\$0.06	50.63	60.15	Building Energy Simulation Tool
Miscellaneous	Ventilation	Insulation - Wall Cavity	sqft wall	Existing	0.15	45	\$0.78	15%	35%	\$0.06	19.05	26.15	Building Energy Simulation Tool
Miscellaneous	Cooling	HVAC - Duct Repair and Sealing	tonCool	Existing	2.47	18	\$0.57	15%	50%	\$0.19	8.88	11.00	Building Energy Simulation Tool
Miscellaneous	Heating	HVAC - Duct Repair and Sealing	tonCool	Existing	-1.94	18	\$0.57	15%	50%	\$0.19	-3.31	-3.94	Building Energy Simulation Tool
Miscellaneous	Ventilation	HVAC - Duct Repair and Sealing	tonCool	Existing	-0.29	18	\$0.57	15%	50%	\$0.19	-1.24	-1.71	Building Energy Simulation Tool

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Miscellaneous	Cooling	Windows - High Efficiency Glazing	sqft window	Existing	5.46	30	\$35.93	48%	48%	\$0.16	0.00	0.00	7th Power Plan
Miscellaneous	Heating	Windows - High Efficiency Glazing	sqft window	Existing	12.12	30	\$35.93	48%	48%	\$0.16	0.00	0.00	7th Power Plan
Miscellaneous	Ventilation	Windows - High Efficiency Glazing	sqft window	Existing	1.05	30	\$35.93	48%	48%	\$0.16	0.00	0.00	7th Power Plan
Miscellaneous	Cooling	Chiller - Chilled Water Reset	ChillCtrl	Existing	1,431.78	10	\$884.85	15%	75%	\$0.08	8.64	11.94	AEG-BEST
Miscellaneous	Cooling	Chiller - Chilled Water Variable-Flow System	HP cool	Existing	144.04	15	\$332.55	15%	75%	\$0.23	119.77	168.11	AEG-BEST
Miscellaneous	Cooling	Chiller - Variable Speed Fans	HP fan	Existing	341.45	15	\$208.36	15%	75%	\$0.06	28.68	39.53	New Jersey TRM
Miscellaneous	Cooling	Water-Cooled Chiller - Condenser Water Reset	ChillCtrl	Existing	11,489.73	10	\$884.85	15%	75%	\$0.01	23.61	32.60	AEG-BEST
Miscellaneous	Cooling	HVAC - Economizer	HP cool	Existing	48.32	10	\$168.42	18%	75%	\$0.43	214.77	304.23	AEG-BEST
Miscellaneous	Heating	Space Heating - Heat Recovery Ventilator	CFM	Existing	2.45	14	\$5.08	3%	75%	\$0.23	147.16	192.88	7th Power Plan
Miscellaneous	Ventilation	Ventilation - ECM on VAV Boxes	sqft	Existing	0.10	18	\$0.25	15%	20%	\$0.20	10.87	15.11	7th Power Plan
Miscellaneous	Ventilation	Ventilation - Variable Speed Control	sqft	Existing	0.03	15	\$181.39	13%	25%	\$568.06	7.06	12.02	AEG-BEST
Miscellaneous	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.25	15%	25%	\$4.96	0.98	1.63	7th Power Plan
Miscellaneous	Cooling	Destratification Fans (HVLS)	Strat Fan	Existing	3,038.67	15	\$7,270.90	15%	15%	\$0.08	0.00	0.00	AEG Research
Miscellaneous	Heating	Destratification Fans (HVLS)	Strat Fan	Existing	6,216.17	15	\$7,270.90	15%	15%	\$0.08	0.00	0.00	AEG Research
Miscellaneous	Cooling	RTU - Maintenance	tonCool	Existing	22.82	3	\$35.00	15%	45%	\$0.44	47.48	74.62	AEG Research
Miscellaneous	Cooling	RTU - Advanced Controls	sqft	Existing	0.15	15	\$0.07	15%	45%	\$0.05	51.09	63.43	7th Power Plan
Miscellaneous	Cooling	RTU - Evaporative Precooler	tonCool	Existing	46.45	15	\$681.62	15%	75%	\$1.38	171.81	213.69	AEG Research
Miscellaneous	Cooling	Ductless Mini Split Heat Pump	tonCool	Existing	100.80	15	\$3,359.26	15%	25%	\$1.52	5.83	8.79	7th Power Plan
Miscellaneous	Heating	Ductless Mini Split Heat Pump	tonCool	Existing	110.08	15	\$3,359.26	15%	25%	\$1.52	21.69	28.78	7th Power Plan
Miscellaneous	Cooling	Thermostat - WiFi/Interactive	sqft	Existing	0.46	5	\$0.66	30%	40%	\$0.13	79.93	104.58	7th Power Plan
Miscellaneous	Heating	Thermostat - WiFi/Interactive	sqft	Existing	0.49	5	\$0.66	30%	40%	\$0.13	40.58	50.51	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Miscellaneous	Ventilation	Thermostat - WiFi/Interactive	sqft	Existing	0.08	5	\$0.66	30%	40%	\$0.13	15.66	22.48	7th Power Plan
Miscellaneous	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	Existing	4.39	10	\$8.35	25%	65%	\$0.15	1.48	3.64	Illinois TRM
Miscellaneous	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	Existing	11.37	10	\$11.64	25%	65%	\$0.08	1.91	4.71	7th Power Plan
Miscellaneous	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	Existing	51.15	15	\$36.75	15%	25%	\$0.05	1.92	3.65	Hawaii TRM
Miscellaneous	Water Heating	Water Heater - Pipe Insulation	PipeFeet	Existing	122.14	15	\$14.88	16%	75%	\$0.01	25.95	57.37	AEG-BEST
Miscellaneous	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	Existing	22.60	4	\$144.04	25%	65%	\$0.96	7.41	17.84	7th Power Plan
Miscellaneous	Water Heating	Water Heater - Thermostat Setback	WHunits	Existing	50.98	2	\$5.00	15%	75%	\$0.03	12.57	29.86	Illinois TRM
Miscellaneous	Water Heating	Water Heater - Solar System	PipeFeet	Existing	421.08	20	\$215.28	1%	30%	\$0.03	43.23	97.89	AEG-BEST
Miscellaneous	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.29	15	\$0.35	3%	23%	\$0.10	146.66	213.25	7th Power Plan
Miscellaneous	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.40	15	\$0.58	3%	23%	\$0.12	197.89	294.17	7th Power Plan
Miscellaneous	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	Existing	129.99	15	\$54.41	1%	3%	\$0.03	4.42	8.37	7th Power Plan
Miscellaneous	Interior Lighting	Interior Lighting - Timeclocks and Timers	occ sens	Existing	0.00	8	\$111.67	7%	15%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Miscellaneous	Interior Lighting	Interior Lighting - Skylights	1000 sqft	Existing	0.00	15	\$1,006.35	15%	25%	\$0.00	0.00	0.00	AEG Research
Miscellaneous	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	1000 sqft	Existing	152.28	16	\$1,807.69	5%	15%	\$0.89	30.35	59.22	7th Power Plan
Miscellaneous	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	Existing	1,574.82	11	\$30.80	15%	50%	\$0.00	116.78	207.63	Illinois TRM
Miscellaneous	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	ELtg Watts	Existing	1.56	8	\$0.63	15%	25%	\$0.04	44.66	86.20	7th Power Plan
Miscellaneous	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fxt	Existing	61.84	8	\$55.10	15%	25%	\$0.09	22.55	44.92	Pacific Gas and Electric Research
Miscellaneous	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fxt	Existing	74.07	7	\$3,400.00	15%	30%	\$5.15	39.67	82.20	AEG Research
Miscellaneous	Refrigeration	Refrigeration - Anti-Sweat Heater	Fridge Feet	Existing	12.57	8	\$48.18	0%	0%	\$0.57	0.00	0.00	7th Power Plan

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Miscellaneous	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	Existing	27.08	4	\$10.44	0%	0%	\$0.10	0.00	0.00	Michigan Energy Measures Database
Miscellaneous	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	Existing	197.83	16	\$165.20	0%	0%	\$0.09	0.00	0.00	7th Power Plan
Miscellaneous	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	Existing	17.36	15	\$335.85	0%	0%	\$1.98	0.00	0.00	7th Power Plan
Miscellaneous	Refrigeration	Refrigeration - Strip Curtain	Walkin Door	Existing	18.27	2	\$10.41	0%	0%	\$0.26	0.00	0.00	7th Power Plan
Miscellaneous	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	Existing	0.25	15	\$45.43	0%	0%	\$17.61	0.00	0.00	Annual Energy Outlook, 2015
Miscellaneous	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	Existing	5.46	15	\$313.82	0%	0%	\$5.87	0.00	0.00	Annual Energy Outlook, 2015
Miscellaneous	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	Existing	128.65	10	\$506.05	0%	0%	\$0.50	0.00	0.00	Vermont TRM
Miscellaneous	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	Existing	7.55	6	\$45.41	0%	0%	\$1.10	0.00	0.00	7th Power Plan
Miscellaneous	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	Existing	0.61	8	\$3.72	0%	0%	\$0.91	0.00	0.00	7th Power Plan
Miscellaneous	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	Existing	133.55	5	\$45.85	0%	0%	\$0.07	0.00	0.00	Illinois TRM
Miscellaneous	Refrigeration	Grocery - ECMs for Display Cases	Fridge Case	Existing	31.26	16	\$165.20	0%	0%	\$0.52	0.00	0.00	7th Power Plan
Miscellaneous	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	Existing	1,062.24	5	\$187.94	25%	75%	\$0.04	18.96	25.10	Illinois TRM
Miscellaneous	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	Existing	972.52	18	\$8,526.67	25%	50%	\$0.73	20.39	28.80	7th Power Plan
Miscellaneous	Office Equipment	Office Equipment - Smart Power Strips	Smart Strip	Existing	11.92	4	\$41.63	10%	50%	\$0.81	26.08	29.82	7th Power Plan
Miscellaneous	Cooling	Lodging - Guest Room Controls	LodgUnit	Existing	156.59	15	\$260.00	0%	0%	\$0.44	0.00	0.00	AEG-BEST
Miscellaneous	Heating	Lodging - Guest Room Controls	LodgUnit	Existing	-99.74	15	\$260.00	0%	0%	\$0.44	0.00	0.00	AEG-BEST
Miscellaneous	Office Equipment	Data Center - Best Practice Measures	sqft	Existing	0.02	5	\$0.00	0%	0%	\$0.02	0.00	0.00	com-datacenters-7p_v5p.xlsx
Miscellaneous	Cooling	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.00	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Miscellaneous	Ventilation	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.00	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx

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Miscellaneous	Interior Lighting	Data Center - Commercially Available Measures	sqft	Existing	0.02	8	\$0.00	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Miscellaneous	Office Equipment	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.00	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Miscellaneous	Cooling	Data Center - Cutting Edge Measures	sqft	Existing	0.03	6	\$0.00	0%	0%	\$0.02	0.00	0.00	com-datacenters-7p_v5p.xlsx
Miscellaneous	Office Equipment	Data Center - Cutting Edge Measures	sqft	Existing	0.00	6	\$0.00	0%	0%	\$0.02	0.00	0.00	com-datacenters-7p_v5p.xlsx
Miscellaneous	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	Existing	431.44	18	\$4,092.80	0%	5%	\$0.78	2.96	4.24	7th Power Plan
Miscellaneous	Miscellaneous	Pool Pump - Timer	perBldg	Existing	82.43	10	\$85.22	15%	75%	\$0.14	0.29	0.35	Ontario Power TRM
Miscellaneous	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	Existing	1,206.02	6	\$35.93	1%	3%	\$0.01	13.07	15.16	7th Power Plan
Miscellaneous	Cooling	Advanced New Construction Designs	sqft	Existing	0.75	25	\$4.11	0%	0%	\$0.12	0.00	0.00	AEG Research
Miscellaneous	Heating	Advanced New Construction Designs	sqft	Existing	0.78	25	\$4.11	0%	0%	\$0.12	0.00	0.00	AEG Research
Miscellaneous	Ventilation	Advanced New Construction Designs	sqft	Existing	0.12	25	\$4.11	0%	0%	\$0.12	0.00	0.00	AEG Research
Miscellaneous	Water Heating	Advanced New Construction Designs	sqft	Existing	0.18	25	\$4.11	0%	0%	\$0.12	0.00	0.00	AEG Research
Miscellaneous	Interior Lighting	Advanced New Construction Designs	sqft	Existing	0.60	25	\$4.11	0%	0%	\$0.12	0.00	0.00	AEG Research
Miscellaneous	Exterior Lighting	Advanced New Construction Designs	sqft	Existing	0.13	25	\$4.11	0%	0%	\$0.12	0.00	0.00	AEG Research
Miscellaneous	Cooling	Strategic Energy Management	sqft	Existing	0.11	3	\$0.15	5%	16%	\$0.10	21.92	33.96	AEG Research
Miscellaneous	Heating	Strategic Energy Management	sqft	Existing	0.12	3	\$0.15	5%	16%	\$0.10	11.63	16.19	AEG Research
Miscellaneous	Ventilation	Strategic Energy Management	sqft	Existing	0.02	3	\$0.15	5%	16%	\$0.10	4.53	7.52	AEG Research
Miscellaneous	Water Heating	Strategic Energy Management	sqft	Existing	0.03	3	\$0.15	5%	16%	\$0.10	3.18	7.72	AEG Research
Miscellaneous	Interior Lighting	Strategic Energy Management	sqft	Existing	0.09	3	\$0.15	5%	16%	\$0.10	19.95	39.50	AEG Research
Miscellaneous	Exterior Lighting	Strategic Energy Management	sqft	Existing	0.02	3	\$0.15	5%	16%	\$0.10	4.48	9.08	AEG Research

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Miscellaneous	Refrigeration	Strategic Energy Management	sqft	Existing	0.01	3	\$0.15	5%	16%	\$0.10	2.56	2.69	AEG Research
Miscellaneous	Office Equipment	Strategic Energy Management	sqft	Existing	0.01	3	\$0.15	5%	16%	\$0.10	3.90	4.55	AEG Research
Miscellaneous	Cooling	Commissioning	sqft	Existing	0.15	3	\$0.62	0%	0%	\$0.34	0.00	0.00	AEG Research
Miscellaneous	Heating	Commissioning	sqft	Existing	0.16	3	\$0.62	0%	0%	\$0.34	0.00	0.00	AEG Research
Miscellaneous	Ventilation	Commissioning	sqft	Existing	0.02	3	\$0.62	0%	0%	\$0.34	0.00	0.00	AEG Research
Miscellaneous	Water Heating	Commissioning	sqft	Existing	0.01	3	\$0.62	0%	0%	\$0.34	0.00	0.00	AEG Research
Miscellaneous	Interior Lighting	Commissioning	sqft	Existing	0.10	3	\$0.62	0%	0%	\$0.34	0.00	0.00	AEG Research
Miscellaneous	Exterior Lighting	Commissioning	sqft	Existing	0.02	3	\$0.62	0%	0%	\$0.34	0.00	0.00	AEG Research
Miscellaneous	Refrigeration	Commissioning	sqft	Existing	0.02	3	\$0.62	0%	0%	\$0.34	0.00	0.00	AEG Research
Miscellaneous	Cooling	Retrocommissioning	sqft	Existing	0.15	3	\$0.39	10%	65%	\$0.22	150.92	234.61	AEG Research
Miscellaneous	Heating	Retrocommissioning	sqft	Existing	0.16	3	\$0.39	10%	65%	\$0.22	80.08	111.85	AEG Research
Miscellaneous	Ventilation	Retrocommissioning	sqft	Existing	0.03	3	\$0.39	10%	65%	\$0.22	31.18	51.89	AEG Research
Miscellaneous	Water Heating	Retrocommissioning	sqft	Existing	0.01	3	\$0.39	10%	65%	\$0.22	7.30	17.77	AEG Research
Miscellaneous	Interior Lighting	Retrocommissioning	sqft	Existing	0.11	3	\$0.39	10%	65%	\$0.22	114.45	227.43	AEG Research
Miscellaneous	Exterior Lighting	Retrocommissioning	sqft	Existing	0.02	3	\$0.39	10%	65%	\$0.22	25.72	52.25	AEG Research
Miscellaneous	Refrigeration	Retrocommissioning	sqft	Existing	0.02	3	\$0.39	10%	65%	\$0.22	29.38	30.95	AEG Research
Miscellaneous	Interior Lighting	Fruit Storage - Lighting Controls	sqft	Existing	0.07	10	\$0.09	0%	0%	\$0.11	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Miscellaneous	Refrigeration	Fruit Storage Refrigeration Retrofit	sqft	Existing	0.06	10	\$1.09	0%	0%	\$2.36	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Miscellaneous	Refrigeration	Fruit Storage Refrigeration Tuneup	sqft	Existing	0.01	3	\$0.23	0%	0%	\$4.83	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Miscellaneous	Refrigeration	Fruit Storage Retrofit - CO2 Scrub	sqft	Existing	0.03	10	\$3.13	0%	0%	\$13.97	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Miscellaneous	Refrigeration	Fruit Storage Retrofit - Membrane	sqft	Existing	0.01	10	\$0.68	0%	0%	\$15.15	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Miscellaneous	Cooling	Insulation - Ceiling	sqft roof	New	0.00	45	\$1.28	15%	50%	\$0.43	0.00	0.00	Building Energy Simulation Tool

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Miscellaneous	Heating	Insulation - Ceiling	sqft roof	New	0.20	45	\$1.28	15%	50%	\$0.43	17.68	19.94	Building Energy Simulation Tool
Miscellaneous	Ventilation	Insulation - Ceiling	sqft roof	New	0.02	45	\$1.28	15%	50%	\$0.43	6.08	7.50	Building Energy Simulation Tool
Miscellaneous	Cooling	Insulation - Ducting	sqft duct	New	0.40	20	\$0.84	15%	50%	\$0.15	19.02	21.73	Building Energy Simulation Tool
Miscellaneous	Heating	Insulation - Ducting	sqft duct	New	0.08	20	\$0.84	15%	50%	\$0.15	1.65	1.86	Building Energy Simulation Tool
Miscellaneous	Ventilation	Insulation - Ducting	sqft duct	New	0.01	20	\$0.84	15%	50%	\$0.15	0.58	0.71	Building Energy Simulation Tool
Miscellaneous	Cooling	Building Shell - Cool Roofs	sqft roof	New	0.09	20	\$0.78	45%	50%	\$2.30	2.43	2.78	Building Energy Simulation Tool
Miscellaneous	Heating	Building Shell - Cool Roofs	sqft roof	New	-0.06	20	\$0.78	45%	50%	\$2.30	-0.70	-0.78	Building Energy Simulation Tool
Miscellaneous	Ventilation	Building Shell - Cool Roofs	sqft roof	New	-0.01	20	\$0.78	45%	50%	\$2.30	-0.24	-0.30	Building Energy Simulation Tool
Miscellaneous	Cooling	Insulation - Wall Cavity	sqft wall	New	0.00	45	\$0.78	15%	50%	\$0.28	-0.10	-0.12	Building Energy Simulation Tool
Miscellaneous	Heating	Insulation - Wall Cavity	sqft wall	New	0.19	45	\$0.78	15%	50%	\$0.28	5.05	5.68	Building Energy Simulation Tool
Miscellaneous	Ventilation	Insulation - Wall Cavity	sqft wall	New	0.02	45	\$0.78	15%	50%	\$0.28	1.74	2.14	Building Energy Simulation Tool
Miscellaneous	Cooling	HVAC - Duct Repair and Sealing	tonCool	New	2.37	18	\$0.57	15%	50%	\$0.01	2.41	2.78	Building Energy Simulation Tool
Miscellaneous	Heating	HVAC - Duct Repair and Sealing	tonCool	New	6.26	18	\$0.57	15%	50%	\$0.01	2.93	3.32	Building Energy Simulation Tool
Miscellaneous	Ventilation	HVAC - Duct Repair and Sealing	tonCool	New	0.72	18	\$0.57	15%	50%	\$0.01	1.01	1.26	Building Energy Simulation Tool
Miscellaneous	Cooling	Windows - High Efficiency Glazing	sqft window	New	4.99	30	\$35.93	66%	66%	\$0.17	0.00	0.00	7th Power Plan
Miscellaneous	Heating	Windows - High Efficiency Glazing	sqft window	New	11.21	30	\$35.93	66%	66%	\$0.17	0.00	0.00	7th Power Plan
Miscellaneous	Ventilation	Windows - High Efficiency Glazing	sqft window	New	0.74	30	\$35.93	66%	66%	\$0.17	0.00	0.00	7th Power Plan
Miscellaneous	Cooling	Chiller - Chilled Water Reset	ChillCtrl	New	1,177.60	10	\$884.85	15%	75%	\$0.09	0.99	1.29	AEG-BEST
Miscellaneous	Cooling	Chiller - Chilled Water Variable-Flow System	HP cool	New	119.68	15	\$332.55	15%	75%	\$0.27	17.49	22.34	AEG-BEST

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Miscellaneous	Cooling	Chiller - Variable Speed Fans	HP fan	New	280.12	15	\$208.36	15%	75%	\$0.07	4.09	5.23	New Jersey TRM
Miscellaneous	Cooling	Water-Cooled Chiller - Condenser Water Reset	ChillCtrl	New	9,363.58	10	\$884.85	15%	75%	\$0.01	2.68	3.50	AEG-BEST
Miscellaneous	Cooling	HVAC - Economizer	HP cool	New	45.29	10	\$168.42	18%	75%	\$0.45	27.99	37.16	AEG-BEST
Miscellaneous	Heating	Space Heating - Heat Recovery Ventilator	CFM	New	2.27	14	\$5.08	6%	75%	\$0.25	21.35	26.82	7th Power Plan
Miscellaneous	Ventilation	Ventilation - ECM on VAV Boxes	sqft	New	0.07	18	\$0.25	15%	20%	\$0.23	2.56	3.19	7th Power Plan
Miscellaneous	Ventilation	Ventilation - Variable Speed Control	sqft	New	0.02	15	\$181.39	19%	25%	\$655.52	0.52	0.75	AEG-BEST
Miscellaneous	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.25	15%	25%	\$5.73	0.15	0.21	7th Power Plan
Miscellaneous	Cooling	Destratification Fans (HVLS)	Strat Fan	New	2,765.90	15	\$7,270.90	15%	15%	\$0.09	0.00	0.00	AEG Research
Miscellaneous	Heating	Destratification Fans (HVLS)	Strat Fan	New	5,749.67	15	\$7,270.90	15%	15%	\$0.09	0.00	0.00	AEG Research
Miscellaneous	Cooling	RTU - Maintenance	tonCool	New	22.60	3	\$35.00	15%	45%	\$0.46	2.12	3.15	AEG Research
Miscellaneous	Cooling	RTU - Advanced Controls	sqft	New	0.14	15	\$0.07	15%	45%	\$0.05	13.42	15.96	7th Power Plan
Miscellaneous	Cooling	RTU - Evaporative Precooler	tonCool	New	45.80	15	\$681.62	15%	75%	\$1.41	59.20	67.73	AEG Research
Miscellaneous	Cooling	Ductless Mini Split Heat Pump	tonCool	New	86.76	15	\$3,359.26	15%	25%	\$1.71	1.17	1.49	7th Power Plan
Miscellaneous	Heating	Ductless Mini Split Heat Pump	tonCool	New	106.30	15	\$3,359.26	15%	25%	\$1.71	4.51	5.53	7th Power Plan
Miscellaneous	Cooling	Thermostat - WiFi/Interactive	sqft	New	0.43	5	\$0.66	30%	40%	\$0.14	2.79	3.88	7th Power Plan
Miscellaneous	Heating	Thermostat - WiFi/Interactive	sqft	New	0.46	5	\$0.66	30%	40%	\$0.14	1.37	1.83	7th Power Plan
Miscellaneous	Ventilation	Thermostat - WiFi/Interactive	sqft	New	0.05	5	\$0.66	30%	40%	\$0.14	0.47	0.76	7th Power Plan
Miscellaneous	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	New	3.69	10	\$8.35	25%	65%	\$0.15	0.18	0.38	Illinois TRM
Miscellaneous	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	New	9.54	10	\$11.64	25%	65%	\$0.08	0.24	0.49	7th Power Plan
Miscellaneous	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	New	42.89	15	\$36.75	15%	25%	\$0.05	0.48	0.72	Hawaii TRM
Miscellaneous	Water Heating	Water Heater - Pipe Insulation	PipeFeet	New	99.39	15	\$14.88	1%	75%	\$0.01	5.44	10.06	AEG-BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Miscellaneous	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	New	19.14	4	\$144.04	25%	65%	\$0.96	0.39	0.89	7th Power Plan
Miscellaneous	Water Heating	Water Heater - Thermostat Setback	WHUnits	New	42.86	2	\$5.00	15%	75%	\$0.03	0.24	0.59	Illinois TRM
Miscellaneous	Water Heating	Water Heater - Solar System	PipeFeet	New	345.75	20	\$215.28	1%	30%	\$0.03	7.62	13.97	AEG-BEST
Miscellaneous	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.27	15	\$0.35	11%	23%	\$0.10	42.04	56.81	7th Power Plan
Miscellaneous	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.37	15	\$0.58	11%	23%	\$0.11	57.86	78.58	7th Power Plan
Miscellaneous	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	New	119.06	15	\$54.41	1%	3%	\$0.03	0.64	1.04	7th Power Plan
Miscellaneous	Interior Lighting	Interior Lighting - Timeclocks and Timers	occ sens	New	0.00	8	\$111.67	7%	15%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Miscellaneous	Interior Lighting	Interior Lighting - Skylights	1000 sqft	New	0.00	15	\$1,006.35	18%	25%	\$0.00	0.00	0.00	AEG Research
Miscellaneous	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	1000 sqft	New	137.68	16	\$1,807.69	5%	15%	\$0.89	5.51	8.66	7th Power Plan
Miscellaneous	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	New	1,407.70	11	\$30.80	15%	50%	\$0.00	16.59	26.51	Illinois TRM
Miscellaneous	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	ELtg Watts	New	1.36	8	\$0.63	15%	25%	\$0.04	4.76	9.23	7th Power Plan
Miscellaneous	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	New	54.90	8	\$55.10	15%	25%	\$0.09	2.51	4.84	Pacific Gas and Electric Research
Miscellaneous	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	New	67.86	7	\$3,400.00	15%	30%	\$4.94	4.05	8.04	AEG Research
Miscellaneous	Refrigeration	Refrigeration - Anti-Sweat Heater	Fridge Feet	New	9.90	8	\$48.18	0%	0%	\$0.74	0.00	0.00	7th Power Plan
Miscellaneous	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	New	24.08	4	\$10.44	0%	0%	\$0.11	0.00	0.00	Michigan Energy Measures Database
Miscellaneous	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	New	172.43	16	\$165.20	0%	0%	\$0.10	0.00	0.00	7th Power Plan
Miscellaneous	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	New	16.33	15	\$335.85	0%	0%	\$2.13	0.00	0.00	7th Power Plan
Miscellaneous	Refrigeration	Refrigeration - Strip Curtain	Walkin Door	New	16.76	2	\$10.41	0%	0%	\$0.29	0.00	0.00	7th Power Plan
Miscellaneous	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBtuh	New	0.25	15	\$45.43	0%	0%	\$18.97	0.00	0.00	Annual Energy Outlook, 2015

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Miscellaneous	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	New	5.15	15	\$313.82	0%	0%	\$6.32	0.00	0.00	Annual Energy Outlook, 2015
Miscellaneous	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	New	114.51	10	\$506.05	0%	0%	\$0.57	0.00	0.00	Vermont TRM
Miscellaneous	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	New	7.03	6	\$45.41	0%	0%	\$1.20	0.00	0.00	7th Power Plan
Miscellaneous	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	New	0.57	8	\$3.72	0%	0%	\$0.99	0.00	0.00	7th Power Plan
Miscellaneous	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	New	127.07	5	\$45.85	0%	0%	\$0.08	0.00	0.00	Illinois TRM
Miscellaneous	Refrigeration	Grocery - ECMs for Display Cases	Fridge Case	New	29.11	16	\$165.20	0%	0%	\$0.57	0.00	0.00	7th Power Plan
Miscellaneous	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	New	1,042.53	5	\$187.94	25%	75%	\$0.04	1.12	1.49	Illinois TRM
Miscellaneous	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	New	687.30	18	\$8,526.67	25%	50%	\$0.84	4.80	6.04	7th Power Plan
Miscellaneous	Office Equipment	Office Equipment - Smart Power Strips	Smart Strip	New	11.43	4	\$41.63	10%	50%	\$0.84	1.19	1.41	7th Power Plan
Miscellaneous	Cooling	Lodging - Guest Room Controls	LodgUnit	New	127.63	15	\$260.00	0%	0%	\$0.63	0.00	0.00	AEG-BEST
Miscellaneous	Heating	Lodging - Guest Room Controls	LodgUnit	New	-93.00	15	\$260.00	0%	0%	\$0.63	0.00	0.00	AEG-BEST
Miscellaneous	Office Equipment	Data Center - Best Practice Measures	sqft	New	0.02	5	\$0.00	0%	0%	\$0.02	0.00	0.00	com-datacenters-7p_v5p.xlsx
Miscellaneous	Cooling	Data Center - Commercially Available Measures	sqft	New	0.01	8	\$0.00	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Miscellaneous	Ventilation	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Miscellaneous	Interior Lighting	Data Center - Commercially Available Measures	sqft	New	0.02	8	\$0.00	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Miscellaneous	Office Equipment	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Miscellaneous	Cooling	Data Center - Cutting Edge Measures	sqft	New	0.03	6	\$0.00	0%	0%	\$0.02	0.00	0.00	com-datacenters-7p_v5p.xlsx
Miscellaneous	Office Equipment	Data Center - Cutting Edge Measures	sqft	New	0.00	6	\$0.00	0%	0%	\$0.02	0.00	0.00	com-datacenters-7p_v5p.xlsx
Miscellaneous	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	New	306.39	18	\$4,092.80	0%	5%	\$0.90	0.71	0.89	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Miscellaneous	Miscellaneous	Pool Pump - Timer	perBldg	New	82.52	10	\$85.22	15%	75%	\$0.14	0.03	0.04	Ontario Power TRM
Miscellaneous	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	New	1,205.88	6	\$35.93	1%	3%	\$0.01	0.72	0.88	7th Power Plan
Miscellaneous	Cooling	Advanced New Construction Designs	sqft	New	0.70	25	\$4.11	10%	15%	\$0.12	21.09	24.07	AEG Research
Miscellaneous	Heating	Advanced New Construction Designs	sqft	New	0.74	25	\$4.11	10%	15%	\$0.12	10.21	11.52	AEG Research
Miscellaneous	Ventilation	Advanced New Construction Designs	sqft	New	0.09	25	\$4.11	10%	15%	\$0.12	3.57	4.43	AEG Research
Miscellaneous	Water Heating	Advanced New Construction Designs	sqft	New	0.16	25	\$4.11	10%	15%	\$0.12	3.13	4.32	AEG Research
Miscellaneous	Interior Lighting	Advanced New Construction Designs	sqft	New	0.55	25	\$4.11	10%	15%	\$0.12	18.91	23.99	AEG Research
Miscellaneous	Exterior Lighting	Advanced New Construction Designs	sqft	New	0.12	25	\$4.11	10%	15%	\$0.12	4.04	5.36	AEG Research
Miscellaneous	Cooling	Strategic Energy Management	sqft	New	0.10	3	\$0.14	16%	16%	\$0.10	0.00	0.00	AEG Research
Miscellaneous	Heating	Strategic Energy Management	sqft	New	0.11	3	\$0.14	16%	16%	\$0.10	0.00	0.00	AEG Research
Miscellaneous	Ventilation	Strategic Energy Management	sqft	New	0.01	3	\$0.14	16%	16%	\$0.10	0.00	0.00	AEG Research
Miscellaneous	Water Heating	Strategic Energy Management	sqft	New	0.02	3	\$0.14	16%	16%	\$0.10	0.00	0.00	AEG Research
Miscellaneous	Interior Lighting	Strategic Energy Management	sqft	New	0.08	3	\$0.14	16%	16%	\$0.10	0.00	0.00	AEG Research
Miscellaneous	Exterior Lighting	Strategic Energy Management	sqft	New	0.02	3	\$0.14	16%	16%	\$0.10	0.00	0.00	AEG Research
Miscellaneous	Refrigeration	Strategic Energy Management	sqft	New	0.01	3	\$0.14	16%	16%	\$0.10	0.00	0.00	AEG Research
Miscellaneous	Office Equipment	Strategic Energy Management	sqft	New	0.01	3	\$0.14	16%	16%	\$0.10	0.00	0.00	AEG Research
Miscellaneous	Cooling	Commissioning	sqft	New	0.14	3	\$0.59	10%	65%	\$0.35	4.83	7.11	AEG Research
Miscellaneous	Heating	Commissioning	sqft	New	0.16	3	\$0.59	10%	65%	\$0.35	2.41	3.34	AEG Research
Miscellaneous	Ventilation	Commissioning	sqft	New	0.02	3	\$0.59	10%	65%	\$0.35	0.84	1.39	AEG Research
Miscellaneous	Water Heating	Commissioning	sqft	New	0.01	3	\$0.59	10%	65%	\$0.35	0.25	0.59	AEG Research
Miscellaneous	Interior Lighting	Commissioning	sqft	New	0.10	3	\$0.59	10%	65%	\$0.35	3.73	7.56	AEG Research

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Miscellaneous	Exterior Lighting	Commissioning	sqft	New	0.02	3	\$0.59	10%	65%	\$0.35	0.79	1.82	AEG Research
Miscellaneous	Refrigeration	Commissioning	sqft	New	0.02	3	\$0.59	10%	65%	\$0.35	0.80	0.83	AEG Research
Miscellaneous	Cooling	Retrocommissioning	sqft	New	0.14	3	\$0.38	0%	0%	\$0.22	0.00	0.00	AEG Research
Miscellaneous	Heating	Retrocommissioning	sqft	New	0.16	3	\$0.38	0%	0%	\$0.22	0.00	0.00	AEG Research
Miscellaneous	Ventilation	Retrocommissioning	sqft	New	0.02	3	\$0.38	0%	0%	\$0.22	0.00	0.00	AEG Research
Miscellaneous	Water Heating	Retrocommissioning	sqft	New	0.01	3	\$0.38	0%	0%	\$0.22	0.00	0.00	AEG Research
Miscellaneous	Interior Lighting	Retrocommissioning	sqft	New	0.10	3	\$0.38	0%	0%	\$0.22	0.00	0.00	AEG Research
Miscellaneous	Exterior Lighting	Retrocommissioning	sqft	New	0.02	3	\$0.38	0%	0%	\$0.22	0.00	0.00	AEG Research
Miscellaneous	Refrigeration	Retrocommissioning	sqft	New	0.02	3	\$0.38	0%	0%	\$0.22	0.00	0.00	AEG Research
Miscellaneous	Interior Lighting	Fruit Storage - Lighting Controls	sqft	New	0.07	10	\$0.09	0%	0%	\$0.11	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Miscellaneous	Refrigeration	Fruit Storage Refrigeration Retrofit	sqft	New	0.05	10	\$1.09	0%	0%	\$2.70	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Miscellaneous	Refrigeration	Fruit Storage Refrigeration Tuneup	sqft	New	0.01	3	\$0.23	0%	0%	\$5.55	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Miscellaneous	Refrigeration	Fruit Storage Retrofit - CO2 Scrub	sqft	New	0.03	10	\$3.13	0%	0%	\$16.04	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Miscellaneous	Refrigeration	Fruit Storage Retrofit - Membrane	sqft	New	0.01	10	\$0.68	0%	0%	\$17.40	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx

Idaho Commercial Measures Assumptions

Table H-7 Comparison of 7th Plan and RTF Commercial Measures in Idaho

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036) (MWh @gen)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Large Office	Cooling	Air-Cooled Chiller	1 kBTU/hr	Existing	30.05	20	\$26.36	16%	at stock turnover	\$0.08	171.14	155.73	Annual Energy Outlook, 2015
Large Office	Cooling	Water-Cooled Chiller	1 kBTU/hr	Existing	44.62	25	\$12.65	10%	at stock turnover	\$0.03	156.46	142.37	Annual Energy Outlook, 2015
Large Office	Cooling	RTU	1 kBTU/hr	Existing	4.43	15	\$6.75	53%	at stock turnover	\$0.16	97.24	86.82	Annual Energy Outlook, 2015
Large Office	Cooling	Room AC	1 kBTU/hr	Existing	16.29	15	\$23.62	3%	at stock turnover	\$0.15	18.93	16.90	Annual Energy Outlook, 2015
Large Office	Cooling	Evaporative AC	11 per TR	Existing	0.00	15	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	New Buildings Institute Study, 2006
Large Office	Cooling	Air-Source Heat Pump	1 kBTU/hr	Existing	8.53	15	\$21.65	4%	at stock turnover	\$0.18	9.99	9.20	Annual Energy Outlook, 2015
Large Office	Heating	Air-Source Heat Pump	1 kBTU/hr	Existing	4.39	15	\$21.65	4%	at stock turnover	\$0.18	5.14	4.73	Annual Energy Outlook, 2015
Large Office	Cooling	Geothermal Heat Pump	1 kBTU/hr	Existing	20.72	25	\$26.36	2%	at stock turnover	\$0.07	11.57	10.73	Annual Energy Outlook, 2015
Large Office	Heating	Geothermal Heat Pump	1 kBTU/hr	Existing	14.87	25	\$26.36	2%	at stock turnover	\$0.07	8.30	7.70	Annual Energy Outlook, 2015
Large Office	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	1%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Large Office	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	20%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Large Office	Ventilation	Ventilation	1000 CFM	Existing	12,649.84	20	\$1,219.71	100%	at stock turnover	\$0.01	377.39	350.08	AEG-BEST
Large Office	Water Heating	Water Heater	65 gallons	Existing	2,404.20	13	\$3,537.01	45%	at stock turnover	\$0.17	475.60	427.22	7th Power Plan
Large Office	Interior Lighting	Screw-in	lamps	Existing	56.54	8	\$3.95	100%	at stock turnover	\$0.00	160.64	253.44	7th Power Plan
Large Office	Interior Lighting	Linear Lighting	lamps	Existing	74.15	17	\$52.83	100%	at stock turnover	\$0.05	1,570.86	1,358.26	7th Power Plan
Large Office	Interior Lighting	High-Bay Fixtures	lamps	Existing	380.38	15	\$123.86	100%	at stock turnover	\$0.03	847.94	736.28	Annual Energy Outlook, 2015
Large Office	Exterior Lighting	Screw-in	lamps	Existing	85.10	8	\$3.95	100%	at stock turnover	\$0.00	41.34	65.23	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Large Office	Exterior Lighting	Linear Lighting	lamps	Existing	102.25	17	\$52.83	100%	at stock turnover	\$0.04	163.93	141.75	7th Power Plan
Large Office	Exterior Lighting	Area Lighting	lamps	Existing	1,389.89	15	\$44.55	100%	at stock turnover	-\$0.02	1,143.36	970.44	Annual Energy Outlook, 2015
Large Office	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	Existing	1,507.00	11	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Large Office	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	Existing	605.00	15	\$0.00	14%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Large Office	Refrigeration	Glass Door Display	1 unit	Existing	767.00	15	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Large Office	Refrigeration	Open Display Case	1 unit	Existing	1,438.00	10	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Large Office	Refrigeration	Icemaker	1 unit	Existing	488.36	9	\$1,056.09	45%	at stock turnover	\$0.33	1.62	1.47	ENERGY STAR
Large Office	Refrigeration	Vending Machine	1 unit	Existing	89.99	10	\$42.81	45%	at stock turnover	\$0.06	1.83	1.66	EIA 2011-2012 Ref. Case
Large Office	Food Preparation	Oven	1 unit	Existing	16,781.28	10	\$1,067.99	66%	at stock turnover	-\$0.01	49.14	44.43	RTF Workbook
Large Office	Food Preparation	Fryer	1 unit	Existing	3,200.89	10	\$782.02	76%	at stock turnover	\$0.03	21.64	19.50	RTF Workbook
Large Office	Food Preparation	Dishwasher	1 unit	Existing	1,497.99	15	\$564.57	43%	at stock turnover	-\$0.11	5.78	5.34	ENERGY STAR
Large Office	Food Preparation	Hot Food Container	1 unit	Existing	891.28	20	\$490.95	43%	at stock turnover	\$0.05	6.31	5.83	RTF Workbook
Large Office	Food Preparation	Steamer	1 unit	Existing	73,535.33	9	\$837.45	43%	at stock turnover	-\$0.02	77.93	70.48	RTF Workbook
Large Office	Office Equipment	Desktop Computer	1 unit	Existing	137.22	5	\$0.01	100%	at stock turnover	\$0.00	874.75	734.68	7th Power Plan
Large Office	Office Equipment	Laptop	1 unit	Existing	40.95	4	\$0.01	100%	at stock turnover	\$0.00	107.29	93.38	7th Power Plan
Large Office	Office Equipment	Monitor	1 unit	Existing	34.06	5	\$0.01	100%	at stock turnover	\$0.00	54.77	46.00	7th Power Plan
Large Office	Office Equipment	Server	1 unit	Existing	82.32	4	\$0.01	100%	at stock turnover	\$0.00	81.31	71.08	AEG Research
Large Office	Office Equipment	Printer/Copier/Fax	1 unit	Existing	247.75	6	\$0.01	100%	at stock turnover	\$0.00	16.67	14.78	ENERGY STAR
Large Office	Office Equipment	POS Terminal	1 unit	Existing	137.22	5	\$0.01	40%	at stock turnover	\$0.00	6.79	5.95	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Large Office	Miscellaneous	Non-HVAC Motors	1 unit	Existing	0.00	15	\$0.00	90%	at stock turnover	\$0.00	0.00	0.00	N/A
Large Office	Miscellaneous	Pool Pump	1 unit	Existing	0.00	10	\$246.30	0%	at stock turnover	\$0.00	0.00	0.00	Southern California Edison
Large Office	Miscellaneous	Pool Heater	1 unit	Existing	0.00	15	\$3,546.07	0%	at stock turnover	\$0.00	0.00	0.00	AEG Research
Large Office	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Large Office	Cooling	Air-Cooled Chiller	1 kBTU/hr	New	29.36	20	\$26.36	16%	at stock turnover	\$0.08	235.61	216.54	Annual Energy Outlook, 2015
Large Office	Cooling	Water-Cooled Chiller	1 kBTU/hr	New	42.75	25	\$12.65	10%	at stock turnover	\$0.03	175.67	160.03	Annual Energy Outlook, 2015
Large Office	Cooling	RTU	1 kBTU/hr	New	3.82	15	\$6.75	53%	at stock turnover	\$0.19	95.31	87.05	Annual Energy Outlook, 2015
Large Office	Cooling	Room AC	1 kBTU/hr	New	14.26	15	\$23.62	3%	at stock turnover	\$0.18	18.78	17.16	Annual Energy Outlook, 2015
Large Office	Cooling	Evaporative AC	11 per TR	New	0.00	15	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	New Buildings Institute Study, 2006
Large Office	Cooling	Air-Source Heat Pump	1 kBTU/hr	New	7.36	15	\$21.65	4%	at stock turnover	\$0.20	10.31	9.64	Annual Energy Outlook, 2015
Large Office	Heating	Air-Source Heat Pump	1 kBTU/hr	New	4.21	15	\$21.65	4%	at stock turnover	\$0.20	5.89	5.51	Annual Energy Outlook, 2015
Large Office	Cooling	Geothermal Heat Pump	1 kBTU/hr	New	17.85	25	\$26.36	2%	at stock turnover	\$0.07	11.74	10.91	Annual Energy Outlook, 2015
Large Office	Heating	Geothermal Heat Pump	1 kBTU/hr	New	14.67	25	\$26.36	2%	at stock turnover	\$0.07	9.65	8.96	Annual Energy Outlook, 2015
Large Office	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	1%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Large Office	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	20%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Large Office	Ventilation	Ventilation	1000 CFM	New	10,474.94	20	\$1,219.71	100%	at stock turnover	\$0.01	431.67	404.45	AEG-BEST
Large Office	Water Heating	Water Heater	65 gallons	New	2,404.20	13	\$3,537.01	45%	at stock turnover	\$0.17	508.17	468.75	7th Power Plan
Large Office	Interior Lighting	Screw-in	lamps	New	56.81	8	\$3.95	100%	at stock turnover	\$0.00	166.67	179.04	7th Power Plan
Large Office	Interior Lighting	Linear Lighting	lamps	New	74.15	17	\$52.83	100%	at stock turnover	\$0.05	1,587.86	1,421.13	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Large Office	Interior Lighting	High-Bay Fixtures	lamps	New	368.26	15	\$123.86	100%	at stock turnover	\$0.04	929.94	833.21	Annual Energy Outlook, 2015
Large Office	Exterior Lighting	Screw-in	lamps	New	85.50	8	\$3.95	100%	at stock turnover	\$0.00	42.90	46.08	7th Power Plan
Large Office	Exterior Lighting	Linear Lighting	lamps	New	102.25	17	\$52.83	100%	at stock turnover	\$0.04	165.71	148.31	7th Power Plan
Large Office	Exterior Lighting	Area Lighting	lamps	New	1,389.89	15	\$44.55	100%	at stock turnover	-\$0.02	1,309.65	1,157.87	Annual Energy Outlook, 2015
Large Office	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	New	1,507.00	11	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Large Office	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	New	605.00	15	\$0.00	14%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Large Office	Refrigeration	Glass Door Display	1 unit	New	767.00	15	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Large Office	Refrigeration	Open Display Case	1 unit	New	1,438.00	10	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Large Office	Refrigeration	Icemaker	1 unit	New	488.36	9	\$1,056.09	45%	at stock turnover	\$0.33	4.50	4.16	ENERGY STAR
Large Office	Refrigeration	Vending Machine	1 unit	New	89.99	10	\$42.81	45%	at stock turnover	\$0.06	1.72	1.59	EIA 2011-2012 Ref. Case
Large Office	Food Preparation	Oven	1 unit	New	16,781.28	10	\$1,067.99	66%	at stock turnover	-\$0.01	51.95	48.06	RTF Workbook
Large Office	Food Preparation	Fryer	1 unit	New	3,200.89	10	\$782.02	76%	at stock turnover	\$0.03	22.03	20.32	RTF Workbook
Large Office	Food Preparation	Dishwasher	1 unit	New	1,497.99	15	\$564.57	43%	at stock turnover	-\$0.11	4.97	4.65	ENERGY STAR
Large Office	Food Preparation	Hot Food Container	1 unit	New	891.28	20	\$490.95	43%	at stock turnover	\$0.05	8.14	7.59	RTF Workbook
Large Office	Food Preparation	Steamer	1 unit	New	73,535.33	9	\$837.45	43%	at stock turnover	-\$0.02	86.32	79.75	RTF Workbook
Large Office	Office Equipment	Desktop Computer	1 unit	New	137.22	5	\$0.01	100%	at stock turnover	\$0.00	663.46	580.14	7th Power Plan
Large Office	Office Equipment	Laptop	1 unit	New	40.95	4	\$0.01	100%	at stock turnover	\$0.00	86.49	77.07	7th Power Plan
Large Office	Office Equipment	Monitor	1 unit	New	34.06	5	\$0.01	100%	at stock turnover	\$0.00	41.54	36.32	7th Power Plan
Large Office	Office Equipment	Server	1 unit	New	82.32	4	\$0.01	100%	at stock turnover	\$0.00	62.90	56.31	AEG Research

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Large Office	Office Equipment	Printer/Copier/Fax	1 unit	New	247.75	6	\$0.01	100%	at stock turnover	\$0.00	15.74	14.41	ENERGY STAR
Large Office	Office Equipment	POS Terminal	1 unit	New	137.22	5	\$0.01	40%	at stock turnover	\$0.00	5.78	5.21	7th Power Plan
Large Office	Miscellaneous	Non-HVAC Motors	1 unit	New	0.00	15	\$0.00	90%	at stock turnover	\$0.00	0.00	0.00	N/A
Large Office	Miscellaneous	Pool Pump	1 unit	New	0.00	10	\$246.30	0%	at stock turnover	\$0.00	0.00	0.00	Southern California Edison
Large Office	Miscellaneous	Pool Heater	1 unit	New	0.00	15	\$3,546.07	0%	at stock turnover	\$0.00	0.00	0.00	AEG Research
Large Office	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Small Office	Cooling	Air-Cooled Chiller	1 kBTU/hr	Existing	0.00	20	\$26.36	16%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Small Office	Cooling	Water-Cooled Chiller	1 kBTU/hr	Existing	0.00	25	\$12.65	10%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Small Office	Cooling	RTU	1 kBTU/hr	Existing	5.44	15	\$6.75	53%	at stock turnover	\$0.13	399.14	356.36	Annual Energy Outlook, 2015
Small Office	Cooling	Room AC	1 kBTU/hr	Existing	20.04	15	\$23.62	3%	at stock turnover	\$0.13	51.84	46.29	Annual Energy Outlook, 2015
Small Office	Cooling	Evaporative AC	11 per TR	Existing	0.00	15	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	New Buildings Institute Study, 2006
Small Office	Cooling	Air-Source Heat Pump	1 kBTU/hr	Existing	10.49	15	\$21.65	4%	at stock turnover	\$0.14	46.60	42.93	Annual Energy Outlook, 2015
Small Office	Heating	Air-Source Heat Pump	1 kBTU/hr	Existing	6.06	15	\$21.65	4%	at stock turnover	\$0.14	26.94	24.82	Annual Energy Outlook, 2015
Small Office	Cooling	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	2%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Small Office	Heating	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	2%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Small Office	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	1%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Small Office	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	20%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Small Office	Ventilation	Ventilation	1000 CFM	Existing	8,843.01	20	\$1,219.71	100%	at stock turnover	\$0.01	973.06	902.64	AEG-BEST
Small Office	Water Heating	Water Heater	65 gallons	Existing	2,403.84	13	\$3,537.01	45%	at stock turnover	\$0.17	1,137.34	1,021.64	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Small Office	Interior Lighting	Screw-in	lamps	Existing	59.08	8	\$3.95	100%	at stock turnover	\$0.00	430.54	680.71	7th Power Plan
Small Office	Interior Lighting	Linear Lighting	lamps	Existing	80.65	17	\$52.83	100%	at stock turnover	\$0.05	3,235.46	2,797.59	7th Power Plan
Small Office	Interior Lighting	High-Bay Fixtures	lamps	Existing	530.17	15	\$123.86	100%	at stock turnover	\$0.02	3,060.01	2,660.00	Annual Energy Outlook, 2015
Small Office	Exterior Lighting	Screw-in	lamps	Existing	96.77	8	\$3.95	100%	at stock turnover	\$0.00	184.65	291.95	7th Power Plan
Small Office	Exterior Lighting	Linear Lighting	lamps	Existing	133.38	17	\$52.83	100%	at stock turnover	\$0.03	152.62	131.96	7th Power Plan
Small Office	Exterior Lighting	Area Lighting	lamps	Existing	1,244.12	15	\$44.55	100%	at stock turnover	-\$0.02	3,266.63	2,772.58	Annual Energy Outlook, 2015
Small Office	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	Existing	1,507.00	11	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Small Office	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	Existing	605.00	15	\$0.00	14%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Small Office	Refrigeration	Glass Door Display	1 unit	Existing	767.00	15	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Small Office	Refrigeration	Open Display Case	1 unit	Existing	1,438.00	10	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Small Office	Refrigeration	Icemaker	1 unit	Existing	488.36	9	\$1,056.09	45%	at stock turnover	\$0.33	4.28	3.93	ENERGY STAR
Small Office	Refrigeration	Vending Machine	1 unit	Existing	89.99	10	\$42.81	45%	at stock turnover	\$0.06	3.14	2.87	EIA 2011-2012 Ref. Case
Small Office	Food Preparation	Oven	1 unit	Existing	16,781.28	10	\$1,067.99	66%	at stock turnover	-\$0.01	50.56	46.32	RTF Workbook
Small Office	Food Preparation	Fryer	1 unit	Existing	3,200.89	10	\$782.02	76%	at stock turnover	\$0.03	5.73	5.17	RTF Workbook
Small Office	Food Preparation	Dishwasher	1 unit	Existing	1,497.99	15	\$564.57	43%	at stock turnover	-\$0.11	16.61	15.44	ENERGY STAR
Small Office	Food Preparation	Hot Food Container	1 unit	Existing	891.28	20	\$490.95	43%	at stock turnover	\$0.05	9.97	9.23	RTF Workbook
Small Office	Food Preparation	Steamer	1 unit	Existing	73,535.33	9	\$837.45	43%	at stock turnover	-\$0.02	117.62	107.46	RTF Workbook
Small Office	Office Equipment	Desktop Computer	1 unit	Existing	137.22	5	\$0.01	100%	at stock turnover	\$0.00	1,212.56	1,018.39	7th Power Plan
Small Office	Office Equipment	Laptop	1 unit	Existing	40.95	4	\$0.01	100%	at stock turnover	\$0.00	148.72	129.45	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Small Office	Office Equipment	Monitor	1 unit	Existing	34.06	5	\$0.01	100%	at stock turnover	\$0.00	75.92	63.76	7th Power Plan
Small Office	Office Equipment	Server	1 unit	Existing	82.32	4	\$0.01	100%	at stock turnover	\$0.00	338.12	295.57	AEG Research
Small Office	Office Equipment	Printer/Copier/Fax	1 unit	Existing	247.75	6	\$0.01	100%	at stock turnover	\$0.00	34.65	30.74	ENERGY STAR
Small Office	Office Equipment	POS Terminal	1 unit	Existing	137.22	5	\$0.01	40%	at stock turnover	\$0.00	29.26	25.66	7th Power Plan
Small Office	Miscellaneous	Non-HVAC Motors	1 unit	Existing	0.00	15	\$0.00	90%	at stock turnover	\$0.00	0.00	0.00	N/A
Small Office	Miscellaneous	Pool Pump	1 unit	Existing	0.00	10	\$246.30	0%	at stock turnover	\$0.00	0.00	0.00	Southern California Edison
Small Office	Miscellaneous	Pool Heater	1 unit	Existing	0.00	15	\$3,546.07	0%	at stock turnover	\$0.00	0.00	0.00	AEG Research
Small Office	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Small Office	Cooling	Air-Cooled Chiller	1 kBTU/hr	New	0.00	20	\$26.36	16%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Small Office	Cooling	Water-Cooled Chiller	1 kBTU/hr	New	0.00	25	\$12.65	10%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Small Office	Cooling	RTU	1 kBTU/hr	New	4.47	15	\$6.75	53%	at stock turnover	\$0.16	371.40	339.19	Annual Energy Outlook, 2015
Small Office	Cooling	Room AC	1 kBTU/hr	New	17.54	15	\$23.62	3%	at stock turnover	\$0.14	51.45	46.98	Annual Energy Outlook, 2015
Small Office	Cooling	Evaporative AC	11 per TR	New	0.00	15	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	New Buildings Institute Study, 2006
Small Office	Cooling	Air-Source Heat Pump	1 kBTU/hr	New	9.06	15	\$21.65	4%	at stock turnover	\$0.16	48.07	44.97	Annual Energy Outlook, 2015
Small Office	Heating	Air-Source Heat Pump	1 kBTU/hr	New	5.81	15	\$21.65	4%	at stock turnover	\$0.16	30.86	28.87	Annual Energy Outlook, 2015
Small Office	Cooling	Geothermal Heat Pump	1 kBTU/hr	New	20.82	25	\$26.36	2%	at stock turnover	\$0.07	57.96	53.83	Annual Energy Outlook, 2015
Small Office	Heating	Geothermal Heat Pump	1 kBTU/hr	New	14.89	25	\$26.36	2%	at stock turnover	\$0.07	41.45	38.49	Annual Energy Outlook, 2015
Small Office	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	1%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Small Office	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	20%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Small Office	Ventilation	Ventilation	1000 CFM	New	8,037.96	20	\$1,219.71	100%	at stock turnover	\$0.01	1,088.23	1,019.61	AEG-BEST
Small Office	Water Heating	Water Heater	65 gallons	New	2,403.84	13	\$3,537.01	45%	at stock turnover	\$0.17	1,215.21	1,120.94	7th Power Plan
Small Office	Interior Lighting	Screw-in	lamps	New	59.01	8	\$3.95	100%	at stock turnover	\$0.00	445.98	477.34	7th Power Plan
Small Office	Interior Lighting	Linear Lighting	lamps	New	80.65	17	\$52.83	100%	at stock turnover	\$0.05	3,270.49	2,927.08	7th Power Plan
Small Office	Interior Lighting	High-Bay Fixtures	lamps	New	543.98	15	\$123.86	100%	at stock turnover	\$0.02	3,568.08	3,202.91	Annual Energy Outlook, 2015
Small Office	Exterior Lighting	Screw-in	lamps	New	96.66	8	\$3.95	100%	at stock turnover	\$0.00	191.28	204.73	7th Power Plan
Small Office	Exterior Lighting	Linear Lighting	lamps	New	133.38	17	\$52.83	100%	at stock turnover	\$0.03	154.27	138.07	7th Power Plan
Small Office	Exterior Lighting	Area Lighting	lamps	New	1,244.12	15	\$44.55	100%	at stock turnover	-\$0.02	3,741.71	3,308.08	Annual Energy Outlook, 2015
Small Office	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	New	1,507.00	11	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Small Office	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	New	605.00	15	\$0.00	14%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Small Office	Refrigeration	Glass Door Display	1 unit	New	767.00	15	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Small Office	Refrigeration	Open Display Case	1 unit	New	1,438.00	10	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Small Office	Refrigeration	Icemaker	1 unit	New	488.36	9	\$1,056.09	45%	at stock turnover	\$0.33	4.00	3.72	ENERGY STAR
Small Office	Refrigeration	Vending Machine	1 unit	New	89.99	10	\$42.81	45%	at stock turnover	\$0.06	2.04	1.90	EIA 2011-2012 Ref. Case
Small Office	Food Preparation	Oven	1 unit	New	16,781.28	10	\$1,067.99	66%	at stock turnover	-\$0.01	56.07	52.42	RTF Workbook
Small Office	Food Preparation	Fryer	1 unit	New	3,200.89	10	\$782.02	76%	at stock turnover	\$0.03	5.84	5.38	RTF Workbook
Small Office	Food Preparation	Dishwasher	1 unit	New	1,497.99	15	\$564.57	43%	at stock turnover	-\$0.11	7.76	7.29	ENERGY STAR
Small Office	Food Preparation	Hot Food Container	1 unit	New	891.28	20	\$490.95	43%	at stock turnover	\$0.05	13.75	12.90	RTF Workbook
Small Office	Food Preparation	Steamer	1 unit	New	73,535.33	9	\$837.45	43%	at stock turnover	-\$0.02	132.97	124.07	RTF Workbook

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Small Office	Office Equipment	Desktop Computer	1 unit	New	137.22	5	\$0.01	100%	at stock turnover	\$0.00	919.68	804.18	7th Power Plan
Small Office	Office Equipment	Laptop	1 unit	New	40.95	4	\$0.01	100%	at stock turnover	\$0.00	119.89	106.83	7th Power Plan
Small Office	Office Equipment	Monitor	1 unit	New	34.06	5	\$0.01	100%	at stock turnover	\$0.00	57.58	50.35	7th Power Plan
Small Office	Office Equipment	Server	1 unit	New	82.32	4	\$0.01	100%	at stock turnover	\$0.00	261.57	234.15	AEG Research
Small Office	Office Equipment	Printer/Copier/Fax	1 unit	New	247.75	6	\$0.01	100%	at stock turnover	\$0.00	32.73	29.97	ENERGY STAR
Small Office	Office Equipment	POS Terminal	1 unit	New	137.22	5	\$0.01	40%	at stock turnover	\$0.00	24.05	21.69	7th Power Plan
Small Office	Miscellaneous	Non-HVAC Motors	1 unit	New	0.00	15	\$0.00	90%	at stock turnover	\$0.00	0.00	0.00	N/A
Small Office	Miscellaneous	Pool Pump	1 unit	New	0.00	10	\$246.30	0%	at stock turnover	\$0.00	0.00	0.00	Southern California Edison
Small Office	Miscellaneous	Pool Heater	1 unit	New	0.00	15	\$3,546.07	0%	at stock turnover	\$0.00	0.00	0.00	AEG Research
Small Office	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Large Retail	Cooling	Air-Cooled Chiller	1 kBTU/hr	Existing	22.07	20	\$26.36	16%	at stock turnover	\$0.11	5.31	4.83	Annual Energy Outlook, 2015
Large Retail	Cooling	Water-Cooled Chiller	1 kBTU/hr	Existing	32.55	25	\$12.65	10%	at stock turnover	\$0.04	4.82	4.39	Annual Energy Outlook, 2015
Large Retail	Cooling	RTU	1 kBTU/hr	Existing	3.46	15	\$6.75	53%	at stock turnover	\$0.21	69.76	62.36	Annual Energy Outlook, 2015
Large Retail	Cooling	Room AC	1 kBTU/hr	Existing	12.75	15	\$23.62	3%	at stock turnover	\$0.20	11.24	10.05	Annual Energy Outlook, 2015
Large Retail	Cooling	Evaporative AC	11 per TR	Existing	0.00	15	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	New Buildings Institute Study, 2006
Large Retail	Cooling	Air-Source Heat Pump	1 kBTU/hr	Existing	6.67	15	\$21.65	4%	at stock turnover	\$0.23	3.88	3.57	Annual Energy Outlook, 2015
Large Retail	Heating	Air-Source Heat Pump	1 kBTU/hr	Existing	3.37	15	\$21.65	4%	at stock turnover	\$0.23	1.96	1.81	Annual Energy Outlook, 2015
Large Retail	Cooling	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	2%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Large Retail	Heating	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	2%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Large Retail	Heating	Electric Furnace	1 kBtu/hr	Existing	0.00	18	\$0.00	1%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Large Retail	Heating	Electric Room Heat	3.5 kBtu/hr	Existing	0.00	18	\$0.00	20%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Large Retail	Ventilation	Ventilation	1000 CFM	Existing	8,512.09	20	\$1,219.71	100%	at stock turnover	\$0.01	549.51	510.03	AEG-BEST
Large Retail	Water Heating	Water Heater	65 gallons	Existing	2,369.44	13	\$3,537.01	45%	at stock turnover	\$0.17	289.36	260.24	7th Power Plan
Large Retail	Interior Lighting	Screw-in	lamps	Existing	90.36	8	\$3.95	100%	at stock turnover	\$0.00	128.49	157.13	7th Power Plan
Large Retail	Interior Lighting	Linear Lighting	lamps	Existing	162.96	17	\$52.83	100%	at stock turnover	\$0.02	1,348.03	1,168.02	7th Power Plan
Large Retail	Interior Lighting	High-Bay Fixtures	lamps	Existing	888.62	15	\$123.86	100%	at stock turnover	\$0.01	743.05	645.45	Annual Energy Outlook, 2015
Large Retail	Exterior Lighting	Screw-in	lamps	Existing	79.79	8	\$3.95	100%	at stock turnover	\$0.00	45.91	56.15	7th Power Plan
Large Retail	Exterior Lighting	Linear Lighting	lamps	Existing	153.67	17	\$52.83	100%	at stock turnover	\$0.02	35.78	31.00	7th Power Plan
Large Retail	Exterior Lighting	Area Lighting	lamps	Existing	1,289.19	15	\$44.55	100%	at stock turnover	-\$0.02	421.10	358.28	Annual Energy Outlook, 2015
Large Retail	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	Existing	1,507.00	11	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Large Retail	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	Existing	605.00	15	\$0.00	14%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Large Retail	Refrigeration	Glass Door Display	1 unit	Existing	767.00	15	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Large Retail	Refrigeration	Open Display Case	1 unit	Existing	1,438.00	10	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Large Retail	Refrigeration	Icemaker	1 unit	Existing	488.36	9	\$1,056.09	45%	at stock turnover	\$0.33	6.64	6.05	ENERGY STAR
Large Retail	Refrigeration	Vending Machine	1 unit	Existing	89.99	10	\$42.81	45%	at stock turnover	\$0.06	2.13	1.93	EIA 2011-2012 Ref. Case
Large Retail	Food Preparation	Oven	1 unit	Existing	16,781.28	10	\$1,067.99	66%	at stock turnover	-\$0.01	18.71	16.96	RTF Workbook
Large Retail	Food Preparation	Fryer	1 unit	Existing	3,200.89	10	\$782.02	76%	at stock turnover	\$0.03	12.62	11.38	RTF Workbook
Large Retail	Food Preparation	Dishwasher	1 unit	Existing	1,497.99	15	\$564.57	43%	at stock turnover	-\$0.11	5.55	5.14	ENERGY STAR

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Large Retail	Food Preparation	Hot Food Container	1 unit	Existing	891.28	20	\$490.95	43%	at stock turnover	\$0.05	5.77	5.33	RTF Workbook
Large Retail	Food Preparation	Steamer	1 unit	Existing	73,535.33	9	\$837.45	43%	at stock turnover	-\$0.02	71.89	65.11	RTF Workbook
Large Retail	Office Equipment	Desktop Computer	1 unit	Existing	137.22	5	\$0.01	100%	at stock turnover	\$0.00	60.03	50.45	7th Power Plan
Large Retail	Office Equipment	Laptop	1 unit	Existing	40.95	4	\$0.01	100%	at stock turnover	\$0.00	7.42	6.46	7th Power Plan
Large Retail	Office Equipment	Monitor	1 unit	Existing	34.06	5	\$0.01	100%	at stock turnover	\$0.00	3.76	3.16	7th Power Plan
Large Retail	Office Equipment	Server	1 unit	Existing	82.32	4	\$0.01	100%	at stock turnover	\$0.00	7.45	6.52	AEG Research
Large Retail	Office Equipment	Printer/Copier/Fax	1 unit	Existing	247.75	6	\$0.01	100%	at stock turnover	\$0.00	1.74	1.55	ENERGY STAR
Large Retail	Office Equipment	POS Terminal	1 unit	Existing	137.22	5	\$0.01	40%	at stock turnover	\$0.00	2.07	1.82	7th Power Plan
Large Retail	Miscellaneous	Non-HVAC Motors	1 unit	Existing	0.00	15	\$0.00	90%	at stock turnover	\$0.00	0.00	0.00	N/A
Large Retail	Miscellaneous	Pool Pump	1 unit	Existing	0.00	10	\$246.30	0%	at stock turnover	\$0.00	0.00	0.00	Southern California Edison
Large Retail	Miscellaneous	Pool Heater	1 unit	Existing	0.00	15	\$3,546.07	0%	at stock turnover	\$0.00	0.00	0.00	AEG Research
Large Retail	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Large Retail	Cooling	Air-Cooled Chiller	1 kBTU/hr	New	18.99	20	\$26.36	16%	at stock turnover	\$0.13	5.98	5.50	Annual Energy Outlook, 2015
Large Retail	Cooling	Water-Cooled Chiller	1 kBTU/hr	New	28.32	25	\$12.65	10%	at stock turnover	\$0.04	4.57	4.17	Annual Energy Outlook, 2015
Large Retail	Cooling	RTU	1 kBTU/hr	New	3.37	15	\$6.75	53%	at stock turnover	\$0.21	71.28	65.12	Annual Energy Outlook, 2015
Large Retail	Cooling	Room AC	1 kBTU/hr	New	11.16	15	\$23.62	3%	at stock turnover	\$0.23	10.34	9.45	Annual Energy Outlook, 2015
Large Retail	Cooling	Evaporative AC	11 per TR	New	0.00	15	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	New Buildings Institute Study, 2006
Large Retail	Cooling	Air-Source Heat Pump	1 kBTU/hr	New	5.76	15	\$21.65	4%	at stock turnover	\$0.26	3.70	3.46	Annual Energy Outlook, 2015
Large Retail	Heating	Air-Source Heat Pump	1 kBTU/hr	New	3.23	15	\$21.65	4%	at stock turnover	\$0.26	2.08	1.94	Annual Energy Outlook, 2015

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Large Retail	Cooling	Geothermal Heat Pump	1 kBtu/hr	New	0.00	25	\$26.36	2%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Large Retail	Heating	Geothermal Heat Pump	1 kBtu/hr	New	0.00	25	\$26.36	2%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Large Retail	Heating	Electric Furnace	1 kBtu/hr	New	0.00	18	\$0.00	1%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Large Retail	Heating	Electric Room Heat	3.5 kBtu/hr	New	0.00	18	\$0.00	20%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Large Retail	Ventilation	Ventilation	1000 CFM	New	7,366.97	20	\$1,219.71	100%	at stock turnover	\$0.02	526.45	493.35	AEG-BEST
Large Retail	Water Heating	Water Heater	65 gallons	New	2,404.20	13	\$3,537.01	45%	at stock turnover	\$0.17	290.03	267.58	7th Power Plan
Large Retail	Interior Lighting	Screw-in	lamps	New	90.28	8	\$3.95	100%	at stock turnover	\$0.00	123.75	119.82	7th Power Plan
Large Retail	Interior Lighting	Linear Lighting	lamps	New	162.96	17	\$52.83	100%	at stock turnover	\$0.02	1,264.45	1,132.49	7th Power Plan
Large Retail	Interior Lighting	High-Bay Fixtures	lamps	New	890.73	15	\$123.86	100%	at stock turnover	\$0.01	782.85	701.57	Annual Energy Outlook, 2015
Large Retail	Exterior Lighting	Screw-in	lamps	New	79.71	8	\$3.95	100%	at stock turnover	\$0.00	44.22	42.82	7th Power Plan
Large Retail	Exterior Lighting	Linear Lighting	lamps	New	153.67	17	\$52.83	100%	at stock turnover	\$0.02	33.56	30.06	7th Power Plan
Large Retail	Exterior Lighting	Area Lighting	lamps	New	1,289.19	15	\$44.55	100%	at stock turnover	-\$0.02	446.90	395.38	Annual Energy Outlook, 2015
Large Retail	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	New	1,507.00	11	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Large Retail	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	New	605.00	15	\$0.00	14%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Large Retail	Refrigeration	Glass Door Display	1 unit	New	767.00	15	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Large Retail	Refrigeration	Open Display Case	1 unit	New	1,438.00	10	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Large Retail	Refrigeration	Icemaker	1 unit	New	488.36	9	\$1,056.09	45%	at stock turnover	\$0.33	4.66	4.31	ENERGY STAR
Large Retail	Refrigeration	Vending Machine	1 unit	New	89.99	10	\$42.81	45%	at stock turnover	\$0.06	1.75	1.62	EIA 2011-2012 Ref. Case
Large Retail	Food Preparation	Oven	1 unit	New	16,781.28	10	\$1,067.99	66%	at stock turnover	-\$0.01	23.44	21.71	RTF Workbook

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Large Retail	Food Preparation	Fryer	1 unit	New	3,200.89	10	\$782.02	76%	at stock turnover	\$0.03	11.86	10.95	RTF Workbook
Large Retail	Food Preparation	Dishwasher	1 unit	New	1,497.99	15	\$564.57	43%	at stock turnover	-\$0.11	4.24	3.97	ENERGY STAR
Large Retail	Food Preparation	Hot Food Container	1 unit	New	891.28	20	\$490.95	43%	at stock turnover	\$0.05	6.96	6.49	RTF Workbook
Large Retail	Food Preparation	Steamer	1 unit	New	73,535.33	9	\$837.45	43%	at stock turnover	-\$0.02	73.57	67.99	RTF Workbook
Large Retail	Office Equipment	Desktop Computer	1 unit	New	137.22	5	\$0.01	100%	at stock turnover	\$0.00	42.58	37.24	7th Power Plan
Large Retail	Office Equipment	Laptop	1 unit	New	40.95	4	\$0.01	100%	at stock turnover	\$0.00	5.55	4.94	7th Power Plan
Large Retail	Office Equipment	Monitor	1 unit	New	34.06	5	\$0.01	100%	at stock turnover	\$0.00	2.67	2.33	7th Power Plan
Large Retail	Office Equipment	Server	1 unit	New	82.32	4	\$0.01	100%	at stock turnover	\$0.00	5.30	4.75	AEG Research
Large Retail	Office Equipment	Printer/Copier/Fax	1 unit	New	247.75	6	\$0.01	100%	at stock turnover	\$0.00	1.52	1.39	ENERGY STAR
Large Retail	Office Equipment	POS Terminal	1 unit	New	137.22	5	\$0.01	40%	at stock turnover	\$0.00	1.67	1.51	7th Power Plan
Large Retail	Miscellaneous	Non-HVAC Motors	1 unit	New	0.00	15	\$0.00	90%	at stock turnover	\$0.00	0.00	0.00	N/A
Large Retail	Miscellaneous	Pool Pump	1 unit	New	0.00	10	\$246.30	0%	at stock turnover	\$0.00	0.00	0.00	Southern California Edison
Large Retail	Miscellaneous	Pool Heater	1 unit	New	0.00	15	\$3,546.07	0%	at stock turnover	\$0.00	0.00	0.00	AEG Research
Large Retail	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Small Retail	Cooling	Air-Cooled Chiller	1 kBTU/hr	Existing	0.00	20	\$26.36	16%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Small Retail	Cooling	Water-Cooled Chiller	1 kBTU/hr	Existing	0.00	25	\$12.65	10%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Small Retail	Cooling	RTU	1 kBTU/hr	Existing	3.55	15	\$6.75	53%	at stock turnover	\$0.20	221.95	198.40	Annual Energy Outlook, 2015
Small Retail	Cooling	Room AC	1 kBTU/hr	Existing	12.32	15	\$23.62	3%	at stock turnover	\$0.20	25.29	22.61	Annual Energy Outlook, 2015
Small Retail	Cooling	Evaporative AC	11 per TR	Existing	0.00	15	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	New Buildings Institute Study, 2006

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Small Retail	Cooling	Air-Source Heat Pump	1 kBtu/hr	Existing	6.84	15	\$21.65	4%	at stock turnover	\$0.22	25.82	23.80	Annual Energy Outlook, 2015
Small Retail	Heating	Air-Source Heat Pump	1 kBtu/hr	Existing	3.74	15	\$21.65	4%	at stock turnover	\$0.22	14.12	13.02	Annual Energy Outlook, 2015
Small Retail	Cooling	Geothermal Heat Pump	1 kBtu/hr	Existing	0.00	25	\$26.36	2%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Small Retail	Heating	Geothermal Heat Pump	1 kBtu/hr	Existing	0.00	25	\$26.36	2%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Small Retail	Heating	Electric Furnace	1 kBtu/hr	Existing	0.00	18	\$0.00	1%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Small Retail	Heating	Electric Room Heat	3.5 kBtu/hr	Existing	0.00	18	\$0.00	20%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Small Retail	Ventilation	Ventilation	1000 CFM	Existing	2,585.66	20	\$1,219.71	100%	at stock turnover	\$0.04	521.76	484.28	AEG-BEST
Small Retail	Water Heating	Water Heater	65 gallons	Existing	2,369.50	13	\$3,537.01	45%	at stock turnover	\$0.17	718.40	646.12	7th Power Plan
Small Retail	Interior Lighting	Screw-in	lamps	Existing	59.64	8	\$3.95	100%	at stock turnover	\$0.00	265.07	324.16	7th Power Plan
Small Retail	Interior Lighting	Linear Lighting	lamps	Existing	107.55	17	\$52.83	100%	at stock turnover	\$0.03	2,781.06	2,409.68	7th Power Plan
Small Retail	Interior Lighting	High-Bay Fixtures	lamps	Existing	586.49	15	\$123.86	100%	at stock turnover	\$0.02	1,532.95	1,331.59	Annual Energy Outlook, 2015
Small Retail	Exterior Lighting	Screw-in	lamps	Existing	79.79	8	\$3.95	100%	at stock turnover	\$0.00	143.52	175.51	7th Power Plan
Small Retail	Exterior Lighting	Linear Lighting	lamps	Existing	153.67	17	\$52.83	100%	at stock turnover	\$0.02	111.83	96.90	7th Power Plan
Small Retail	Exterior Lighting	Area Lighting	lamps	Existing	1,289.19	15	\$44.55	100%	at stock turnover	-\$0.02	1,316.28	1,119.93	Annual Energy Outlook, 2015
Small Retail	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	Existing	1,507.00	11	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Small Retail	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	Existing	605.00	15	\$0.00	14%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Small Retail	Refrigeration	Glass Door Display	1 unit	Existing	767.00	15	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Small Retail	Refrigeration	Open Display Case	1 unit	Existing	1,438.00	10	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Small Retail	Refrigeration	Icemaker	1 unit	Existing	488.36	9	\$1,056.09	45%	at stock turnover	\$0.33	3.20	2.93	ENERGY STAR

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Small Retail	Refrigeration	Vending Machine	1 unit	Existing	89.99	10	\$42.81	45%	at stock turnover	\$0.06	1.32	1.21	EIA 2011-2012 Ref. Case
Small Retail	Food Preparation	Oven	1 unit	Existing	16,781.28	10	\$1,067.99	66%	at stock turnover	-\$0.01	15.25	13.98	RTF Workbook
Small Retail	Food Preparation	Fryer	1 unit	Existing	3,200.89	10	\$782.02	76%	at stock turnover	\$0.03	3.41	3.08	RTF Workbook
Small Retail	Food Preparation	Dishwasher	1 unit	Existing	1,497.99	15	\$564.57	43%	at stock turnover	-\$0.11	10.05	9.34	ENERGY STAR
Small Retail	Food Preparation	Hot Food Container	1 unit	Existing	891.28	20	\$490.95	43%	at stock turnover	\$0.05	6.08	5.63	RTF Workbook
Small Retail	Food Preparation	Steamer	1 unit	Existing	73,535.33	9	\$837.45	43%	at stock turnover	-\$0.02	71.01	64.94	RTF Workbook
Small Retail	Office Equipment	Desktop Computer	1 unit	Existing	137.22	5	\$0.01	100%	at stock turnover	\$0.00	59.00	49.58	7th Power Plan
Small Retail	Office Equipment	Laptop	1 unit	Existing	40.95	4	\$0.01	100%	at stock turnover	\$0.00	7.29	6.35	7th Power Plan
Small Retail	Office Equipment	Monitor	1 unit	Existing	34.06	5	\$0.01	100%	at stock turnover	\$0.00	3.69	3.10	7th Power Plan
Small Retail	Office Equipment	Server	1 unit	Existing	82.32	4	\$0.01	100%	at stock turnover	\$0.00	66.62	58.26	AEG Research
Small Retail	Office Equipment	Printer/Copier/Fax	1 unit	Existing	247.75	6	\$0.01	100%	at stock turnover	\$0.00	1.37	1.22	ENERGY STAR
Small Retail	Office Equipment	POS Terminal	1 unit	Existing	137.22	5	\$0.01	40%	at stock turnover	\$0.00	27.15	23.80	7th Power Plan
Small Retail	Miscellaneous	Non-HVAC Motors	1 unit	Existing	0.00	15	\$0.00	90%	at stock turnover	\$0.00	0.00	0.00	N/A
Small Retail	Miscellaneous	Pool Pump	1 unit	Existing	0.00	10	\$246.30	0%	at stock turnover	\$0.00	0.00	0.00	Southern California Edison
Small Retail	Miscellaneous	Pool Heater	1 unit	Existing	0.00	15	\$3,546.07	0%	at stock turnover	\$0.00	0.00	0.00	AEG Research
Small Retail	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Small Retail	Cooling	Air-Cooled Chiller	1 kBTU/hr	New	0.00	20	\$26.36	16%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Small Retail	Cooling	Water-Cooled Chiller	1 kBTU/hr	New	0.00	25	\$12.65	10%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Small Retail	Cooling	RTU	1 kBTU/hr	New	3.49	15	\$6.75	53%	at stock turnover	\$0.21	229.32	209.50	Annual Energy Outlook, 2015

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Small Retail	Cooling	Room AC	1 kBTU/hr	New	10.78	15	\$23.62	3%	at stock turnover	\$0.23	23.26	21.25	Annual Energy Outlook, 2015
Small Retail	Cooling	Evaporative AC	11 per TR	New	0.00	15	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	New Buildings Institute Study, 2006
Small Retail	Cooling	Air-Source Heat Pump	1 kBTU/hr	New	5.91	15	\$21.65	4%	at stock turnover	\$0.24	24.64	23.06	Annual Energy Outlook, 2015
Small Retail	Heating	Air-Source Heat Pump	1 kBTU/hr	New	3.59	15	\$21.65	4%	at stock turnover	\$0.24	14.96	14.00	Annual Energy Outlook, 2015
Small Retail	Cooling	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	2%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Small Retail	Heating	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	2%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Small Retail	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	1%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Small Retail	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	20%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Small Retail	Ventilation	Ventilation	1000 CFM	New	2,438.86	20	\$1,219.71	100%	at stock turnover	\$0.05	544.78	510.53	AEG-BEST
Small Retail	Water Heating	Water Heater	65 gallons	New	2,404.26	13	\$3,537.01	45%	at stock turnover	\$0.17	720.06	664.34	7th Power Plan
Small Retail	Interior Lighting	Screw-in	lamps	New	59.58	8	\$3.95	100%	at stock turnover	\$0.00	255.30	247.19	7th Power Plan
Small Retail	Interior Lighting	Linear Lighting	lamps	New	107.55	17	\$52.83	100%	at stock turnover	\$0.03	2,608.63	2,336.39	7th Power Plan
Small Retail	Interior Lighting	High-Bay Fixtures	lamps	New	587.88	15	\$123.86	100%	at stock turnover	\$0.02	1,615.06	1,447.38	Annual Energy Outlook, 2015
Small Retail	Exterior Lighting	Screw-in	lamps	New	79.71	8	\$3.95	100%	at stock turnover	\$0.00	138.22	133.84	7th Power Plan
Small Retail	Exterior Lighting	Linear Lighting	lamps	New	153.67	17	\$52.83	100%	at stock turnover	\$0.02	104.90	93.95	7th Power Plan
Small Retail	Exterior Lighting	Area Lighting	lamps	New	1,289.19	15	\$44.55	100%	at stock turnover	-\$0.02	1,396.94	1,235.89	Annual Energy Outlook, 2015
Small Retail	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	New	1,507.00	11	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Small Retail	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	New	605.00	15	\$0.00	14%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Small Retail	Refrigeration	Glass Door Display	1 unit	New	767.00	15	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Small Retail	Refrigeration	Open Display Case	1 unit	New	1,438.00	10	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Small Retail	Refrigeration	Icemaker	1 unit	New	488.36	9	\$1,056.09	45%	at stock turnover	\$0.33	1.97	1.83	ENERGY STAR
Small Retail	Refrigeration	Vending Machine	1 unit	New	89.99	10	\$42.81	45%	at stock turnover	\$0.06	0.74	0.69	EIA 2011-2012 Ref. Case
Small Retail	Food Preparation	Oven	1 unit	New	16,781.28	10	\$1,067.99	66%	at stock turnover	-\$0.01	19.61	18.34	RTF Workbook
Small Retail	Food Preparation	Fryer	1 unit	New	3,200.89	10	\$782.02	76%	at stock turnover	\$0.03	3.21	2.96	RTF Workbook
Small Retail	Food Preparation	Dishwasher	1 unit	New	1,497.99	15	\$564.57	43%	at stock turnover	-\$0.11	4.27	4.01	ENERGY STAR
Small Retail	Food Preparation	Hot Food Container	1 unit	New	891.28	20	\$490.95	43%	at stock turnover	\$0.05	7.56	7.09	RTF Workbook
Small Retail	Food Preparation	Steamer	1 unit	New	73,535.33	9	\$837.45	43%	at stock turnover	-\$0.02	73.10	68.21	RTF Workbook
Small Retail	Office Equipment	Desktop Computer	1 unit	New	137.22	5	\$0.01	100%	at stock turnover	\$0.00	41.84	36.60	7th Power Plan
Small Retail	Office Equipment	Laptop	1 unit	New	40.95	4	\$0.01	100%	at stock turnover	\$0.00	5.45	4.86	7th Power Plan
Small Retail	Office Equipment	Monitor	1 unit	New	34.06	5	\$0.01	100%	at stock turnover	\$0.00	2.62	2.29	7th Power Plan
Small Retail	Office Equipment	Server	1 unit	New	82.32	4	\$0.01	100%	at stock turnover	\$0.00	47.61	42.62	AEG Research
Small Retail	Office Equipment	Printer/Copier/Fax	1 unit	New	247.75	6	\$0.01	100%	at stock turnover	\$0.00	1.19	1.09	ENERGY STAR
Small Retail	Office Equipment	POS Terminal	1 unit	New	137.22	5	\$0.01	40%	at stock turnover	\$0.00	21.90	19.75	7th Power Plan
Small Retail	Miscellaneous	Non-HVAC Motors	1 unit	New	0.00	15	\$0.00	90%	at stock turnover	\$0.00	0.00	0.00	N/A
Small Retail	Miscellaneous	Pool Pump	1 unit	New	0.00	10	\$246.30	0%	at stock turnover	\$0.00	0.00	0.00	Southern California Edison
Small Retail	Miscellaneous	Pool Heater	1 unit	New	0.00	15	\$3,546.07	0%	at stock turnover	\$0.00	0.00	0.00	AEG Research
Small Retail	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Restaurant	Cooling	Air-Cooled Chiller	1 kBTU/hr	Existing	0.00	20	\$26.36	16%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Restaurant	Cooling	Water-Cooled Chiller	1 kBTU/hr	Existing	0.00	25	\$12.65	10%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Restaurant	Cooling	RTU	1 kBTU/hr	Existing	3.12	15	\$6.75	53%	at stock turnover	\$0.23	42.68	38.16	Annual Energy Outlook, 2015
Restaurant	Cooling	Room AC	1 kBTU/hr	Existing	11.49	15	\$23.62	3%	at stock turnover	\$0.22	5.75	5.14	Annual Energy Outlook, 2015
Restaurant	Cooling	Evaporative AC	11 per TR	Existing	0.00	15	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	New Buildings Institute Study, 2006
Restaurant	Cooling	Air-Source Heat Pump	1 kBTU/hr	Existing	6.01	15	\$21.65	4%	at stock turnover	\$0.29	4.32	3.98	Annual Energy Outlook, 2015
Restaurant	Heating	Air-Source Heat Pump	1 kBTU/hr	Existing	2.05	15	\$21.65	4%	at stock turnover	\$0.29	1.47	1.35	Annual Energy Outlook, 2015
Restaurant	Cooling	Geothermal Heat Pump	1 kBTU/hr	Existing	14.61	25	\$26.36	2%	at stock turnover	\$0.11	2.93	2.72	Annual Energy Outlook, 2015
Restaurant	Heating	Geothermal Heat Pump	1 kBTU/hr	Existing	6.69	25	\$26.36	2%	at stock turnover	\$0.11	1.34	1.24	Annual Energy Outlook, 2015
Restaurant	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	1%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Restaurant	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	20%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Restaurant	Ventilation	Ventilation	1000 CFM	Existing	1,152.84	20	\$1,219.71	100%	at stock turnover	\$0.10	88.18	81.84	AEG-BEST
Restaurant	Water Heating	Water Heater	65 gallons	Existing	2,404.20	13	\$3,537.01	45%	at stock turnover	\$0.17	615.12	553.23	7th Power Plan
Restaurant	Interior Lighting	Screw-in	lamps	Existing	99.73	8	\$3.95	100%	at stock turnover	\$0.00	177.61	220.35	7th Power Plan
Restaurant	Interior Lighting	Linear Lighting	lamps	Existing	187.90	17	\$52.83	100%	at stock turnover	\$0.02	371.67	322.04	7th Power Plan
Restaurant	Interior Lighting	High-Bay Fixtures	lamps	Existing	1,563.20	15	\$123.86	100%	at stock turnover	\$0.01	679.44	596.25	Annual Energy Outlook, 2015
Restaurant	Exterior Lighting	Screw-in	lamps	Existing	83.10	8	\$3.95	100%	at stock turnover	\$0.00	30.76	38.16	7th Power Plan
Restaurant	Exterior Lighting	Linear Lighting	lamps	Existing	155.89	17	\$52.83	100%	at stock turnover	\$0.02	80.24	69.52	7th Power Plan
Restaurant	Exterior Lighting	Area Lighting	lamps	Existing	1,266.14	15	\$44.55	100%	at stock turnover	-\$0.02	449.03	382.05	Annual Energy Outlook, 2015
Restaurant	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	Existing	1,507.00	11	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Restaurant	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	Existing	605.00	15	\$0.00	14%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Restaurant	Refrigeration	Glass Door Display	1 unit	Existing	767.00	15	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Restaurant	Refrigeration	Open Display Case	1 unit	Existing	1,438.00	10	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Restaurant	Refrigeration	Icemaker	1 unit	Existing	488.36	9	\$1,056.09	45%	at stock turnover	\$0.33	54.65	49.68	ENERGY STAR
Restaurant	Refrigeration	Vending Machine	1 unit	Existing	89.99	10	\$42.81	45%	at stock turnover	\$0.06	14.78	13.37	EIA 2011-2012 Ref. Case
Restaurant	Food Preparation	Oven	1 unit	Existing	16,781.28	10	\$1,067.99	66%	at stock turnover	-\$0.01	115.24	104.80	RTF Workbook
Restaurant	Food Preparation	Fryer	1 unit	Existing	3,200.89	10	\$782.02	76%	at stock turnover	\$0.03	253.23	228.39	RTF Workbook
Restaurant	Food Preparation	Dishwasher	1 unit	Existing	1,497.99	15	\$564.57	43%	at stock turnover	-\$0.11	35.80	33.08	ENERGY STAR
Restaurant	Food Preparation	Hot Food Container	1 unit	Existing	891.28	20	\$490.95	43%	at stock turnover	\$0.05	62.18	57.43	RTF Workbook
Restaurant	Food Preparation	Steamer	1 unit	Existing	73,535.33	9	\$837.45	43%	at stock turnover	-\$0.02	208.79	189.80	RTF Workbook
Restaurant	Office Equipment	Desktop Computer	1 unit	Existing	137.22	5	\$0.01	100%	at stock turnover	\$0.00	26.22	22.04	7th Power Plan
Restaurant	Office Equipment	Laptop	1 unit	Existing	40.95	4	\$0.01	100%	at stock turnover	\$0.00	2.59	2.26	7th Power Plan
Restaurant	Office Equipment	Monitor	1 unit	Existing	34.06	5	\$0.01	100%	at stock turnover	\$0.00	1.64	1.38	7th Power Plan
Restaurant	Office Equipment	Server	1 unit	Existing	82.32	4	\$0.01	100%	at stock turnover	\$0.00	19.82	17.39	AEG Research
Restaurant	Office Equipment	Printer/Copier/Fax	1 unit	Existing	247.75	6	\$0.01	100%	at stock turnover	\$0.00	1.22	1.08	ENERGY STAR
Restaurant	Office Equipment	POS Terminal	1 unit	Existing	137.22	5	\$0.01	40%	at stock turnover	\$0.00	12.07	10.58	7th Power Plan
Restaurant	Miscellaneous	Non-HVAC Motors	1 unit	Existing	0.00	15	\$0.00	90%	at stock turnover	\$0.00	0.00	0.00	N/A
Restaurant	Miscellaneous	Pool Pump	1 unit	Existing	0.00	10	\$246.30	0%	at stock turnover	\$0.00	0.00	0.00	Southern California Edison
Restaurant	Miscellaneous	Pool Heater	1 unit	Existing	0.00	15	\$3,546.07	0%	at stock turnover	\$0.00	0.00	0.00	AEG Research

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Restaurant	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Restaurant	Cooling	Air-Cooled Chiller	1 kBTU/hr	New	0.00	20	\$26.36	16%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Restaurant	Cooling	Water-Cooled Chiller	1 kBTU/hr	New	0.00	25	\$12.65	10%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Restaurant	Cooling	RTU	1 kBTU/hr	New	3.03	15	\$6.75	53%	at stock turnover	\$0.24	43.57	39.80	Annual Energy Outlook, 2015
Restaurant	Cooling	Room AC	1 kBTU/hr	New	10.06	15	\$23.62	3%	at stock turnover	\$0.25	5.29	4.83	Annual Energy Outlook, 2015
Restaurant	Cooling	Evaporative AC	11 per TR	New	0.00	15	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	New Buildings Institute Study, 2006
Restaurant	Cooling	Air-Source Heat Pump	1 kBTU/hr	New	5.84	15	\$21.65	4%	at stock turnover	\$0.30	4.63	4.33	Annual Energy Outlook, 2015
Restaurant	Heating	Air-Source Heat Pump	1 kBTU/hr	New	1.97	15	\$21.65	4%	at stock turnover	\$0.30	1.56	1.46	Annual Energy Outlook, 2015
Restaurant	Cooling	Geothermal Heat Pump	1 kBTU/hr	New	14.19	25	\$26.36	2%	at stock turnover	\$0.11	3.11	2.89	Annual Energy Outlook, 2015
Restaurant	Heating	Geothermal Heat Pump	1 kBTU/hr	New	6.54	25	\$26.36	2%	at stock turnover	\$0.11	1.43	1.33	Annual Energy Outlook, 2015
Restaurant	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	1%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Restaurant	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	20%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Restaurant	Ventilation	Ventilation	1000 CFM	New	973.15	20	\$1,219.71	100%	at stock turnover	\$0.12	65.31	61.20	AEG-BEST
Restaurant	Water Heating	Water Heater	65 gallons	New	2,404.20	13	\$3,537.01	45%	at stock turnover	\$0.17	607.63	560.61	7th Power Plan
Restaurant	Interior Lighting	Screw-in	lamps	New	101.22	8	\$3.95	100%	at stock turnover	\$0.00	171.10	166.66	7th Power Plan
Restaurant	Interior Lighting	Linear Lighting	lamps	New	187.90	17	\$52.83	100%	at stock turnover	\$0.02	348.63	312.25	7th Power Plan
Restaurant	Interior Lighting	High-Bay Fixtures	lamps	New	1,563.20	15	\$123.86	100%	at stock turnover	\$0.01	714.17	644.38	Annual Energy Outlook, 2015
Restaurant	Exterior Lighting	Screw-in	lamps	New	84.34	8	\$3.95	100%	at stock turnover	\$0.00	29.63	28.87	7th Power Plan
Restaurant	Exterior Lighting	Linear Lighting	lamps	New	155.89	17	\$52.83	100%	at stock turnover	\$0.02	75.26	67.41	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Restaurant	Exterior Lighting	Area Lighting	lamps	New	1,266.14	15	\$44.55	100%	at stock turnover	-\$0.02	476.55	421.60	Annual Energy Outlook, 2015
Restaurant	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	New	1,507.00	11	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Restaurant	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	New	605.00	15	\$0.00	14%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Restaurant	Refrigeration	Glass Door Display	1 unit	New	767.00	15	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Restaurant	Refrigeration	Open Display Case	1 unit	New	1,438.00	10	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Restaurant	Refrigeration	Icemaker	1 unit	New	488.36	9	\$1,056.09	45%	at stock turnover	\$0.33	36.23	33.50	ENERGY STAR
Restaurant	Refrigeration	Vending Machine	1 unit	New	89.99	10	\$42.81	45%	at stock turnover	\$0.06	18.55	17.13	EIA 2011-2012 Ref. Case
Restaurant	Food Preparation	Oven	1 unit	New	16,781.28	10	\$1,067.99	66%	at stock turnover	-\$0.01	102.17	94.87	RTF Workbook
Restaurant	Food Preparation	Fryer	1 unit	New	3,200.89	10	\$782.02	76%	at stock turnover	\$0.03	237.98	219.61	RTF Workbook
Restaurant	Food Preparation	Dishwasher	1 unit	New	1,497.99	15	\$564.57	43%	at stock turnover	-\$0.11	29.37	27.49	ENERGY STAR
Restaurant	Food Preparation	Hot Food Container	1 unit	New	891.28	20	\$490.95	43%	at stock turnover	\$0.05	70.65	65.84	RTF Workbook
Restaurant	Food Preparation	Steamer	1 unit	New	73,535.33	9	\$837.45	43%	at stock turnover	-\$0.02	219.02	203.13	RTF Workbook
Restaurant	Office Equipment	Desktop Computer	1 unit	New	137.22	5	\$0.01	100%	at stock turnover	\$0.00	18.60	16.27	7th Power Plan
Restaurant	Office Equipment	Laptop	1 unit	New	40.95	4	\$0.01	100%	at stock turnover	\$0.00	1.94	1.73	7th Power Plan
Restaurant	Office Equipment	Monitor	1 unit	New	34.06	5	\$0.01	100%	at stock turnover	\$0.00	1.16	1.02	7th Power Plan
Restaurant	Office Equipment	Server	1 unit	New	82.32	4	\$0.01	100%	at stock turnover	\$0.00	13.80	12.41	AEG Research
Restaurant	Office Equipment	Printer/Copier/Fax	1 unit	New	247.75	6	\$0.01	100%	at stock turnover	\$0.00	1.06	0.97	ENERGY STAR
Restaurant	Office Equipment	POS Terminal	1 unit	New	137.22	5	\$0.01	40%	at stock turnover	\$0.00	9.73	8.78	7th Power Plan
Restaurant	Miscellaneous	Non-HVAC Motors	1 unit	New	0.00	15	\$0.00	90%	at stock turnover	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Restaurant	Miscellaneous	Pool Pump	1 unit	New	0.00	10	\$246.30	0%	at stock turnover	\$0.00	0.00	0.00	Southern California Edison
Restaurant	Miscellaneous	Pool Heater	1 unit	New	0.00	15	\$3,546.07	0%	at stock turnover	\$0.00	0.00	0.00	AEG Research
Restaurant	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Grocery	Cooling	Air-Cooled Chiller	1 kBTU/hr	Existing	38.38	20	\$26.36	16%	at stock turnover	\$0.06	1.65	1.50	Annual Energy Outlook, 2015
Grocery	Cooling	Water-Cooled Chiller	1 kBTU/hr	Existing	56.61	25	\$12.65	10%	at stock turnover	\$0.02	1.50	1.37	Annual Energy Outlook, 2015
Grocery	Cooling	RTU	1 kBTU/hr	Existing	6.02	15	\$6.75	53%	at stock turnover	\$0.12	42.72	38.14	Annual Energy Outlook, 2015
Grocery	Cooling	Room AC	1 kBTU/hr	Existing	22.18	15	\$23.62	3%	at stock turnover	\$0.11	4.70	4.19	Annual Energy Outlook, 2015
Grocery	Cooling	Evaporative AC	11 per TR	Existing	0.00	15	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	New Buildings Institute Study, 2006
Grocery	Cooling	Air-Source Heat Pump	1 kBTU/hr	Existing	10.76	15	\$21.65	4%	at stock turnover	\$0.16	3.20	2.95	Annual Energy Outlook, 2015
Grocery	Heating	Air-Source Heat Pump	1 kBTU/hr	Existing	3.25	15	\$21.65	4%	at stock turnover	\$0.16	0.97	0.89	Annual Energy Outlook, 2015
Grocery	Cooling	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	2%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Grocery	Heating	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	2%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Grocery	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	1%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Grocery	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	20%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Grocery	Ventilation	Ventilation	1000 CFM	Existing	11,837.14	20	\$1,219.71	100%	at stock turnover	\$0.01	155.97	144.68	AEG-BEST
Grocery	Water Heating	Water Heater	65 gallons	Existing	2,404.20	13	\$3,537.01	45%	at stock turnover	\$0.17	266.23	239.15	7th Power Plan
Grocery	Interior Lighting	Screw-in	lamps	Existing	126.06	8	\$3.95	100%	at stock turnover	\$0.00	42.33	51.34	7th Power Plan
Grocery	Interior Lighting	Linear Lighting	lamps	Existing	231.35	17	\$52.83	100%	at stock turnover	\$0.02	910.90	787.62	7th Power Plan
Grocery	Interior Lighting	High-Bay Fixtures	lamps	Existing	1,198.35	15	\$123.86	100%	at stock turnover	\$0.01	290.65	251.96	Annual Energy Outlook, 2015

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Grocery	Exterior Lighting	Screw-in	lamps	Existing	78.07	8	\$3.95	100%	at stock turnover	\$0.00	24.57	29.80	7th Power Plan
Grocery	Exterior Lighting	Linear Lighting	lamps	Existing	151.13	17	\$52.83	100%	at stock turnover	\$0.02	69.20	59.84	7th Power Plan
Grocery	Exterior Lighting	Area Lighting	lamps	Existing	1,247.83	15	\$44.55	100%	at stock turnover	-\$0.02	320.30	271.86	Annual Energy Outlook, 2015
Grocery	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	Existing	1,507.00	11	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Grocery	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	Existing	605.00	15	\$0.00	14%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Grocery	Refrigeration	Glass Door Display	1 unit	Existing	767.00	15	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Grocery	Refrigeration	Open Display Case	1 unit	Existing	1,438.00	10	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Grocery	Refrigeration	Icemaker	1 unit	Existing	488.36	9	\$1,056.09	45%	at stock turnover	\$0.33	10.64	9.66	ENERGY STAR
Grocery	Refrigeration	Vending Machine	1 unit	Existing	89.99	10	\$42.81	45%	at stock turnover	\$0.06	4.36	3.93	EIA 2011-2012 Ref. Case
Grocery	Food Preparation	Oven	1 unit	Existing	16,781.28	10	\$1,067.99	66%	at stock turnover	-\$0.01	6.46	5.89	RTF Workbook
Grocery	Food Preparation	Fryer	1 unit	Existing	3,200.89	10	\$782.02	76%	at stock turnover	\$0.03	38.93	35.08	RTF Workbook
Grocery	Food Preparation	Dishwasher	1 unit	Existing	1,497.99	15	\$564.57	43%	at stock turnover	-\$0.11	10.49	9.69	ENERGY STAR
Grocery	Food Preparation	Hot Food Container	1 unit	Existing	891.28	20	\$490.95	43%	at stock turnover	\$0.05	15.91	14.69	RTF Workbook
Grocery	Food Preparation	Steamer	1 unit	Existing	73,535.33	9	\$837.45	43%	at stock turnover	-\$0.02	68.59	62.28	RTF Workbook
Grocery	Office Equipment	Desktop Computer	1 unit	Existing	137.22	5	\$0.01	100%	at stock turnover	\$0.00	13.06	10.97	7th Power Plan
Grocery	Office Equipment	Laptop	1 unit	Existing	40.95	4	\$0.01	100%	at stock turnover	\$0.00	1.06	0.93	7th Power Plan
Grocery	Office Equipment	Monitor	1 unit	Existing	34.06	5	\$0.01	100%	at stock turnover	\$0.00	0.82	0.69	7th Power Plan
Grocery	Office Equipment	Server	1 unit	Existing	82.32	4	\$0.01	100%	at stock turnover	\$0.00	7.28	6.37	AEG Research
Grocery	Office Equipment	Printer/Copier/Fax	1 unit	Existing	247.75	6	\$0.01	100%	at stock turnover	\$0.00	0.30	0.26	ENERGY STAR

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Grocery	Office Equipment	POS Terminal	1 unit	Existing	137.22	5	\$0.01	40%	at stock turnover	\$0.00	7.44	6.52	7th Power Plan
Grocery	Miscellaneous	Non-HVAC Motors	1 unit	Existing	0.00	15	\$0.00	90%	at stock turnover	\$0.00	0.00	0.00	N/A
Grocery	Miscellaneous	Pool Pump	1 unit	Existing	0.00	10	\$246.30	0%	at stock turnover	\$0.00	0.00	0.00	Southern California Edison
Grocery	Miscellaneous	Pool Heater	1 unit	Existing	0.00	15	\$3,546.07	0%	at stock turnover	\$0.00	0.00	0.00	AEG Research
Grocery	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Grocery	Cooling	Air-Cooled Chiller	1 kBTU/hr	New	33.03	20	\$26.36	16%	at stock turnover	\$0.07	2.00	1.84	Annual Energy Outlook, 2015
Grocery	Cooling	Water-Cooled Chiller	1 kBTU/hr	New	49.26	25	\$12.65	10%	at stock turnover	\$0.02	1.53	1.39	Annual Energy Outlook, 2015
Grocery	Cooling	RTU	1 kBTU/hr	New	6.62	15	\$6.75	53%	at stock turnover	\$0.11	53.22	48.60	Annual Energy Outlook, 2015
Grocery	Cooling	Room AC	1 kBTU/hr	New	19.40	15	\$23.62	3%	at stock turnover	\$0.13	4.66	4.26	Annual Energy Outlook, 2015
Grocery	Cooling	Evaporative AC	11 per TR	New	0.00	15	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	New Buildings Institute Study, 2006
Grocery	Cooling	Air-Source Heat Pump	1 kBTU/hr	New	9.30	15	\$21.65	4%	at stock turnover	\$0.19	3.31	3.09	Annual Energy Outlook, 2015
Grocery	Heating	Air-Source Heat Pump	1 kBTU/hr	New	3.12	15	\$21.65	4%	at stock turnover	\$0.19	1.11	1.04	Annual Energy Outlook, 2015
Grocery	Cooling	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	2%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Grocery	Heating	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	2%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Grocery	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	1%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Grocery	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	20%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Grocery	Ventilation	Ventilation	1000 CFM	New	10,244.72	20	\$1,219.71	100%	at stock turnover	\$0.01	130.29	122.07	AEG-BEST
Grocery	Water Heating	Water Heater	65 gallons	New	2,404.20	13	\$3,537.01	45%	at stock turnover	\$0.17	284.46	262.39	7th Power Plan
Grocery	Interior Lighting	Screw-in	lamps	New	128.67	8	\$3.95	100%	at stock turnover	\$0.00	44.07	42.93	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Grocery	Interior Lighting	Linear Lighting	lamps	New	231.35	17	\$52.83	100%	at stock turnover	\$0.02	920.76	824.08	7th Power Plan
Grocery	Interior Lighting	High-Bay Fixtures	lamps	New	1,201.82	15	\$123.86	100%	at stock turnover	\$0.01	329.62	295.20	Annual Energy Outlook, 2015
Grocery	Exterior Lighting	Screw-in	lamps	New	79.69	8	\$3.95	100%	at stock turnover	\$0.00	25.57	24.91	7th Power Plan
Grocery	Exterior Lighting	Linear Lighting	lamps	New	151.13	17	\$52.83	100%	at stock turnover	\$0.02	69.95	62.60	7th Power Plan
Grocery	Exterior Lighting	Area Lighting	lamps	New	1,247.83	15	\$44.55	100%	at stock turnover	-\$0.02	366.89	324.37	Annual Energy Outlook, 2015
Grocery	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	New	1,507.00	11	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Grocery	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	New	605.00	15	\$0.00	14%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Grocery	Refrigeration	Glass Door Display	1 unit	New	767.00	15	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Grocery	Refrigeration	Open Display Case	1 unit	New	1,438.00	10	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Grocery	Refrigeration	Icemaker	1 unit	New	488.36	9	\$1,056.09	45%	at stock turnover	\$0.33	11.15	10.31	ENERGY STAR
Grocery	Refrigeration	Vending Machine	1 unit	New	89.99	10	\$42.81	45%	at stock turnover	\$0.06	4.27	3.95	EIA 2011-2012 Ref. Case
Grocery	Food Preparation	Oven	1 unit	New	16,781.28	10	\$1,067.99	66%	at stock turnover	-\$0.01	23.76	22.11	RTF Workbook
Grocery	Food Preparation	Fryer	1 unit	New	3,200.89	10	\$782.02	76%	at stock turnover	\$0.03	39.63	36.57	RTF Workbook
Grocery	Food Preparation	Dishwasher	1 unit	New	1,497.99	15	\$564.57	43%	at stock turnover	-\$0.11	9.55	8.93	ENERGY STAR
Grocery	Food Preparation	Hot Food Container	1 unit	New	891.28	20	\$490.95	43%	at stock turnover	\$0.05	19.66	18.32	RTF Workbook
Grocery	Food Preparation	Steamer	1 unit	New	73,535.33	9	\$837.45	43%	at stock turnover	-\$0.02	78.73	72.94	RTF Workbook
Grocery	Office Equipment	Desktop Computer	1 unit	New	137.22	5	\$0.01	100%	at stock turnover	\$0.00	9.91	8.66	7th Power Plan
Grocery	Office Equipment	Laptop	1 unit	New	40.95	4	\$0.01	100%	at stock turnover	\$0.00	0.87	0.77	7th Power Plan
Grocery	Office Equipment	Monitor	1 unit	New	34.06	5	\$0.01	100%	at stock turnover	\$0.00	0.62	0.54	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Grocery	Office Equipment	Server	1 unit	New	82.32	4	\$0.01	100%	at stock turnover	\$0.00	5.64	5.04	AEG Research
Grocery	Office Equipment	Printer/Copier/Fax	1 unit	New	247.75	6	\$0.01	100%	at stock turnover	\$0.00	0.28	0.26	ENERGY STAR
Grocery	Office Equipment	POS Terminal	1 unit	New	137.22	5	\$0.01	40%	at stock turnover	\$0.00	6.48	5.84	7th Power Plan
Grocery	Miscellaneous	Non-HVAC Motors	1 unit	New	0.00	15	\$0.00	90%	at stock turnover	\$0.00	0.00	0.00	N/A
Grocery	Miscellaneous	Pool Pump	1 unit	New	0.00	10	\$246.30	0%	at stock turnover	\$0.00	0.00	0.00	Southern California Edison
Grocery	Miscellaneous	Pool Heater	1 unit	New	0.00	15	\$3,546.07	0%	at stock turnover	\$0.00	0.00	0.00	AEG Research
Grocery	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Health	Cooling	Air-Cooled Chiller	1 kBTU/hr	Existing	41.78	20	\$26.36	16%	at stock turnover	\$0.06	87.75	79.83	Annual Energy Outlook, 2015
Health	Cooling	Water-Cooled Chiller	1 kBTU/hr	Existing	68.91	25	\$12.65	10%	at stock turnover	\$0.02	579.02	526.77	Annual Energy Outlook, 2015
Health	Cooling	RTU	1 kBTU/hr	Existing	5.68	15	\$6.75	53%	at stock turnover	\$0.13	9.33	8.33	Annual Energy Outlook, 2015
Health	Cooling	Room AC	1 kBTU/hr	Existing	20.92	15	\$23.62	3%	at stock turnover	\$0.12	1.21	1.08	Annual Energy Outlook, 2015
Health	Cooling	Evaporative AC	11 per TR	Existing	0.00	15	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	New Buildings Institute Study, 2006
Health	Cooling	Air-Source Heat Pump	1 kBTU/hr	Existing	10.92	15	\$21.65	4%	at stock turnover	\$0.12	1.91	1.76	Annual Energy Outlook, 2015
Health	Heating	Air-Source Heat Pump	1 kBTU/hr	Existing	8.24	15	\$21.65	4%	at stock turnover	\$0.12	1.44	1.32	Annual Energy Outlook, 2015
Health	Cooling	Geothermal Heat Pump	1 kBTU/hr	Existing	26.51	25	\$26.36	2%	at stock turnover	\$0.05	1.92	1.78	Annual Energy Outlook, 2015
Health	Heating	Geothermal Heat Pump	1 kBTU/hr	Existing	25.98	25	\$26.36	2%	at stock turnover	\$0.05	1.88	1.75	Annual Energy Outlook, 2015
Health	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	1%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Health	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	20%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Health	Ventilation	Ventilation	1000 CFM	Existing	9,409.94	20	\$1,219.71	100%	at stock turnover	\$0.01	207.14	192.11	AEG-BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Health	Water Heating	Water Heater	65 gallons	Existing	2,404.19	13	\$3,537.01	45%	at stock turnover	\$0.17	294.53	264.45	7th Power Plan
Health	Interior Lighting	Screw-in	lamps	Existing	117.98	8	\$3.95	100%	at stock turnover	\$0.00	113.67	143.41	7th Power Plan
Health	Interior Lighting	Linear Lighting	lamps	Existing	198.58	17	\$52.83	100%	at stock turnover	\$0.02	1,052.54	909.46	7th Power Plan
Health	Interior Lighting	High-Bay Fixtures	lamps	Existing	1,171.30	15	\$123.86	100%	at stock turnover	\$0.01	599.38	520.04	Annual Energy Outlook, 2015
Health	Exterior Lighting	Screw-in	lamps	Existing	83.44	8	\$3.95	100%	at stock turnover	\$0.00	7.05	8.90	7th Power Plan
Health	Exterior Lighting	Linear Lighting	lamps	Existing	150.27	17	\$52.83	100%	at stock turnover	\$0.02	21.21	18.33	7th Power Plan
Health	Exterior Lighting	Area Lighting	lamps	Existing	1,240.46	15	\$44.55	100%	at stock turnover	-\$0.02	168.64	143.02	Annual Energy Outlook, 2015
Health	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	Existing	1,507.00	11	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Health	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	Existing	605.00	15	\$0.00	14%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Health	Refrigeration	Glass Door Display	1 unit	Existing	767.00	15	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Health	Refrigeration	Open Display Case	1 unit	Existing	1,438.00	10	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Health	Refrigeration	Icemaker	1 unit	Existing	488.36	9	\$1,056.09	45%	at stock turnover	\$0.33	2.27	2.06	ENERGY STAR
Health	Refrigeration	Vending Machine	1 unit	Existing	89.99	10	\$42.81	45%	at stock turnover	\$0.06	1.66	1.50	EIA 2011-2012 Ref. Case
Health	Food Preparation	Oven	1 unit	Existing	16,781.28	10	\$1,067.99	66%	at stock turnover	-\$0.01	44.18	39.93	RTF Workbook
Health	Food Preparation	Fryer	1 unit	Existing	3,200.89	10	\$782.02	76%	at stock turnover	\$0.03	41.99	37.82	RTF Workbook
Health	Food Preparation	Dishwasher	1 unit	Existing	1,497.99	15	\$564.57	43%	at stock turnover	-\$0.11	11.96	11.05	ENERGY STAR
Health	Food Preparation	Hot Food Container	1 unit	Existing	891.28	20	\$490.95	43%	at stock turnover	\$0.05	14.01	12.94	RTF Workbook
Health	Food Preparation	Steamer	1 unit	Existing	73,535.33	9	\$837.45	43%	at stock turnover	-\$0.02	171.64	155.01	RTF Workbook
Health	Office Equipment	Desktop Computer	1 unit	Existing	137.22	5	\$0.01	100%	at stock turnover	\$0.00	52.85	44.38	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Health	Office Equipment	Laptop	1 unit	Existing	40.95	4	\$0.01	100%	at stock turnover	\$0.00	2.59	2.25	7th Power Plan
Health	Office Equipment	Monitor	1 unit	Existing	34.06	5	\$0.01	100%	at stock turnover	\$0.00	3.31	2.78	7th Power Plan
Health	Office Equipment	Server	1 unit	Existing	82.32	4	\$0.01	100%	at stock turnover	\$0.00	5.87	5.13	AEG Research
Health	Office Equipment	Printer/Copier/Fax	1 unit	Existing	247.75	6	\$0.01	100%	at stock turnover	\$0.00	1.20	1.07	ENERGY STAR
Health	Office Equipment	POS Terminal	1 unit	Existing	137.22	5	\$0.01	40%	at stock turnover	\$0.00	6.00	5.25	7th Power Plan
Health	Miscellaneous	Non-HVAC Motors	1 unit	Existing	0.00	15	\$0.00	90%	at stock turnover	\$0.00	0.00	0.00	N/A
Health	Miscellaneous	Pool Pump	1 unit	Existing	0.00	10	\$246.30	0%	at stock turnover	\$0.00	0.00	0.00	Southern California Edison
Health	Miscellaneous	Pool Heater	1 unit	Existing	0.00	15	\$3,546.07	0%	at stock turnover	\$0.00	0.00	0.00	AEG Research
Health	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Health	Cooling	Air-Cooled Chiller	1 kBTU/hr	New	31.41	20	\$26.36	16%	at stock turnover	\$0.08	95.21	87.50	Annual Energy Outlook, 2015
Health	Cooling	Water-Cooled Chiller	1 kBTU/hr	New	52.49	25	\$12.65	10%	at stock turnover	\$0.02	529.04	481.90	Annual Energy Outlook, 2015
Health	Cooling	RTU	1 kBTU/hr	New	6.30	15	\$6.75	53%	at stock turnover	\$0.11	12.02	10.98	Annual Energy Outlook, 2015
Health	Cooling	Room AC	1 kBTU/hr	New	18.31	15	\$23.62	3%	at stock turnover	\$0.14	1.23	1.12	Annual Energy Outlook, 2015
Health	Cooling	Evaporative AC	11 per TR	New	0.00	15	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	New Buildings Institute Study, 2006
Health	Cooling	Air-Source Heat Pump	1 kBTU/hr	New	9.43	15	\$21.65	4%	at stock turnover	\$0.13	2.02	1.89	Annual Energy Outlook, 2015
Health	Heating	Air-Source Heat Pump	1 kBTU/hr	New	7.91	15	\$21.65	4%	at stock turnover	\$0.13	1.69	1.58	Annual Energy Outlook, 2015
Health	Cooling	Geothermal Heat Pump	1 kBTU/hr	New	29.50	25	\$26.36	2%	at stock turnover	\$0.05	2.58	2.40	Annual Energy Outlook, 2015
Health	Heating	Geothermal Heat Pump	1 kBTU/hr	New	14.87	25	\$26.36	2%	at stock turnover	\$0.05	1.30	1.21	Annual Energy Outlook, 2015
Health	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	1%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Health	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	20%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Health	Ventilation	Ventilation	1000 CFM	New	8,144.04	20	\$1,219.71	100%	at stock turnover	\$0.01	318.47	298.36	AEG-BEST
Health	Water Heating	Water Heater	65 gallons	New	2,404.19	13	\$3,537.01	45%	at stock turnover	\$0.17	322.78	297.72	7th Power Plan
Health	Interior Lighting	Screw-in	lamps	New	117.47	8	\$3.95	100%	at stock turnover	\$0.00	120.57	117.46	7th Power Plan
Health	Interior Lighting	Linear Lighting	lamps	New	198.58	17	\$52.83	100%	at stock turnover	\$0.02	1,089.89	975.21	7th Power Plan
Health	Interior Lighting	High-Bay Fixtures	lamps	New	1,198.46	15	\$123.86	100%	at stock turnover	\$0.01	711.72	638.17	Annual Energy Outlook, 2015
Health	Exterior Lighting	Screw-in	lamps	New	83.08	8	\$3.95	100%	at stock turnover	\$0.00	7.48	7.29	7th Power Plan
Health	Exterior Lighting	Linear Lighting	lamps	New	150.27	17	\$52.83	100%	at stock turnover	\$0.02	21.96	19.65	7th Power Plan
Health	Exterior Lighting	Area Lighting	lamps	New	1,240.46	15	\$44.55	100%	at stock turnover	-\$0.02	197.98	174.99	Annual Energy Outlook, 2015
Health	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	New	1,507.00	11	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Health	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	New	605.00	15	\$0.00	14%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Health	Refrigeration	Glass Door Display	1 unit	New	767.00	15	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Health	Refrigeration	Open Display Case	1 unit	New	1,438.00	10	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Health	Refrigeration	Icemaker	1 unit	New	488.36	9	\$1,056.09	45%	at stock turnover	\$0.33	3.25	3.00	ENERGY STAR
Health	Refrigeration	Vending Machine	1 unit	New	89.99	10	\$42.81	45%	at stock turnover	\$0.06	1.66	1.54	EIA 2011-2012 Ref. Case
Health	Food Preparation	Oven	1 unit	New	16,781.28	10	\$1,067.99	66%	at stock turnover	-\$0.01	102.60	94.91	RTF Workbook
Health	Food Preparation	Fryer	1 unit	New	3,200.89	10	\$782.02	76%	at stock turnover	\$0.03	43.86	40.47	RTF Workbook
Health	Food Preparation	Dishwasher	1 unit	New	1,497.99	15	\$564.57	43%	at stock turnover	-\$0.11	11.15	10.43	ENERGY STAR
Health	Food Preparation	Hot Food Container	1 unit	New	891.28	20	\$490.95	43%	at stock turnover	\$0.05	18.16	16.93	RTF Workbook

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Health	Food Preparation	Steamer	1 unit	New	73,535.33	9	\$837.45	43%	at stock turnover	-\$0.02	193.75	178.87	RTF Workbook
Health	Office Equipment	Desktop Computer	1 unit	New	137.22	5	\$0.01	100%	at stock turnover	\$0.00	40.95	35.81	7th Power Plan
Health	Office Equipment	Laptop	1 unit	New	40.95	4	\$0.01	100%	at stock turnover	\$0.00	2.14	1.90	7th Power Plan
Health	Office Equipment	Monitor	1 unit	New	34.06	5	\$0.01	100%	at stock turnover	\$0.00	2.56	2.24	7th Power Plan
Health	Office Equipment	Server	1 unit	New	82.32	4	\$0.01	100%	at stock turnover	\$0.00	4.66	4.17	AEG Research
Health	Office Equipment	Printer/Copier/Fax	1 unit	New	247.75	6	\$0.01	100%	at stock turnover	\$0.00	1.17	1.07	ENERGY STAR
Health	Office Equipment	POS Terminal	1 unit	New	137.22	5	\$0.01	40%	at stock turnover	\$0.00	5.35	4.83	7th Power Plan
Health	Miscellaneous	Non-HVAC Motors	1 unit	New	0.00	15	\$0.00	90%	at stock turnover	\$0.00	0.00	0.00	N/A
Health	Miscellaneous	Pool Pump	1 unit	New	0.00	10	\$246.30	0%	at stock turnover	\$0.00	0.00	0.00	Southern California Edison
Health	Miscellaneous	Pool Heater	1 unit	New	0.00	15	\$3,546.07	0%	at stock turnover	\$0.00	0.00	0.00	AEG Research
Health	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
College	Cooling	Air-Cooled Chiller	1 kBTU/hr	Existing	33.11	20	\$26.36	16%	at stock turnover	\$0.07	793.18	721.34	Annual Energy Outlook, 2015
College	Cooling	Water-Cooled Chiller	1 kBTU/hr	Existing	0.00	25	\$12.65	10%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
College	Cooling	RTU	1 kBTU/hr	Existing	2.94	15	\$6.75	53%	at stock turnover	\$0.24	137.25	122.41	Annual Energy Outlook, 2015
College	Cooling	Room AC	1 kBTU/hr	Existing	10.83	15	\$23.62	3%	at stock turnover	\$0.23	32.81	29.26	Annual Energy Outlook, 2015
College	Cooling	Evaporative AC	11 per TR	Existing	0.00	15	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	New Buildings Institute Study, 2006
College	Cooling	Air-Source Heat Pump	1 kBTU/hr	Existing	5.66	15	\$21.65	4%	at stock turnover	\$0.22	22.12	20.36	Annual Energy Outlook, 2015
College	Heating	Air-Source Heat Pump	1 kBTU/hr	Existing	4.99	15	\$21.65	4%	at stock turnover	\$0.22	19.48	17.93	Annual Energy Outlook, 2015
College	Cooling	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	2%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
College	Heating	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	2%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
College	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	1%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
College	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	20%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
College	Ventilation	Ventilation	1000 CFM	Existing	1,902.52	20	\$1,219.71	100%	at stock turnover	\$0.06	991.52	919.28	AEG-BEST
College	Water Heating	Water Heater	65 gallons	Existing	2,404.23	13	\$3,537.01	45%	at stock turnover	\$0.17	1,504.29	1,349.74	7th Power Plan
College	Interior Lighting	Screw-in	lamps	Existing	66.23	8	\$3.95	100%	at stock turnover	\$0.00	105.87	130.86	7th Power Plan
College	Interior Lighting	Linear Lighting	lamps	Existing	111.05	17	\$52.83	100%	at stock turnover	\$0.03	3,125.17	2,697.18	7th Power Plan
College	Interior Lighting	High-Bay Fixtures	lamps	Existing	667.03	15	\$123.86	100%	at stock turnover	\$0.02	1,730.35	1,501.02	Annual Energy Outlook, 2015
College	Exterior Lighting	Screw-in	lamps	Existing	80.67	8	\$3.95	100%	at stock turnover	\$0.00	12.96	16.02	7th Power Plan
College	Exterior Lighting	Linear Lighting	lamps	Existing	141.05	17	\$52.83	100%	at stock turnover	\$0.03	1,070.28	923.70	7th Power Plan
College	Exterior Lighting	Area Lighting	lamps	Existing	940.76	15	\$44.55	100%	at stock turnover	-\$0.02	389.05	329.48	Annual Energy Outlook, 2015
College	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	Existing	1,507.00	11	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
College	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	Existing	605.00	15	\$0.00	14%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
College	Refrigeration	Glass Door Display	1 unit	Existing	767.00	15	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
College	Refrigeration	Open Display Case	1 unit	Existing	1,438.00	10	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
College	Refrigeration	Icemaker	1 unit	Existing	488.36	9	\$1,056.09	45%	at stock turnover	\$0.33	2.37	2.15	ENERGY STAR
College	Refrigeration	Vending Machine	1 unit	Existing	89.99	10	\$42.81	45%	at stock turnover	\$0.06	2.67	2.42	EIA 2011-2012 Ref. Case
College	Food Preparation	Oven	1 unit	Existing	16,781.28	10	\$1,067.99	66%	at stock turnover	-\$0.01	101.31	92.04	RTF Workbook
College	Food Preparation	Fryer	1 unit	Existing	3,200.89	10	\$782.02	76%	at stock turnover	\$0.03	30.91	27.83	RTF Workbook

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
College	Food Preparation	Dishwasher	1 unit	Existing	1,497.99	15	\$564.57	43%	at stock turnover	-\$0.11	21.57	19.97	ENERGY STAR
College	Food Preparation	Hot Food Container	1 unit	Existing	891.28	20	\$490.95	43%	at stock turnover	\$0.05	18.38	17.01	RTF Workbook
College	Food Preparation	Steamer	1 unit	Existing	73,535.33	9	\$837.45	43%	at stock turnover	-\$0.02	232.52	210.94	RTF Workbook
College	Office Equipment	Desktop Computer	1 unit	Existing	137.22	5	\$0.01	100%	at stock turnover	\$0.00	346.50	290.88	7th Power Plan
College	Office Equipment	Laptop	1 unit	Existing	40.95	4	\$0.01	100%	at stock turnover	\$0.00	12.66	11.01	7th Power Plan
College	Office Equipment	Monitor	1 unit	Existing	34.06	5	\$0.01	100%	at stock turnover	\$0.00	21.69	18.21	7th Power Plan
College	Office Equipment	Server	1 unit	Existing	82.32	4	\$0.01	100%	at stock turnover	\$0.00	38.21	33.39	AEG Research
College	Office Equipment	Printer/Copier/Fax	1 unit	Existing	247.75	6	\$0.01	100%	at stock turnover	\$0.00	9.77	8.65	ENERGY STAR
College	Office Equipment	POS Terminal	1 unit	Existing	137.22	5	\$0.01	40%	at stock turnover	\$0.00	19.55	17.11	7th Power Plan
College	Miscellaneous	Non-HVAC Motors	1 unit	Existing	0.00	15	\$0.00	90%	at stock turnover	\$0.00	0.00	0.00	N/A
College	Miscellaneous	Pool Pump	1 unit	Existing	1,591.27	10	\$246.30	0%	at stock turnover	\$0.02	36.45	33.76	Southern California Edison
College	Miscellaneous	Pool Heater	1 unit	Existing	16,973.34	15	\$3,546.07	0%	at stock turnover	\$0.02	25.46	23.71	AEG Research
College	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
College	Cooling	Air-Cooled Chiller	1 kBTU/hr	New	32.35	20	\$26.36	16%	at stock turnover	\$0.08	1,161.12	1,066.90	Annual Energy Outlook, 2015
College	Cooling	Water-Cooled Chiller	1 kBTU/hr	New	0.00	25	\$12.65	10%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
College	Cooling	RTU	1 kBTU/hr	New	2.69	15	\$6.75	53%	at stock turnover	\$0.27	151.81	138.60	Annual Energy Outlook, 2015
College	Cooling	Room AC	1 kBTU/hr	New	9.62	15	\$23.62	3%	at stock turnover	\$0.26	35.21	32.15	Annual Energy Outlook, 2015
College	Cooling	Evaporative AC	11 per TR	New	0.00	15	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	New Buildings Institute Study, 2006
College	Cooling	Air-Source Heat Pump	1 kBTU/hr	New	5.18	15	\$21.65	4%	at stock turnover	\$0.23	25.80	24.13	Annual Energy Outlook, 2015

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
College	Heating	Air-Source Heat Pump	1 kBTU/hr	New	4.70	15	\$21.65	4%	at stock turnover	\$0.23	23.40	21.89	Annual Energy Outlook, 2015
College	Cooling	Geothermal Heat Pump	1 kBTU/hr	New	12.57	25	\$26.36	2%	at stock turnover	\$0.08	4.57	4.24	Annual Energy Outlook, 2015
College	Heating	Geothermal Heat Pump	1 kBTU/hr	New	17.23	25	\$26.36	2%	at stock turnover	\$0.08	6.26	5.81	Annual Energy Outlook, 2015
College	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	1%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
College	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	20%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
College	Ventilation	Ventilation	1000 CFM	New	1,924.95	20	\$1,219.71	100%	at stock turnover	\$0.06	1,517.32	1,421.38	AEG-BEST
College	Water Heating	Water Heater	65 gallons	New	2,404.23	13	\$3,537.01	45%	at stock turnover	\$0.17	1,717.54	1,583.99	7th Power Plan
College	Interior Lighting	Screw-in	lamps	New	65.72	8	\$3.95	100%	at stock turnover	\$0.00	116.64	112.50	7th Power Plan
College	Interior Lighting	Linear Lighting	lamps	New	111.05	17	\$52.83	100%	at stock turnover	\$0.03	3,364.28	3,009.09	7th Power Plan
College	Interior Lighting	High-Bay Fixtures	lamps	New	673.70	15	\$123.86	100%	at stock turnover	\$0.02	2,112.61	1,894.37	Annual Energy Outlook, 2015
College	Exterior Lighting	Screw-in	lamps	New	80.06	8	\$3.95	100%	at stock turnover	\$0.00	14.28	13.78	7th Power Plan
College	Exterior Lighting	Linear Lighting	lamps	New	141.05	17	\$52.83	100%	at stock turnover	\$0.03	1,152.17	1,030.53	7th Power Plan
College	Exterior Lighting	Area Lighting	lamps	New	940.76	15	\$44.55	100%	at stock turnover	-\$0.02	475.18	419.85	Annual Energy Outlook, 2015
College	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	New	1,507.00	11	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
College	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	New	605.00	15	\$0.00	14%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
College	Refrigeration	Glass Door Display	1 unit	New	767.00	15	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
College	Refrigeration	Open Display Case	1 unit	New	1,438.00	10	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
College	Refrigeration	Icemaker	1 unit	New	0.00	9	\$1,056.09	45%	at stock turnover	\$0.00	0.00	0.00	ENERGY STAR
College	Refrigeration	Vending Machine	1 unit	New	89.99	10	\$42.81	45%	at stock turnover	\$0.06	2.57	2.38	EIA 2011-2012 Ref. Case

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
College	Food Preparation	Oven	1 unit	New	16,781.28	10	\$1,067.99	66%	at stock turnover	-\$0.01	120.81	112.15	RTF Workbook
College	Food Preparation	Fryer	1 unit	New	3,200.89	10	\$782.02	76%	at stock turnover	\$0.03	33.66	31.06	RTF Workbook
College	Food Preparation	Dishwasher	1 unit	New	1,497.99	15	\$564.57	43%	at stock turnover	-\$0.11	16.49	15.45	ENERGY STAR
College	Food Preparation	Hot Food Container	1 unit	New	891.28	20	\$490.95	43%	at stock turnover	\$0.05	27.58	25.77	RTF Workbook
College	Food Preparation	Steamer	1 unit	New	73,535.33	9	\$837.45	43%	at stock turnover	-\$0.02	285.56	264.47	RTF Workbook
College	Office Equipment	Desktop Computer	1 unit	New	137.22	5	\$0.01	100%	at stock turnover	\$0.00	277.94	242.98	7th Power Plan
College	Office Equipment	Laptop	1 unit	New	40.95	4	\$0.01	100%	at stock turnover	\$0.00	10.87	9.69	7th Power Plan
College	Office Equipment	Monitor	1 unit	New	34.06	5	\$0.01	100%	at stock turnover	\$0.00	17.40	15.21	7th Power Plan
College	Office Equipment	Server	1 unit	New	82.32	4	\$0.01	100%	at stock turnover	\$0.00	31.61	28.30	AEG Research
College	Office Equipment	Printer/Copier/Fax	1 unit	New	247.75	6	\$0.01	100%	at stock turnover	\$0.00	9.88	9.04	ENERGY STAR
College	Office Equipment	POS Terminal	1 unit	New	137.22	5	\$0.01	40%	at stock turnover	\$0.00	18.16	16.37	7th Power Plan
College	Miscellaneous	Non-HVAC Motors	1 unit	New	0.00	15	\$0.00	90%	at stock turnover	\$0.00	0.00	0.00	N/A
College	Miscellaneous	Pool Pump	1 unit	New	1,591.27	10	\$246.30	0%	at stock turnover	\$0.02	46.66	43.74	Southern California Edison
College	Miscellaneous	Pool Heater	1 unit	New	16,973.34	15	\$3,546.07	0%	at stock turnover	\$0.02	32.46	30.56	AEG Research
College	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
School	Cooling	Air-Cooled Chiller	1 kBTU/hr	Existing	17.33	20	\$26.36	16%	at stock turnover	\$0.14	213.58	194.35	Annual Energy Outlook, 2015
School	Cooling	Water-Cooled Chiller	1 kBTU/hr	Existing	0.00	25	\$12.65	10%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
School	Cooling	RTU	1 kBTU/hr	Existing	1.54	15	\$6.75	53%	at stock turnover	\$0.47	37.09	33.11	Annual Energy Outlook, 2015
School	Cooling	Room AC	1 kBTU/hr	Existing	5.67	15	\$23.62	3%	at stock turnover	\$0.44	8.87	7.92	Annual Energy Outlook, 2015

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
School	Cooling	Evaporative AC	11 per TR	Existing	0.00	15	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	New Buildings Institute Study, 2006
School	Cooling	Air-Source Heat Pump	1 kBTU/hr	Existing	2.96	15	\$21.65	4%	at stock turnover	\$0.38	7.20	6.64	Annual Energy Outlook, 2015
School	Heating	Air-Source Heat Pump	1 kBTU/hr	Existing	3.13	15	\$21.65	4%	at stock turnover	\$0.38	7.59	7.00	Annual Energy Outlook, 2015
School	Cooling	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	2%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
School	Heating	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	2%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
School	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	1%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
School	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	20%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
School	Ventilation	Ventilation	1000 CFM	Existing	1,147.73	20	\$1,219.71	100%	at stock turnover	\$0.10	341.31	316.61	AEG-BEST
School	Water Heating	Water Heater	65 gallons	Existing	2,404.23	13	\$3,537.01	45%	at stock turnover	\$0.17	478.75	430.05	7th Power Plan
School	Interior Lighting	Screw-in	lamps	Existing	47.94	8	\$3.95	100%	at stock turnover	\$0.00	78.36	96.24	7th Power Plan
School	Interior Lighting	Linear Lighting	lamps	Existing	85.14	17	\$52.83	100%	at stock turnover	\$0.04	1,434.61	1,240.45	7th Power Plan
School	Interior Lighting	High-Bay Fixtures	lamps	Existing	499.75	15	\$123.86	100%	at stock turnover	\$0.03	674.41	586.01	Annual Energy Outlook, 2015
School	Exterior Lighting	Screw-in	lamps	Existing	82.39	8	\$3.95	100%	at stock turnover	\$0.00	2.71	3.33	7th Power Plan
School	Exterior Lighting	Linear Lighting	lamps	Existing	144.37	17	\$52.83	100%	at stock turnover	\$0.03	623.00	538.69	7th Power Plan
School	Exterior Lighting	Area Lighting	lamps	Existing	861.72	15	\$44.55	100%	at stock turnover	-\$0.03	103.87	88.16	Annual Energy Outlook, 2015
School	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	Existing	1,507.00	11	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
School	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	Existing	605.00	15	\$0.00	14%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
School	Refrigeration	Glass Door Display	1 unit	Existing	767.00	15	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
School	Refrigeration	Open Display Case	1 unit	Existing	1,438.00	10	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
School	Refrigeration	Icemaker	1 unit	Existing	488.36	9	\$1,056.09	45%	at stock turnover	\$0.33	4.02	3.65	ENERGY STAR
School	Refrigeration	Vending Machine	1 unit	Existing	89.99	10	\$42.81	45%	at stock turnover	\$0.06	4.29	3.88	EIA 2011-2012 Ref. Case
School	Food Preparation	Oven	1 unit	Existing	16,781.28	10	\$1,067.99	66%	at stock turnover	-\$0.01	87.13	78.79	RTF Workbook
School	Food Preparation	Fryer	1 unit	Existing	3,200.89	10	\$782.02	76%	at stock turnover	\$0.03	29.91	26.95	RTF Workbook
School	Food Preparation	Dishwasher	1 unit	Existing	1,497.99	15	\$564.57	43%	at stock turnover	-\$0.11	11.61	10.73	ENERGY STAR
School	Food Preparation	Hot Food Container	1 unit	Existing	891.28	20	\$490.95	43%	at stock turnover	\$0.05	13.47	12.44	RTF Workbook
School	Food Preparation	Steamer	1 unit	Existing	73,535.33	9	\$837.45	43%	at stock turnover	-\$0.02	165.46	149.50	RTF Workbook
School	Office Equipment	Desktop Computer	1 unit	Existing	137.22	5	\$0.01	100%	at stock turnover	\$0.00	154.88	130.08	7th Power Plan
School	Office Equipment	Laptop	1 unit	Existing	40.95	4	\$0.01	100%	at stock turnover	\$0.00	7.60	6.61	7th Power Plan
School	Office Equipment	Monitor	1 unit	Existing	34.06	5	\$0.01	100%	at stock turnover	\$0.00	9.70	8.14	7th Power Plan
School	Office Equipment	Server	1 unit	Existing	82.32	4	\$0.01	100%	at stock turnover	\$0.00	34.55	30.20	AEG Research
School	Office Equipment	Printer/Copier/Fax	1 unit	Existing	247.75	6	\$0.01	100%	at stock turnover	\$0.00	3.54	3.14	ENERGY STAR
School	Office Equipment	POS Terminal	1 unit	Existing	137.22	5	\$0.01	40%	at stock turnover	\$0.00	2.61	2.29	7th Power Plan
School	Miscellaneous	Non-HVAC Motors	1 unit	Existing	0.00	15	\$0.00	90%	at stock turnover	\$0.00	0.00	0.00	N/A
School	Miscellaneous	Pool Pump	1 unit	Existing	1,591.27	10	\$246.30	0%	at stock turnover	\$0.02	1.86	1.72	Southern California Edison
School	Miscellaneous	Pool Heater	1 unit	Existing	16,973.34	15	\$3,546.07	0%	at stock turnover	\$0.02	0.27	0.25	AEG Research
School	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
School	Cooling	Air-Cooled Chiller	1 kBTU/hr	New	16.93	20	\$26.36	16%	at stock turnover	\$0.14	294.03	270.23	Annual Energy Outlook, 2015
School	Cooling	Water-Cooled Chiller	1 kBTU/hr	New	0.00	25	\$12.65	10%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
School	Cooling	RTU	1 kBTU/hr	New	1.41	15	\$6.75	53%	at stock turnover	\$0.51	38.48	35.14	Annual Energy Outlook, 2015
School	Cooling	Room AC	1 kBTU/hr	New	5.03	15	\$23.62	3%	at stock turnover	\$0.50	8.92	8.15	Annual Energy Outlook, 2015
School	Cooling	Evaporative AC	11 per TR	New	0.00	15	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	New Buildings Institute Study, 2006
School	Cooling	Air-Source Heat Pump	1 kBTU/hr	New	2.71	15	\$21.65	4%	at stock turnover	\$0.41	7.87	7.36	Annual Energy Outlook, 2015
School	Heating	Air-Source Heat Pump	1 kBTU/hr	New	2.95	15	\$21.65	4%	at stock turnover	\$0.41	8.54	7.99	Annual Energy Outlook, 2015
School	Cooling	Geothermal Heat Pump	1 kBTU/hr	New	6.58	25	\$26.36	2%	at stock turnover	\$0.14	9.57	8.89	Annual Energy Outlook, 2015
School	Heating	Geothermal Heat Pump	1 kBTU/hr	New	10.79	25	\$26.36	2%	at stock turnover	\$0.14	15.70	14.58	Annual Energy Outlook, 2015
School	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	1%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
School	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	20%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
School	Ventilation	Ventilation	1000 CFM	New	1,161.27	20	\$1,219.71	100%	at stock turnover	\$0.10	490.41	459.48	AEG-BEST
School	Water Heating	Water Heater	65 gallons	New	2,404.23	13	\$3,537.01	45%	at stock turnover	\$0.17	511.53	471.85	7th Power Plan
School	Interior Lighting	Screw-in	lamps	New	47.57	8	\$3.95	100%	at stock turnover	\$0.00	81.15	78.26	7th Power Plan
School	Interior Lighting	Linear Lighting	lamps	New	85.14	17	\$52.83	100%	at stock turnover	\$0.04	1,450.14	1,297.87	7th Power Plan
School	Interior Lighting	High-Bay Fixtures	lamps	New	504.75	15	\$123.86	100%	at stock turnover	\$0.03	772.41	692.95	Annual Energy Outlook, 2015
School	Exterior Lighting	Screw-in	lamps	New	81.76	8	\$3.95	100%	at stock turnover	\$0.00	2.81	2.71	7th Power Plan
School	Exterior Lighting	Linear Lighting	lamps	New	144.37	17	\$52.83	100%	at stock turnover	\$0.03	629.75	563.62	7th Power Plan
School	Exterior Lighting	Area Lighting	lamps	New	861.72	15	\$44.55	100%	at stock turnover	-\$0.03	118.98	105.19	Annual Energy Outlook, 2015
School	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	New	1,507.00	11	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
School	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	New	605.00	15	\$0.00	14%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
School	Refrigeration	Glass Door Display	1 unit	New	767.00	15	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
School	Refrigeration	Open Display Case	1 unit	New	1,438.00	10	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
School	Refrigeration	Icemaker	1 unit	New	0.00	9	\$1,056.09	45%	at stock turnover	\$0.00	0.00	0.00	ENERGY STAR
School	Refrigeration	Vending Machine	1 unit	New	89.99	10	\$42.81	45%	at stock turnover	\$0.06	4.13	3.82	EIA 2011-2012 Ref. Case
School	Food Preparation	Oven	1 unit	New	16,781.28	10	\$1,067.99	66%	at stock turnover	-\$0.01	92.16	85.27	RTF Workbook
School	Food Preparation	Fryer	1 unit	New	3,200.89	10	\$782.02	76%	at stock turnover	\$0.03	30.44	28.09	RTF Workbook
School	Food Preparation	Dishwasher	1 unit	New	1,497.99	15	\$564.57	43%	at stock turnover	-\$0.11	10.47	9.80	ENERGY STAR
School	Food Preparation	Hot Food Container	1 unit	New	891.28	20	\$490.95	43%	at stock turnover	\$0.05	17.07	15.91	RTF Workbook
School	Food Preparation	Steamer	1 unit	New	73,535.33	9	\$837.45	43%	at stock turnover	-\$0.02	181.97	168.02	RTF Workbook
School	Office Equipment	Desktop Computer	1 unit	New	137.22	5	\$0.01	100%	at stock turnover	\$0.00	117.47	102.72	7th Power Plan
School	Office Equipment	Laptop	1 unit	New	40.95	4	\$0.01	100%	at stock turnover	\$0.00	6.13	5.46	7th Power Plan
School	Office Equipment	Monitor	1 unit	New	34.06	5	\$0.01	100%	at stock turnover	\$0.00	7.35	6.43	7th Power Plan
School	Office Equipment	Server	1 unit	New	82.32	4	\$0.01	100%	at stock turnover	\$0.00	26.73	23.93	AEG Research
School	Office Equipment	Printer/Copier/Fax	1 unit	New	247.75	6	\$0.01	100%	at stock turnover	\$0.00	3.34	3.06	ENERGY STAR
School	Office Equipment	POS Terminal	1 unit	New	137.22	5	\$0.01	40%	at stock turnover	\$0.00	2.21	1.99	7th Power Plan
School	Miscellaneous	Non-HVAC Motors	1 unit	New	0.00	15	\$0.00	90%	at stock turnover	\$0.00	0.00	0.00	N/A
School	Miscellaneous	Pool Pump	1 unit	New	1,591.27	10	\$246.30	0%	at stock turnover	\$0.02	2.22	2.08	Southern California Edison
School	Miscellaneous	Pool Heater	1 unit	New	16,973.34	15	\$3,546.07	0%	at stock turnover	\$0.02	0.32	0.30	AEG Research
School	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Lodging	Cooling	Air-Cooled Chiller	1 kBTU/hr	Existing	6.84	20	\$26.36	16%	at stock turnover	\$0.36	0.98	0.89	Annual Energy Outlook, 2015
Lodging	Cooling	Water-Cooled Chiller	1 kBTU/hr	Existing	11.81	25	\$12.65	10%	at stock turnover	\$0.10	6.12	5.58	Annual Energy Outlook, 2015
Lodging	Cooling	RTU	1 kBTU/hr	Existing	2.85	15	\$6.75	53%	at stock turnover	\$0.25	3.83	3.42	Annual Energy Outlook, 2015
Lodging	Cooling	Room AC	1 kBTU/hr	Existing	10.27	15	\$23.62	3%	at stock turnover	\$0.25	33.91	30.33	Annual Energy Outlook, 2015
Lodging	Cooling	Evaporative AC	11 per TR	Existing	0.00	15	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	New Buildings Institute Study, 2006
Lodging	Cooling	Air-Source Heat Pump	1 kBTU/hr	Existing	5.54	15	\$21.65	4%	at stock turnover	\$0.27	3.16	2.91	Annual Energy Outlook, 2015
Lodging	Heating	Air-Source Heat Pump	1 kBTU/hr	Existing	3.16	15	\$21.65	4%	at stock turnover	\$0.27	1.80	1.66	Annual Energy Outlook, 2015
Lodging	Cooling	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	2%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Lodging	Heating	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	2%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Lodging	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	1%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Lodging	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	20%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Lodging	Ventilation	Ventilation	1000 CFM	Existing	1,982.88	20	\$1,219.71	100%	at stock turnover	\$0.06	39.63	36.79	AEG-BEST
Lodging	Water Heating	Water Heater	65 gallons	Existing	2,404.20	13	\$3,537.01	45%	at stock turnover	\$0.17	368.58	331.65	7th Power Plan
Lodging	Interior Lighting	Screw-in	lamps	Existing	56.60	8	\$3.95	100%	at stock turnover	\$0.00	110.81	135.20	7th Power Plan
Lodging	Interior Lighting	Linear Lighting	lamps	Existing	92.99	17	\$52.83	100%	at stock turnover	\$0.04	72.41	62.79	7th Power Plan
Lodging	Interior Lighting	High-Bay Fixtures	lamps	Existing	676.00	15	\$123.86	100%	at stock turnover	\$0.02	240.86	209.83	Annual Energy Outlook, 2015
Lodging	Exterior Lighting	Screw-in	lamps	Existing	81.65	8	\$3.95	100%	at stock turnover	\$0.00	4.36	5.32	7th Power Plan
Lodging	Exterior Lighting	Linear Lighting	lamps	Existing	147.21	17	\$52.83	100%	at stock turnover	\$0.03	4.06	3.52	7th Power Plan
Lodging	Exterior Lighting	Area Lighting	lamps	Existing	1,301.13	15	\$44.55	100%	at stock turnover	-\$0.02	288.63	245.79	Annual Energy Outlook, 2015

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Lodging	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	Existing	1,507.00	11	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Lodging	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	Existing	605.00	15	\$0.00	14%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Lodging	Refrigeration	Glass Door Display	1 unit	Existing	767.00	15	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Lodging	Refrigeration	Open Display Case	1 unit	Existing	1,438.00	10	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Lodging	Refrigeration	Icemaker	1 unit	Existing	488.36	9	\$1,056.09	45%	at stock turnover	\$0.33	1.20	1.09	ENERGY STAR
Lodging	Refrigeration	Vending Machine	1 unit	Existing	89.99	10	\$42.81	45%	at stock turnover	\$0.06	1.46	1.32	EIA 2011-2012 Ref. Case
Lodging	Food Preparation	Oven	1 unit	Existing	16,781.28	10	\$1,067.99	66%	at stock turnover	-\$0.01	4.92	4.48	RTF Workbook
Lodging	Food Preparation	Fryer	1 unit	Existing	3,200.89	10	\$782.02	76%	at stock turnover	\$0.03	3.95	3.56	RTF Workbook
Lodging	Food Preparation	Dishwasher	1 unit	Existing	1,497.99	15	\$564.57	43%	at stock turnover	-\$0.11	3.30	3.06	ENERGY STAR
Lodging	Food Preparation	Hot Food Container	1 unit	Existing	891.28	20	\$490.95	43%	at stock turnover	\$0.05	3.08	2.85	RTF Workbook
Lodging	Food Preparation	Steamer	1 unit	Existing	73,535.33	9	\$837.45	43%	at stock turnover	-\$0.02	38.90	35.29	RTF Workbook
Lodging	Office Equipment	Desktop Computer	1 unit	Existing	137.22	5	\$0.01	100%	at stock turnover	\$0.00	6.95	5.84	7th Power Plan
Lodging	Office Equipment	Laptop	1 unit	Existing	40.95	4	\$0.01	100%	at stock turnover	\$0.00	0.86	0.75	7th Power Plan
Lodging	Office Equipment	Monitor	1 unit	Existing	34.06	5	\$0.01	100%	at stock turnover	\$0.00	0.44	0.37	7th Power Plan
Lodging	Office Equipment	Server	1 unit	Existing	82.32	4	\$0.01	100%	at stock turnover	\$0.00	3.94	3.45	AEG Research
Lodging	Office Equipment	Printer/Copier/Fax	1 unit	Existing	247.75	6	\$0.01	100%	at stock turnover	\$0.00	0.16	0.14	ENERGY STAR
Lodging	Office Equipment	POS Terminal	1 unit	Existing	137.22	5	\$0.01	40%	at stock turnover	\$0.00	0.94	0.82	7th Power Plan
Lodging	Miscellaneous	Non-HVAC Motors	1 unit	Existing	0.00	15	\$0.00	90%	at stock turnover	\$0.00	0.00	0.00	N/A
Lodging	Miscellaneous	Pool Pump	1 unit	Existing	1,591.27	10	\$246.30	0%	at stock turnover	\$0.02	1.89	1.75	Southern California Edison

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Lodging	Miscellaneous	Pool Heater	1 unit	Existing	16,973.34	15	\$3,546.07	0%	at stock turnover	\$0.02	1.16	1.08	AEG Research
Lodging	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Lodging	Cooling	Air-Cooled Chiller	1 kBTU/hr	New	6.16	20	\$26.36	16%	at stock turnover	\$0.40	1.12	1.03	Annual Energy Outlook, 2015
Lodging	Cooling	Water-Cooled Chiller	1 kBTU/hr	New	10.75	25	\$12.65	10%	at stock turnover	\$0.11	5.91	5.38	Annual Energy Outlook, 2015
Lodging	Cooling	RTU	1 kBTU/hr	New	2.91	15	\$6.75	53%	at stock turnover	\$0.25	3.99	3.65	Annual Energy Outlook, 2015
Lodging	Cooling	Room AC	1 kBTU/hr	New	8.98	15	\$23.62	3%	at stock turnover	\$0.28	30.31	27.69	Annual Energy Outlook, 2015
Lodging	Cooling	Evaporative AC	11 per TR	New	0.00	15	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	New Buildings Institute Study, 2006
Lodging	Cooling	Air-Source Heat Pump	1 kBTU/hr	New	5.66	15	\$21.65	4%	at stock turnover	\$0.28	3.46	3.24	Annual Energy Outlook, 2015
Lodging	Heating	Air-Source Heat Pump	1 kBTU/hr	New	2.73	15	\$21.65	4%	at stock turnover	\$0.28	1.67	1.56	Annual Energy Outlook, 2015
Lodging	Cooling	Geothermal Heat Pump	1 kBTU/hr	New	20.82	25	\$26.36	2%	at stock turnover	\$0.08	3.09	2.88	Annual Energy Outlook, 2015
Lodging	Heating	Geothermal Heat Pump	1 kBTU/hr	New	8.41	25	\$26.36	2%	at stock turnover	\$0.08	1.25	1.16	Annual Energy Outlook, 2015
Lodging	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	1%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Lodging	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	20%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Lodging	Ventilation	Ventilation	1000 CFM	New	1,647.73	20	\$1,219.71	100%	at stock turnover	\$0.07	42.71	40.03	AEG-BEST
Lodging	Water Heating	Water Heater	65 gallons	New	2,404.20	13	\$3,537.01	45%	at stock turnover	\$0.17	353.51	326.18	7th Power Plan
Lodging	Interior Lighting	Screw-in	lamps	New	56.65	8	\$3.95	100%	at stock turnover	\$0.00	103.78	100.61	7th Power Plan
Lodging	Interior Lighting	Linear Lighting	lamps	New	92.99	17	\$52.83	100%	at stock turnover	\$0.04	66.03	59.16	7th Power Plan
Lodging	Interior Lighting	High-Bay Fixtures	lamps	New	702.94	15	\$123.86	100%	at stock turnover	\$0.02	256.15	230.09	Annual Energy Outlook, 2015
Lodging	Exterior Lighting	Screw-in	lamps	New	81.73	8	\$3.95	100%	at stock turnover	\$0.00	4.09	3.96	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Lodging	Exterior Lighting	Linear Lighting	lamps	New	147.21	17	\$52.83	100%	at stock turnover	\$0.03	3.71	3.32	7th Power Plan
Lodging	Exterior Lighting	Area Lighting	lamps	New	1,301.13	15	\$44.55	100%	at stock turnover	-\$0.02	297.63	263.38	Annual Energy Outlook, 2015
Lodging	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	New	1,507.00	11	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Lodging	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	New	605.00	15	\$0.00	14%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Lodging	Refrigeration	Glass Door Display	1 unit	New	767.00	15	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Lodging	Refrigeration	Open Display Case	1 unit	New	1,438.00	10	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Lodging	Refrigeration	Icemaker	1 unit	New	488.36	9	\$1,056.09	45%	at stock turnover	\$0.33	1.22	1.13	ENERGY STAR
Lodging	Refrigeration	Vending Machine	1 unit	New	89.99	10	\$42.81	45%	at stock turnover	\$0.06	1.25	1.15	EIA 2011-2012 Ref. Case
Lodging	Food Preparation	Oven	1 unit	New	16,781.28	10	\$1,067.99	66%	at stock turnover	-\$0.01	4.69	4.36	RTF Workbook
Lodging	Food Preparation	Fryer	1 unit	New	3,200.89	10	\$782.02	76%	at stock turnover	\$0.03	3.60	3.32	RTF Workbook
Lodging	Food Preparation	Dishwasher	1 unit	New	1,497.99	15	\$564.57	43%	at stock turnover	-\$0.11	2.26	2.11	ENERGY STAR
Lodging	Food Preparation	Hot Food Container	1 unit	New	891.28	20	\$490.95	43%	at stock turnover	\$0.05	3.73	3.48	RTF Workbook
Lodging	Food Preparation	Steamer	1 unit	New	73,535.33	9	\$837.45	43%	at stock turnover	-\$0.02	39.06	36.13	RTF Workbook
Lodging	Office Equipment	Desktop Computer	1 unit	New	137.22	5	\$0.01	100%	at stock turnover	\$0.00	4.80	4.20	7th Power Plan
Lodging	Office Equipment	Laptop	1 unit	New	40.95	4	\$0.01	100%	at stock turnover	\$0.00	0.63	0.56	7th Power Plan
Lodging	Office Equipment	Monitor	1 unit	New	34.06	5	\$0.01	100%	at stock turnover	\$0.00	0.30	0.26	7th Power Plan
Lodging	Office Equipment	Server	1 unit	New	82.32	4	\$0.01	100%	at stock turnover	\$0.00	2.73	2.45	AEG Research
Lodging	Office Equipment	Printer/Copier/Fax	1 unit	New	247.75	6	\$0.01	100%	at stock turnover	\$0.00	0.14	0.13	ENERGY STAR
Lodging	Office Equipment	POS Terminal	1 unit	New	137.22	5	\$0.01	40%	at stock turnover	\$0.00	0.73	0.66	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Lodging	Miscellaneous	Non-HVAC Motors	1 unit	New	0.00	15	\$0.00	90%	at stock turnover	\$0.00	0.00	0.00	N/A
Lodging	Miscellaneous	Pool Pump	1 unit	New	1,591.27	10	\$246.30	0%	at stock turnover	\$0.02	2.02	1.89	Southern California Edison
Lodging	Miscellaneous	Pool Heater	1 unit	New	16,973.34	15	\$3,546.07	0%	at stock turnover	\$0.02	1.25	1.17	AEG Research
Lodging	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Warehouse	Cooling	Air-Cooled Chiller	1 kBTU/hr	Existing	0.00	20	\$26.36	16%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Warehouse	Cooling	Water-Cooled Chiller	1 kBTU/hr	Existing	0.00	25	\$12.65	10%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Warehouse	Cooling	RTU	1 kBTU/hr	Existing	3.14	15	\$6.75	53%	at stock turnover	\$0.23	25.71	22.97	Annual Energy Outlook, 2015
Warehouse	Cooling	Room AC	1 kBTU/hr	Existing	11.55	15	\$23.62	3%	at stock turnover	\$0.22	6.21	5.55	Annual Energy Outlook, 2015
Warehouse	Cooling	Evaporative AC	11 per TR	Existing	0.00	15	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	New Buildings Institute Study, 2006
Warehouse	Cooling	Air-Source Heat Pump	1 kBTU/hr	Existing	6.04	15	\$21.65	4%	at stock turnover	\$0.16	6.43	5.93	Annual Energy Outlook, 2015
Warehouse	Heating	Air-Source Heat Pump	1 kBTU/hr	Existing	8.33	15	\$21.65	4%	at stock turnover	\$0.16	8.87	8.17	Annual Energy Outlook, 2015
Warehouse	Cooling	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	2%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Warehouse	Heating	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	2%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Warehouse	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	1%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Warehouse	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	20%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Warehouse	Ventilation	Ventilation	1000 CFM	Existing	2,227.53	20	\$1,219.71	100%	at stock turnover	\$0.05	164.01	152.18	AEG-BEST
Warehouse	Water Heating	Water Heater	65 gallons	Existing	2,404.20	13	\$3,537.01	45%	at stock turnover	\$0.17	166.40	149.56	7th Power Plan
Warehouse	Interior Lighting	Screw-in	lamps	Existing	60.43	8	\$3.95	100%	at stock turnover	\$0.00	95.34	150.05	7th Power Plan
Warehouse	Interior Lighting	Linear Lighting	lamps	Existing	84.64	17	\$52.83	100%	at stock turnover	\$0.04	464.44	401.97	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Warehouse	Interior Lighting	High-Bay Fixtures	lamps	Existing	448.49	15	\$123.86	100%	at stock turnover	\$0.03	2,074.63	1,798.70	Annual Energy Outlook, 2015
Warehouse	Exterior Lighting	Screw-in	lamps	Existing	105.61	8	\$3.95	100%	at stock turnover	\$0.00	29.18	45.92	7th Power Plan
Warehouse	Exterior Lighting	Linear Lighting	lamps	Existing	157.04	17	\$52.83	100%	at stock turnover	\$0.02	125.52	108.63	7th Power Plan
Warehouse	Exterior Lighting	Area Lighting	lamps	Existing	1,140.18	15	\$44.55	100%	at stock turnover	-\$0.02	630.75	535.96	Annual Energy Outlook, 2015
Warehouse	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	Existing	1,507.00	11	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Warehouse	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	Existing	605.00	15	\$0.00	14%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Warehouse	Refrigeration	Glass Door Display	1 unit	Existing	767.00	15	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Warehouse	Refrigeration	Open Display Case	1 unit	Existing	1,438.00	10	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Warehouse	Refrigeration	Icemaker	1 unit	Existing	488.36	9	\$1,056.09	45%	at stock turnover	\$0.33	7.65	7.00	ENERGY STAR
Warehouse	Refrigeration	Vending Machine	1 unit	Existing	89.99	10	\$42.81	45%	at stock turnover	\$0.06	1.92	1.75	EIA 2011-2012 Ref. Case
Warehouse	Food Preparation	Oven	1 unit	Existing	16,781.28	10	\$1,067.99	66%	at stock turnover	-\$0.01	5.40	4.95	RTF Workbook
Warehouse	Food Preparation	Fryer	1 unit	Existing	3,200.89	10	\$782.02	76%	at stock turnover	\$0.03	0.42	0.37	RTF Workbook
Warehouse	Food Preparation	Dishwasher	1 unit	Existing	1,497.99	15	\$564.57	43%	at stock turnover	-\$0.11	1.89	1.75	ENERGY STAR
Warehouse	Food Preparation	Hot Food Container	1 unit	Existing	891.28	20	\$490.95	43%	at stock turnover	\$0.05	1.09	1.01	RTF Workbook
Warehouse	Food Preparation	Steamer	1 unit	Existing	73,535.33	9	\$837.45	43%	at stock turnover	-\$0.02	12.59	11.52	RTF Workbook
Warehouse	Office Equipment	Desktop Computer	1 unit	Existing	137.22	5	\$0.01	100%	at stock turnover	\$0.00	53.45	44.90	7th Power Plan
Warehouse	Office Equipment	Laptop	1 unit	Existing	40.95	4	\$0.01	100%	at stock turnover	\$0.00	5.26	4.58	7th Power Plan
Warehouse	Office Equipment	Monitor	1 unit	Existing	34.06	5	\$0.01	100%	at stock turnover	\$0.00	3.35	2.81	7th Power Plan
Warehouse	Office Equipment	Server	1 unit	Existing	82.32	4	\$0.01	100%	at stock turnover	\$0.00	55.53	48.58	AEG Research

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Warehouse	Office Equipment	Printer/Copier/Fax	1 unit	Existing	247.75	6	\$0.01	100%	at stock turnover	\$0.00	1.23	1.09	ENERGY STAR
Warehouse	Office Equipment	POS Terminal	1 unit	Existing	137.22	5	\$0.01	40%	at stock turnover	\$0.00	18.93	16.59	7th Power Plan
Warehouse	Miscellaneous	Non-HVAC Motors	1 unit	Existing	0.00	15	\$0.00	90%	at stock turnover	\$0.00	0.00	0.00	N/A
Warehouse	Miscellaneous	Pool Pump	1 unit	Existing	0.00	10	\$246.30	0%	at stock turnover	\$0.00	0.00	0.00	Southern California Edison
Warehouse	Miscellaneous	Pool Heater	1 unit	Existing	0.00	15	\$3,546.07	0%	at stock turnover	\$0.00	0.00	0.00	AEG Research
Warehouse	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Warehouse	Cooling	Air-Cooled Chiller	1 kBTU/hr	New	0.00	20	\$26.36	16%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Warehouse	Cooling	Water-Cooled Chiller	1 kBTU/hr	New	0.00	25	\$12.65	10%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Warehouse	Cooling	RTU	1 kBTU/hr	New	3.05	15	\$6.75	53%	at stock turnover	\$0.24	27.39	25.02	Annual Energy Outlook, 2015
Warehouse	Cooling	Room AC	1 kBTU/hr	New	10.10	15	\$23.62	3%	at stock turnover	\$0.25	5.96	5.44	Annual Energy Outlook, 2015
Warehouse	Cooling	Evaporative AC	11 per TR	New	0.00	15	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	New Buildings Institute Study, 2006
Warehouse	Cooling	Air-Source Heat Pump	1 kBTU/hr	New	5.22	15	\$21.65	4%	at stock turnover	\$0.18	6.41	5.99	Annual Energy Outlook, 2015
Warehouse	Heating	Air-Source Heat Pump	1 kBTU/hr	New	7.99	15	\$21.65	4%	at stock turnover	\$0.18	9.81	9.18	Annual Energy Outlook, 2015
Warehouse	Cooling	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	2%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Warehouse	Heating	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	2%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Warehouse	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	1%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Warehouse	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	20%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Warehouse	Ventilation	Ventilation	1000 CFM	New	1,927.87	20	\$1,219.71	100%	at stock turnover	\$0.06	163.80	153.49	AEG-BEST
Warehouse	Water Heating	Water Heater	65 gallons	New	2,404.20	13	\$3,537.01	45%	at stock turnover	\$0.17	171.60	158.31	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Warehouse	Interior Lighting	Screw-in	lamps	New	60.49	8	\$3.95	100%	at stock turnover	\$0.00	95.57	102.36	7th Power Plan
Warehouse	Interior Lighting	Linear Lighting	lamps	New	84.64	17	\$52.83	100%	at stock turnover	\$0.04	453.89	406.37	7th Power Plan
Warehouse	Interior Lighting	High-Bay Fixtures	lamps	New	449.20	15	\$123.86	100%	at stock turnover	\$0.03	2,276.68	2,038.51	Annual Energy Outlook, 2015
Warehouse	Exterior Lighting	Screw-in	lamps	New	105.71	8	\$3.95	100%	at stock turnover	\$0.00	29.25	31.33	7th Power Plan
Warehouse	Exterior Lighting	Linear Lighting	lamps	New	157.04	17	\$52.83	100%	at stock turnover	\$0.02	122.66	109.82	7th Power Plan
Warehouse	Exterior Lighting	Area Lighting	lamps	New	1,140.18	15	\$44.55	100%	at stock turnover	-\$0.02	698.04	617.33	Annual Energy Outlook, 2015
Warehouse	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	New	1,507.00	11	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Warehouse	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	New	605.00	15	\$0.00	14%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Warehouse	Refrigeration	Glass Door Display	1 unit	New	767.00	15	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Warehouse	Refrigeration	Open Display Case	1 unit	New	1,438.00	10	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Warehouse	Refrigeration	Icemaker	1 unit	New	488.36	9	\$1,056.09	45%	at stock turnover	\$0.33	7.32	6.79	ENERGY STAR
Warehouse	Refrigeration	Vending Machine	1 unit	New	89.99	10	\$42.81	45%	at stock turnover	\$0.06	1.40	1.30	EIA 2011-2012 Ref. Case
Warehouse	Food Preparation	Oven	1 unit	New	16,781.28	10	\$1,067.99	66%	at stock turnover	-\$0.01	5.72	5.36	RTF Workbook
Warehouse	Food Preparation	Fryer	1 unit	New	3,200.89	10	\$782.02	76%	at stock turnover	\$0.03	0.41	0.38	RTF Workbook
Warehouse	Food Preparation	Dishwasher	1 unit	New	1,497.99	15	\$564.57	43%	at stock turnover	-\$0.11	0.79	0.75	ENERGY STAR
Warehouse	Food Preparation	Hot Food Container	1 unit	New	891.28	20	\$490.95	43%	at stock turnover	\$0.05	1.42	1.33	RTF Workbook
Warehouse	Food Preparation	Steamer	1 unit	New	73,535.33	9	\$837.45	43%	at stock turnover	-\$0.02	13.58	12.69	RTF Workbook
Warehouse	Office Equipment	Desktop Computer	1 unit	New	137.22	5	\$0.01	100%	at stock turnover	\$0.00	39.34	34.40	7th Power Plan
Warehouse	Office Equipment	Laptop	1 unit	New	40.95	4	\$0.01	100%	at stock turnover	\$0.00	4.10	3.66	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Warehouse	Office Equipment	Monitor	1 unit	New	34.06	5	\$0.01	100%	at stock turnover	\$0.00	2.46	2.15	7th Power Plan
Warehouse	Office Equipment	Server	1 unit	New	82.32	4	\$0.01	100%	at stock turnover	\$0.00	41.33	37.03	AEG Research
Warehouse	Office Equipment	Printer/Copier/Fax	1 unit	New	247.75	6	\$0.01	100%	at stock turnover	\$0.00	1.12	1.03	ENERGY STAR
Warehouse	Office Equipment	POS Terminal	1 unit	New	137.22	5	\$0.01	40%	at stock turnover	\$0.00	15.85	14.29	7th Power Plan
Warehouse	Miscellaneous	Non-HVAC Motors	1 unit	New	0.00	15	\$0.00	90%	at stock turnover	\$0.00	0.00	0.00	N/A
Warehouse	Miscellaneous	Pool Pump	1 unit	New	0.00	10	\$246.30	0%	at stock turnover	\$0.00	0.00	0.00	Southern California Edison
Warehouse	Miscellaneous	Pool Heater	1 unit	New	0.00	15	\$3,546.07	0%	at stock turnover	\$0.00	0.00	0.00	AEG Research
Warehouse	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Warehouse, Controlled Atm.	Cooling	Air-Cooled Chiller	1 kBTU/hr	Existing	16.29	20	\$26.36	16%	at stock turnover	\$0.15	36.35	33.09	Annual Energy Outlook, 2015
Warehouse, Controlled Atm.	Cooling	Water-Cooled Chiller	1 kBTU/hr	Existing	23.90	25	\$12.65	10%	at stock turnover	\$0.05	5.93	5.39	Annual Energy Outlook, 2015
Warehouse, Controlled Atm.	Cooling	RTU	1 kBTU/hr	Existing	2.47	15	\$6.75	53%	at stock turnover	\$0.29	8.63	7.71	Annual Energy Outlook, 2015
Warehouse, Controlled Atm.	Cooling	Room AC	1 kBTU/hr	Existing	9.10	15	\$23.62	3%	at stock turnover	\$0.28	1.91	1.71	Annual Energy Outlook, 2015
Warehouse, Controlled Atm.	Cooling	Evaporative AC	11 per TR	Existing	0.00	15	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	New Buildings Institute Study, 2006
Warehouse, Controlled Atm.	Cooling	Air-Source Heat Pump	1 kBTU/hr	Existing	4.76	15	\$21.65	4%	at stock turnover	\$0.20	1.15	1.06	Annual Energy Outlook, 2015
Warehouse, Controlled Atm.	Heating	Air-Source Heat Pump	1 kBTU/hr	Existing	6.84	15	\$21.65	4%	at stock turnover	\$0.20	1.65	1.52	Annual Energy Outlook, 2015
Warehouse, Controlled Atm.	Cooling	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	2%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Warehouse, Controlled Atm.	Heating	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	2%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Warehouse, Controlled Atm.	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	1%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Warehouse, Controlled Atm.	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	20%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Warehouse, Controlled Atm.	Ventilation	Ventilation	1000 CFM	Existing	6,414.64	20	\$1,219.71	100%	at stock turnover	\$0.02	156.17	144.91	AEG-BEST
Warehouse, Controlled Atm.	Water Heating	Water Heater	65 gallons	Existing	2,404.20	13	\$3,537.01	45%	at stock turnover	\$0.17	109.13	98.09	7th Power Plan
Warehouse, Controlled Atm.	Interior Lighting	Screw-in	lamps	Existing	60.43	8	\$3.95	100%	at stock turnover	\$0.00	31.53	49.62	7th Power Plan
Warehouse, Controlled Atm.	Interior Lighting	Linear Lighting	lamps	Existing	84.64	17	\$52.83	100%	at stock turnover	\$0.04	153.57	132.92	7th Power Plan
Warehouse, Controlled Atm.	Interior Lighting	High-Bay Fixtures	lamps	Existing	448.49	15	\$123.86	100%	at stock turnover	\$0.03	686.01	594.77	Annual Energy Outlook, 2015
Warehouse, Controlled Atm.	Exterior Lighting	Screw-in	lamps	Existing	105.61	8	\$3.95	100%	at stock turnover	\$0.00	9.65	15.18	7th Power Plan
Warehouse, Controlled Atm.	Exterior Lighting	Linear Lighting	lamps	Existing	157.04	17	\$52.83	100%	at stock turnover	\$0.02	41.50	35.92	7th Power Plan
Warehouse, Controlled Atm.	Exterior Lighting	Area Lighting	lamps	Existing	1,140.18	15	\$44.55	100%	at stock turnover	-\$0.02	208.57	177.22	Annual Energy Outlook, 2015
Warehouse, Controlled Atm.	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	Existing	1,507.00	11	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Warehouse, Controlled Atm.	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	Existing	605.00	15	\$0.00	14%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Warehouse, Controlled Atm.	Refrigeration	Glass Door Display	1 unit	Existing	767.00	15	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Warehouse, Controlled Atm.	Refrigeration	Open Display Case	1 unit	Existing	1,438.00	10	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Warehouse, Controlled Atm.	Refrigeration	Icemaker	1 unit	Existing	488.36	9	\$1,056.09	45%	at stock turnover	\$0.33	100.93	91.73	ENERGY STAR
Warehouse, Controlled Atm.	Refrigeration	Vending Machine	1 unit	Existing	89.99	10	\$42.81	45%	at stock turnover	\$0.06	20.70	18.71	EIA 2011-2012 Ref. Case
Warehouse, Controlled Atm.	Food Preparation	Oven	1 unit	Existing	16,781.28	10	\$1,067.99	66%	at stock turnover	-\$0.01	11.56	10.48	RTF Workbook
Warehouse, Controlled Atm.	Food Preparation	Fryer	1 unit	Existing	3,200.89	10	\$782.02	76%	at stock turnover	\$0.03	4.10	3.70	RTF Workbook
Warehouse, Controlled Atm.	Food Preparation	Dishwasher	1 unit	Existing	1,497.99	15	\$564.57	43%	at stock turnover	-\$0.11	2.01	1.86	ENERGY STAR
Warehouse, Controlled Atm.	Food Preparation	Hot Food Container	1 unit	Existing	891.28	20	\$490.95	43%	at stock turnover	\$0.05	2.13	1.97	RTF Workbook
Warehouse, Controlled Atm.	Food Preparation	Steamer	1 unit	Existing	73,535.33	9	\$837.45	43%	at stock turnover	-\$0.02	26.49	23.97	RTF Workbook

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Warehouse, Controlled Atm.	Office Equipment	Desktop Computer	1 unit	Existing	137.22	5	\$0.01	100%	at stock turnover	\$0.00	13.26	11.14	7th Power Plan
Warehouse, Controlled Atm.	Office Equipment	Laptop	1 unit	Existing	40.95	4	\$0.01	100%	at stock turnover	\$0.00	1.31	1.14	7th Power Plan
Warehouse, Controlled Atm.	Office Equipment	Monitor	1 unit	Existing	34.06	5	\$0.01	100%	at stock turnover	\$0.00	0.83	0.70	7th Power Plan
Warehouse, Controlled Atm.	Office Equipment	Server	1 unit	Existing	82.32	4	\$0.01	100%	at stock turnover	\$0.00	13.77	12.05	AEG Research
Warehouse, Controlled Atm.	Office Equipment	Printer/Copier/Fax	1 unit	Existing	247.75	6	\$0.01	100%	at stock turnover	\$0.00	0.31	0.27	ENERGY STAR
Warehouse, Controlled Atm.	Office Equipment	POS Terminal	1 unit	Existing	137.22	5	\$0.01	40%	at stock turnover	\$0.00	4.70	4.11	7th Power Plan
Warehouse, Controlled Atm.	Miscellaneous	Non-HVAC Motors	1 unit	Existing	0.00	15	\$0.00	90%	at stock turnover	\$0.00	0.00	0.00	N/A
Warehouse, Controlled Atm.	Miscellaneous	Pool Pump	1 unit	Existing	0.00	10	\$246.30	0%	at stock turnover	\$0.00	0.00	0.00	Southern California Edison
Warehouse, Controlled Atm.	Miscellaneous	Pool Heater	1 unit	Existing	0.00	15	\$3,546.07	0%	at stock turnover	\$0.00	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Warehouse, Controlled Atm.	Cooling	Air-Cooled Chiller	1 kBTU/hr	New	14.02	20	\$26.36	16%	at stock turnover	\$0.17	42.66	39.21	Annual Energy Outlook, 2015
Warehouse, Controlled Atm.	Cooling	Water-Cooled Chiller	1 kBTU/hr	New	20.80	25	\$12.65	10%	at stock turnover	\$0.05	5.85	5.33	Annual Energy Outlook, 2015
Warehouse, Controlled Atm.	Cooling	RTU	1 kBTU/hr	New	2.40	15	\$6.75	53%	at stock turnover	\$0.30	9.19	8.39	Annual Energy Outlook, 2015
Warehouse, Controlled Atm.	Cooling	Room AC	1 kBTU/hr	New	7.96	15	\$23.62	3%	at stock turnover	\$0.32	1.83	1.68	Annual Energy Outlook, 2015
Warehouse, Controlled Atm.	Cooling	Evaporative AC	11 per TR	New	0.00	15	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	New Buildings Institute Study, 2006
Warehouse, Controlled Atm.	Cooling	Air-Source Heat Pump	1 kBTU/hr	New	4.11	15	\$21.65	4%	at stock turnover	\$0.22	1.14	1.07	Annual Energy Outlook, 2015
Warehouse, Controlled Atm.	Heating	Air-Source Heat Pump	1 kBTU/hr	New	6.56	15	\$21.65	4%	at stock turnover	\$0.22	1.82	1.71	Annual Energy Outlook, 2015
Warehouse, Controlled Atm.	Cooling	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	2%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Warehouse, Controlled Atm.	Heating	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	2%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Warehouse, Controlled Atm.	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	1%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Warehouse, Controlled Atm.	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	20%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Warehouse, Controlled Atm.	Ventilation	Ventilation	1000 CFM	New	5,551.69	20	\$1,219.71	100%	at stock turnover	\$0.02	155.97	146.15	AEG-BEST
Warehouse, Controlled Atm.	Water Heating	Water Heater	65 gallons	New	2,404.20	13	\$3,537.01	45%	at stock turnover	\$0.17	112.54	103.82	7th Power Plan
Warehouse, Controlled Atm.	Interior Lighting	Screw-in	lamps	New	60.49	8	\$3.95	100%	at stock turnover	\$0.00	31.60	33.85	7th Power Plan
Warehouse, Controlled Atm.	Interior Lighting	Linear Lighting	lamps	New	84.64	17	\$52.83	100%	at stock turnover	\$0.04	150.09	134.37	7th Power Plan
Warehouse, Controlled Atm.	Interior Lighting	High-Bay Fixtures	lamps	New	449.20	15	\$123.86	100%	at stock turnover	\$0.03	752.82	674.06	Annual Energy Outlook, 2015
Warehouse, Controlled Atm.	Exterior Lighting	Screw-in	lamps	New	105.71	8	\$3.95	100%	at stock turnover	\$0.00	9.67	10.36	7th Power Plan
Warehouse, Controlled Atm.	Exterior Lighting	Linear Lighting	lamps	New	157.04	17	\$52.83	100%	at stock turnover	\$0.02	40.56	36.31	7th Power Plan
Warehouse, Controlled Atm.	Exterior Lighting	Area Lighting	lamps	New	1,140.18	15	\$44.55	100%	at stock turnover	-\$0.02	230.82	204.13	Annual Energy Outlook, 2015
Warehouse, Controlled Atm.	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	New	1,507.00	11	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Warehouse, Controlled Atm.	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	New	605.00	15	\$0.00	14%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Warehouse, Controlled Atm.	Refrigeration	Glass Door Display	1 unit	New	767.00	15	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Warehouse, Controlled Atm.	Refrigeration	Open Display Case	1 unit	New	1,438.00	10	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Warehouse, Controlled Atm.	Refrigeration	Icemaker	1 unit	New	488.36	9	\$1,056.09	45%	at stock turnover	\$0.33	101.85	94.17	ENERGY STAR
Warehouse, Controlled Atm.	Refrigeration	Vending Machine	1 unit	New	89.99	10	\$42.81	45%	at stock turnover	\$0.06	19.52	18.02	EIA 2011-2012 Ref. Case
Warehouse, Controlled Atm.	Food Preparation	Oven	1 unit	New	16,781.28	10	\$1,067.99	66%	at stock turnover	-\$0.01	11.99	11.11	RTF Workbook
Warehouse, Controlled Atm.	Food Preparation	Fryer	1 unit	New	3,200.89	10	\$782.02	76%	at stock turnover	\$0.03	4.03	3.72	RTF Workbook
Warehouse, Controlled Atm.	Food Preparation	Dishwasher	1 unit	New	1,497.99	15	\$564.57	43%	at stock turnover	-\$0.11	1.63	1.53	ENERGY STAR

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Warehouse, Controlled Atm.	Food Preparation	Hot Food Container	1 unit	New	891.28	20	\$490.95	43%	at stock turnover	\$0.05	2.68	2.50	RTF Workbook
Warehouse, Controlled Atm.	Food Preparation	Steamer	1 unit	New	73,535.33	9	\$837.45	43%	at stock turnover	-\$0.02	28.32	26.17	RTF Workbook
Warehouse, Controlled Atm.	Office Equipment	Desktop Computer	1 unit	New	137.22	5	\$0.01	100%	at stock turnover	\$0.00	9.76	8.53	7th Power Plan
Warehouse, Controlled Atm.	Office Equipment	Laptop	1 unit	New	40.95	4	\$0.01	100%	at stock turnover	\$0.00	1.02	0.91	7th Power Plan
Warehouse, Controlled Atm.	Office Equipment	Monitor	1 unit	New	34.06	5	\$0.01	100%	at stock turnover	\$0.00	0.61	0.53	7th Power Plan
Warehouse, Controlled Atm.	Office Equipment	Server	1 unit	New	82.32	4	\$0.01	100%	at stock turnover	\$0.00	10.25	9.18	AEG Research
Warehouse, Controlled Atm.	Office Equipment	Printer/Copier/Fax	1 unit	New	247.75	6	\$0.01	100%	at stock turnover	\$0.00	0.28	0.25	ENERGY STAR
Warehouse, Controlled Atm.	Office Equipment	POS Terminal	1 unit	New	137.22	5	\$0.01	40%	at stock turnover	\$0.00	3.93	3.54	7th Power Plan
Warehouse, Controlled Atm.	Miscellaneous	Non-HVAC Motors	1 unit	New	0.00	15	\$0.00	90%	at stock turnover	\$0.00	0.00	0.00	N/A
Warehouse, Controlled Atm.	Miscellaneous	Pool Pump	1 unit	New	0.00	10	\$246.30	0%	at stock turnover	\$0.00	0.00	0.00	Southern California Edison
Warehouse, Controlled Atm.	Miscellaneous	Pool Heater	1 unit	New	0.00	15	\$3,546.07	0%	at stock turnover	\$0.00	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Data Center	Cooling	Air-Cooled Chiller	1 kBTU/hr	Existing	97.75	20	\$26.36	16%	at stock turnover	\$0.03	0.21	0.19	Annual Energy Outlook, 2015
Data Center	Cooling	Water-Cooled Chiller	1 kBTU/hr	Existing	145.11	25	\$12.65	10%	at stock turnover	\$0.01	0.19	0.18	Annual Energy Outlook, 2015
Data Center	Cooling	RTU	1 kBTU/hr	Existing	14.39	15	\$6.75	53%	at stock turnover	\$0.05	0.12	0.11	Annual Energy Outlook, 2015
Data Center	Cooling	Room AC	1 kBTU/hr	Existing	53.00	15	\$23.62	3%	at stock turnover	\$0.05	0.02	0.02	Annual Energy Outlook, 2015
Data Center	Cooling	Evaporative AC	11 per TR	Existing	0.00	15	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	New Buildings Institute Study, 2006
Data Center	Cooling	Air-Source Heat Pump	1 kBTU/hr	Existing	27.73	15	\$21.65	4%	at stock turnover	\$0.08	0.01	0.01	Annual Energy Outlook, 2015
Data Center	Heating	Air-Source Heat Pump	1 kBTU/hr	Existing	0.80	15	\$21.65	4%	at stock turnover	\$0.08	0.00	0.00	Annual Energy Outlook, 2015

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Data Center	Cooling	Geothermal Heat Pump	1 kBtu/hr	Existing	67.40	25	\$26.36	2%	at stock turnover	\$0.03	0.02	0.02	Annual Energy Outlook, 2015
Data Center	Heating	Geothermal Heat Pump	1 kBtu/hr	Existing	2.71	25	\$26.36	2%	at stock turnover	\$0.03	0.00	0.00	Annual Energy Outlook, 2015
Data Center	Heating	Electric Furnace	1 kBtu/hr	Existing	0.00	18	\$0.00	1%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Data Center	Heating	Electric Room Heat	3.5 kBtu/hr	Existing	0.00	18	\$0.00	20%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Data Center	Ventilation	Ventilation	1000 CFM	Existing	4,967.94	20	\$1,219.71	100%	at stock turnover	\$0.02	0.98	0.91	AEG-BEST
Data Center	Water Heating	Water Heater	65 gallons	Existing	2,404.20	13	\$3,537.01	45%	at stock turnover	\$0.17	0.03	0.03	7th Power Plan
Data Center	Interior Lighting	Screw-in	lamps	Existing	74.52	8	\$3.95	100%	at stock turnover	\$0.00	0.03	0.05	7th Power Plan
Data Center	Interior Lighting	Linear Lighting	lamps	Existing	104.99	17	\$52.83	100%	at stock turnover	\$0.04	0.35	0.31	7th Power Plan
Data Center	Interior Lighting	High-Bay Fixtures	lamps	Existing	590.66	15	\$123.86	100%	at stock turnover	\$0.02	0.21	0.18	Annual Energy Outlook, 2015
Data Center	Exterior Lighting	Screw-in	lamps	Existing	97.58	8	\$3.95	100%	at stock turnover	\$0.00	0.00	0.01	7th Power Plan
Data Center	Exterior Lighting	Linear Lighting	lamps	Existing	136.80	17	\$52.83	100%	at stock turnover	\$0.03	0.02	0.02	7th Power Plan
Data Center	Exterior Lighting	Area Lighting	lamps	Existing	1,214.91	15	\$44.55	100%	at stock turnover	-\$0.02	0.10	0.08	Annual Energy Outlook, 2015
Data Center	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	Existing	1,507.00	11	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Data Center	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	Existing	605.00	15	\$0.00	14%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Data Center	Refrigeration	Glass Door Display	1 unit	Existing	767.00	15	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Data Center	Refrigeration	Open Display Case	1 unit	Existing	1,438.00	10	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Data Center	Refrigeration	Icemaker	1 unit	Existing	488.36	9	\$1,056.09	45%	at stock turnover	\$0.33	0.00	0.00	ENERGY STAR
Data Center	Refrigeration	Vending Machine	1 unit	Existing	89.99	10	\$42.81	45%	at stock turnover	\$0.06	0.00	0.00	EIA 2011-2012 Ref. Case
Data Center	Food Preparation	Oven	1 unit	Existing	16,781.28	10	\$1,067.99	66%	at stock turnover	-\$0.01	0.00	0.00	RTF Workbook

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Data Center	Food Preparation	Fryer	1 unit	Existing	3,200.89	10	\$782.02	76%	at stock turnover	\$0.03	0.00	0.00	RTF Workbook
Data Center	Food Preparation	Dishwasher	1 unit	Existing	1,497.99	15	\$564.57	43%	at stock turnover	-\$0.11	0.00	0.00	ENERGY STAR
Data Center	Food Preparation	Hot Food Container	1 unit	Existing	891.28	20	\$490.95	43%	at stock turnover	\$0.05	0.00	0.00	RTF Workbook
Data Center	Food Preparation	Steamer	1 unit	Existing	73,535.33	9	\$837.45	43%	at stock turnover	-\$0.02	0.00	0.00	RTF Workbook
Data Center	Office Equipment	Desktop Computer	1 unit	Existing	137.22	5	\$0.01	100%	at stock turnover	\$0.00	0.19	0.16	7th Power Plan
Data Center	Office Equipment	Laptop	1 unit	Existing	40.95	4	\$0.01	100%	at stock turnover	\$0.00	0.01	0.01	7th Power Plan
Data Center	Office Equipment	Monitor	1 unit	Existing	34.06	5	\$0.01	100%	at stock turnover	\$0.00	0.01	0.01	7th Power Plan
Data Center	Office Equipment	Server	1 unit	Existing	82.32	4	\$0.01	100%	at stock turnover	\$0.00	2.13	1.86	AEG Research
Data Center	Office Equipment	Printer/Copier/Fax	1 unit	Existing	247.75	6	\$0.01	100%	at stock turnover	\$0.00	0.00	0.00	ENERGY STAR
Data Center	Office Equipment	POS Terminal	1 unit	Existing	137.22	5	\$0.01	40%	at stock turnover	\$0.00	0.00	0.00	7th Power Plan
Data Center	Miscellaneous	Non-HVAC Motors	1 unit	Existing	0.00	15	\$0.00	90%	at stock turnover	\$0.00	0.00	0.00	N/A
Data Center	Miscellaneous	Pool Pump	1 unit	Existing	0.00	10	\$246.30	0%	at stock turnover	\$0.00	0.00	0.00	Southern California Edison
Data Center	Miscellaneous	Pool Heater	1 unit	Existing	0.00	15	\$3,546.07	0%	at stock turnover	\$0.00	0.00	0.00	AEG Research
Data Center	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Data Center	Cooling	Air-Cooled Chiller	1 kBTU/hr	New	84.13	20	\$26.36	16%	at stock turnover	\$0.03	0.25	0.23	Annual Energy Outlook, 2015
Data Center	Cooling	Water-Cooled Chiller	1 kBTU/hr	New	126.27	25	\$12.65	10%	at stock turnover	\$0.01	0.19	0.17	Annual Energy Outlook, 2015
Data Center	Cooling	RTU	1 kBTU/hr	New	13.99	15	\$6.75	53%	at stock turnover	\$0.05	0.13	0.12	Annual Energy Outlook, 2015
Data Center	Cooling	Room AC	1 kBTU/hr	New	46.37	15	\$23.62	3%	at stock turnover	\$0.05	0.02	0.02	Annual Energy Outlook, 2015
Data Center	Cooling	Evaporative AC	11 per TR	New	0.00	15	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	New Buildings Institute Study, 2006

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Data Center	Cooling	Air-Source Heat Pump	1 kBTU/hr	New	23.95	15	\$21.65	4%	at stock turnover	\$0.09	0.01	0.01	Annual Energy Outlook, 2015
Data Center	Heating	Air-Source Heat Pump	1 kBTU/hr	New	0.77	15	\$21.65	4%	at stock turnover	\$0.09	0.00	0.00	Annual Energy Outlook, 2015
Data Center	Cooling	Geothermal Heat Pump	1 kBTU/hr	New	48.53	25	\$26.36	2%	at stock turnover	\$0.05	0.01	0.01	Annual Energy Outlook, 2015
Data Center	Heating	Geothermal Heat Pump	1 kBTU/hr	New	1.25	25	\$26.36	2%	at stock turnover	\$0.05	0.00	0.00	Annual Energy Outlook, 2015
Data Center	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	1%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Data Center	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	20%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Data Center	Ventilation	Ventilation	1000 CFM	New	4,299.61	20	\$1,219.71	100%	at stock turnover	\$0.03	0.98	0.92	AEG-BEST
Data Center	Water Heating	Water Heater	65 gallons	New	2,404.20	13	\$3,537.01	45%	at stock turnover	\$0.17	0.03	0.03	7th Power Plan
Data Center	Interior Lighting	Screw-in	lamps	New	74.60	8	\$3.95	100%	at stock turnover	\$0.00	0.03	0.04	7th Power Plan
Data Center	Interior Lighting	Linear Lighting	lamps	New	104.99	17	\$52.83	100%	at stock turnover	\$0.04	0.34	0.31	7th Power Plan
Data Center	Interior Lighting	High-Bay Fixtures	lamps	New	591.59	15	\$123.86	100%	at stock turnover	\$0.02	0.23	0.21	Annual Energy Outlook, 2015
Data Center	Exterior Lighting	Screw-in	lamps	New	97.67	8	\$3.95	100%	at stock turnover	\$0.00	0.00	0.01	7th Power Plan
Data Center	Exterior Lighting	Linear Lighting	lamps	New	136.80	17	\$52.83	100%	at stock turnover	\$0.03	0.02	0.02	7th Power Plan
Data Center	Exterior Lighting	Area Lighting	lamps	New	1,214.91	15	\$44.55	100%	at stock turnover	-\$0.02	0.11	0.10	Annual Energy Outlook, 2015
Data Center	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	New	1,507.00	11	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Data Center	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	New	605.00	15	\$0.00	14%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Data Center	Refrigeration	Glass Door Display	1 unit	New	767.00	15	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Data Center	Refrigeration	Open Display Case	1 unit	New	1,438.00	10	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Data Center	Refrigeration	Icemaker	1 unit	New	488.36	9	\$1,056.09	45%	at stock turnover	\$0.33	0.00	0.00	ENERGY STAR

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Data Center	Refrigeration	Vending Machine	1 unit	New	89.99	10	\$42.81	45%	at stock turnover	\$0.06	0.00	0.00	EIA 2011-2012 Ref. Case
Data Center	Food Preparation	Oven	1 unit	New	16,781.28	10	\$1,067.99	66%	at stock turnover	-\$0.01	0.00	0.00	RTF Workbook
Data Center	Food Preparation	Fryer	1 unit	New	3,200.89	10	\$782.02	76%	at stock turnover	\$0.03	0.00	0.00	RTF Workbook
Data Center	Food Preparation	Dishwasher	1 unit	New	1,497.99	15	\$564.57	43%	at stock turnover	-\$0.11	0.00	0.00	ENERGY STAR
Data Center	Food Preparation	Hot Food Container	1 unit	New	891.28	20	\$490.95	43%	at stock turnover	\$0.05	0.00	0.00	RTF Workbook
Data Center	Food Preparation	Steamer	1 unit	New	73,535.33	9	\$837.45	43%	at stock turnover	-\$0.02	0.00	0.00	RTF Workbook
Data Center	Office Equipment	Desktop Computer	1 unit	New	137.22	5	\$0.01	100%	at stock turnover	\$0.00	0.14	0.12	7th Power Plan
Data Center	Office Equipment	Laptop	1 unit	New	40.95	4	\$0.01	100%	at stock turnover	\$0.00	0.01	0.01	7th Power Plan
Data Center	Office Equipment	Monitor	1 unit	New	34.06	5	\$0.01	100%	at stock turnover	\$0.00	0.01	0.01	7th Power Plan
Data Center	Office Equipment	Server	1 unit	New	82.32	4	\$0.01	100%	at stock turnover	\$0.00	1.59	1.42	AEG Research
Data Center	Office Equipment	Printer/Copier/Fax	1 unit	New	247.75	6	\$0.01	100%	at stock turnover	\$0.00	0.00	0.00	ENERGY STAR
Data Center	Office Equipment	POS Terminal	1 unit	New	137.22	5	\$0.01	40%	at stock turnover	\$0.00	0.00	0.00	7th Power Plan
Data Center	Miscellaneous	Non-HVAC Motors	1 unit	New	0.00	15	\$0.00	90%	at stock turnover	\$0.00	0.00	0.00	N/A
Data Center	Miscellaneous	Pool Pump	1 unit	New	0.00	10	\$246.30	0%	at stock turnover	\$0.00	0.00	0.00	Southern California Edison
Data Center	Miscellaneous	Pool Heater	1 unit	New	0.00	15	\$3,546.07	0%	at stock turnover	\$0.00	0.00	0.00	AEG Research
Data Center	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Miscellaneous	Cooling	Air-Cooled Chiller	1 kBTU/hr	Existing	12.42	20	\$26.36	16%	at stock turnover	\$0.20	161.10	146.51	Annual Energy Outlook, 2015
Miscellaneous	Cooling	Water-Cooled Chiller	1 kBTU/hr	Existing	18.33	25	\$12.65	10%	at stock turnover	\$0.06	123.02	111.88	Annual Energy Outlook, 2015
Miscellaneous	Cooling	RTU	1 kBTU/hr	Existing	1.95	15	\$6.75	53%	at stock turnover	\$0.37	176.52	157.43	Annual Energy Outlook, 2015

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Miscellaneous	Cooling	Room AC	1 kBTU/hr	Existing	7.18	15	\$23.62	3%	at stock turnover	\$0.35	58.09	51.81	Annual Energy Outlook, 2015
Miscellaneous	Cooling	Evaporative AC	11 per TR	Existing	0.00	15	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	New Buildings Institute Study, 2006
Miscellaneous	Cooling	Air-Source Heat Pump	1 kBTU/hr	Existing	3.76	15	\$21.65	4%	at stock turnover	\$0.34	24.12	22.20	Annual Energy Outlook, 2015
Miscellaneous	Heating	Air-Source Heat Pump	1 kBTU/hr	Existing	2.95	15	\$21.65	4%	at stock turnover	\$0.34	18.95	17.44	Annual Energy Outlook, 2015
Miscellaneous	Cooling	Geothermal Heat Pump	1 kBTU/hr	Existing	9.13	25	\$26.36	2%	at stock turnover	\$0.13	12.08	11.20	Annual Energy Outlook, 2015
Miscellaneous	Heating	Geothermal Heat Pump	1 kBTU/hr	Existing	9.51	25	\$26.36	2%	at stock turnover	\$0.13	12.58	11.66	Annual Energy Outlook, 2015
Miscellaneous	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	1%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Miscellaneous	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	20%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Miscellaneous	Ventilation	Ventilation	1000 CFM	Existing	5,799.07	20	\$1,219.71	100%	at stock turnover	\$0.02	611.43	566.89	AEG-BEST
Miscellaneous	Water Heating	Water Heater	65 gallons	Existing	2,404.26	13	\$3,537.01	45%	at stock turnover	\$0.17	1,641.22	1,472.60	7th Power Plan
Miscellaneous	Interior Lighting	Screw-in	lamps	Existing	90.65	8	\$3.95	100%	at stock turnover	\$0.00	537.90	854.10	7th Power Plan
Miscellaneous	Interior Lighting	Linear Lighting	lamps	Existing	135.17	17	\$52.83	100%	at stock turnover	\$0.03	2,791.70	2,409.38	7th Power Plan
Miscellaneous	Interior Lighting	High-Bay Fixtures	lamps	Existing	775.21	15	\$123.86	100%	at stock turnover	\$0.02	2,426.81	2,102.43	Annual Energy Outlook, 2015
Miscellaneous	Exterior Lighting	Screw-in	lamps	Existing	99.77	8	\$3.95	100%	at stock turnover	\$0.00	104.19	165.44	7th Power Plan
Miscellaneous	Exterior Lighting	Linear Lighting	lamps	Existing	156.22	17	\$52.83	100%	at stock turnover	\$0.02	112.34	96.96	7th Power Plan
Miscellaneous	Exterior Lighting	Area Lighting	lamps	Existing	1,289.19	15	\$44.55	100%	at stock turnover	-\$0.02	1,368.84	1,159.26	Annual Energy Outlook, 2015
Miscellaneous	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	Existing	1,507.00	11	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Miscellaneous	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	Existing	605.00	15	\$0.00	14%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Miscellaneous	Refrigeration	Glass Door Display	1 unit	Existing	767.00	15	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Miscellaneous	Refrigeration	Open Display Case	1 unit	Existing	1,438.00	10	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Miscellaneous	Refrigeration	Icemaker	1 unit	Existing	488.36	9	\$1,056.09	45%	at stock turnover	\$0.33	35.63	32.46	ENERGY STAR
Miscellaneous	Refrigeration	Vending Machine	1 unit	Existing	89.99	10	\$42.81	45%	at stock turnover	\$0.06	15.90	14.44	EIA 2011-2012 Ref. Case
Miscellaneous	Food Preparation	Oven	1 unit	Existing	16,781.28	10	\$1,067.99	66%	at stock turnover	-\$0.01	133.82	120.93	RTF Workbook
Miscellaneous	Food Preparation	Fryer	1 unit	Existing	3,200.89	10	\$782.02	76%	at stock turnover	\$0.03	25.53	22.98	RTF Workbook
Miscellaneous	Food Preparation	Dishwasher	1 unit	Existing	1,497.99	15	\$564.57	43%	at stock turnover	-\$0.11	11.36	10.52	ENERGY STAR
Miscellaneous	Food Preparation	Hot Food Container	1 unit	Existing	891.28	20	\$490.95	43%	at stock turnover	\$0.05	8.62	7.97	RTF Workbook
Miscellaneous	Food Preparation	Steamer	1 unit	Existing	73,535.33	9	\$837.45	43%	at stock turnover	-\$0.02	110.09	99.95	RTF Workbook
Miscellaneous	Office Equipment	Desktop Computer	1 unit	Existing	137.22	5	\$0.01	100%	at stock turnover	\$0.00	237.99	199.79	7th Power Plan
Miscellaneous	Office Equipment	Laptop	1 unit	Existing	40.95	4	\$0.01	100%	at stock turnover	\$0.00	28.98	25.21	7th Power Plan
Miscellaneous	Office Equipment	Monitor	1 unit	Existing	34.06	5	\$0.01	100%	at stock turnover	\$0.00	14.90	12.51	7th Power Plan
Miscellaneous	Office Equipment	Server	1 unit	Existing	82.32	4	\$0.01	100%	at stock turnover	\$0.00	101.22	88.59	AEG Research
Miscellaneous	Office Equipment	Printer/Copier/Fax	1 unit	Existing	247.75	6	\$0.01	100%	at stock turnover	\$0.00	5.37	4.76	ENERGY STAR
Miscellaneous	Office Equipment	POS Terminal	1 unit	Existing	137.22	5	\$0.01	40%	at stock turnover	\$0.00	15.61	13.68	7th Power Plan
Miscellaneous	Miscellaneous	Non-HVAC Motors	1 unit	Existing	0.00	15	\$0.00	90%	at stock turnover	\$0.00	0.00	0.00	N/A
Miscellaneous	Miscellaneous	Pool Pump	1 unit	Existing	1,591.27	10	\$246.30	0%	at stock turnover	\$0.02	0.85	0.78	Southern California Edison
Miscellaneous	Miscellaneous	Pool Heater	1 unit	Existing	16,973.34	15	\$3,546.07	0%	at stock turnover	\$0.02	0.37	0.34	AEG Research
Miscellaneous	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Miscellaneous	Cooling	Air-Cooled Chiller	1 kBTU/hr	New	10.69	20	\$26.36	16%	at stock turnover	\$0.23	207.78	190.92	Annual Energy Outlook, 2015

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Miscellaneous	Cooling	Water-Cooled Chiller	1 kBTU/hr	New	15.95	25	\$12.65	10%	at stock turnover	\$0.07	133.32	121.41	Annual Energy Outlook, 2015
Miscellaneous	Cooling	RTU	1 kBTU/hr	New	1.92	15	\$6.75	53%	at stock turnover	\$0.38	209.77	191.52	Annual Energy Outlook, 2015
Miscellaneous	Cooling	Room AC	1 kBTU/hr	New	6.28	15	\$23.62	3%	at stock turnover	\$0.40	61.45	56.10	Annual Energy Outlook, 2015
Miscellaneous	Cooling	Evaporative AC	11 per TR	New	0.00	15	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	New Buildings Institute Study, 2006
Miscellaneous	Cooling	Air-Source Heat Pump	1 kBTU/hr	New	3.24	15	\$21.65	4%	at stock turnover	\$0.38	26.57	24.85	Annual Energy Outlook, 2015
Miscellaneous	Heating	Air-Source Heat Pump	1 kBTU/hr	New	2.83	15	\$21.65	4%	at stock turnover	\$0.38	23.18	21.68	Annual Energy Outlook, 2015
Miscellaneous	Cooling	Geothermal Heat Pump	1 kBTU/hr	New	8.99	25	\$26.36	2%	at stock turnover	\$0.16	14.93	13.86	Annual Energy Outlook, 2015
Miscellaneous	Heating	Geothermal Heat Pump	1 kBTU/hr	New	5.70	25	\$26.36	2%	at stock turnover	\$0.16	9.47	8.79	Annual Energy Outlook, 2015
Miscellaneous	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	1%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Miscellaneous	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	20%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Miscellaneous	Ventilation	Ventilation	1000 CFM	New	5,469.83	20	\$1,219.71	100%	at stock turnover	\$0.02	860.95	806.51	AEG-BEST
Miscellaneous	Water Heating	Water Heater	65 gallons	New	2,404.26	13	\$3,537.01	45%	at stock turnover	\$0.17	1,873.87	1,728.17	7th Power Plan
Miscellaneous	Interior Lighting	Screw-in	lamps	New	89.66	8	\$3.95	100%	at stock turnover	\$0.00	591.36	627.58	7th Power Plan
Miscellaneous	Interior Lighting	Linear Lighting	lamps	New	135.17	17	\$52.83	100%	at stock turnover	\$0.03	3,005.30	2,688.01	7th Power Plan
Miscellaneous	Interior Lighting	High-Bay Fixtures	lamps	New	763.59	15	\$123.86	100%	at stock turnover	\$0.02	2,894.93	2,592.53	Annual Energy Outlook, 2015
Miscellaneous	Exterior Lighting	Screw-in	lamps	New	98.68	8	\$3.95	100%	at stock turnover	\$0.00	114.54	121.56	7th Power Plan
Miscellaneous	Exterior Lighting	Linear Lighting	lamps	New	156.22	17	\$52.83	100%	at stock turnover	\$0.02	120.94	108.17	7th Power Plan
Miscellaneous	Exterior Lighting	Area Lighting	lamps	New	1,289.19	15	\$44.55	100%	at stock turnover	-\$0.02	1,671.91	1,477.23	Annual Energy Outlook, 2015
Miscellaneous	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	New	1,507.00	11	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case

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Miscellaneous	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	New	605.00	15	\$0.00	14%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Miscellaneous	Refrigeration	Glass Door Display	1 unit	New	767.00	15	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Miscellaneous	Refrigeration	Open Display Case	1 unit	New	1,438.00	10	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Miscellaneous	Refrigeration	Icemaker	1 unit	New	488.36	9	\$1,056.09	45%	at stock turnover	\$0.33	39.20	36.31	ENERGY STAR
Miscellaneous	Refrigeration	Vending Machine	1 unit	New	89.99	10	\$42.81	45%	at stock turnover	\$0.06	15.01	13.89	EIA 2011-2012 Ref. Case
Miscellaneous	Food Preparation	Oven	1 unit	New	16,781.28	10	\$1,067.99	66%	at stock turnover	-\$0.01	152.17	140.80	RTF Workbook
Miscellaneous	Food Preparation	Fryer	1 unit	New	3,200.89	10	\$782.02	76%	at stock turnover	\$0.03	27.80	25.65	RTF Workbook
Miscellaneous	Food Preparation	Dishwasher	1 unit	New	1,497.99	15	\$564.57	43%	at stock turnover	-\$0.11	7.94	7.44	ENERGY STAR
Miscellaneous	Food Preparation	Hot Food Container	1 unit	New	891.28	20	\$490.95	43%	at stock turnover	\$0.05	13.43	12.55	RTF Workbook
Miscellaneous	Food Preparation	Steamer	1 unit	New	73,535.33	9	\$837.45	43%	at stock turnover	-\$0.02	137.25	127.29	RTF Workbook
Miscellaneous	Office Equipment	Desktop Computer	1 unit	New	137.22	5	\$0.01	100%	at stock turnover	\$0.00	190.90	166.89	7th Power Plan
Miscellaneous	Office Equipment	Laptop	1 unit	New	40.95	4	\$0.01	100%	at stock turnover	\$0.00	24.89	22.18	7th Power Plan
Miscellaneous	Office Equipment	Monitor	1 unit	New	34.06	5	\$0.01	100%	at stock turnover	\$0.00	11.95	10.45	7th Power Plan
Miscellaneous	Office Equipment	Server	1 unit	New	82.32	4	\$0.01	100%	at stock turnover	\$0.00	82.88	74.37	AEG Research
Miscellaneous	Office Equipment	Printer/Copier/Fax	1 unit	New	247.75	6	\$0.01	100%	at stock turnover	\$0.00	5.43	4.97	ENERGY STAR
Miscellaneous	Office Equipment	POS Terminal	1 unit	New	137.22	5	\$0.01	40%	at stock turnover	\$0.00	13.97	12.59	7th Power Plan
Miscellaneous	Miscellaneous	Non-HVAC Motors	1 unit	New	0.00	15	\$0.00	90%	at stock turnover	\$0.00	0.00	0.00	N/A
Miscellaneous	Miscellaneous	Pool Pump	1 unit	New	1,591.27	10	\$246.30	0%	at stock turnover	\$0.02	1.08	1.02	Southern California Edison
Miscellaneous	Miscellaneous	Pool Heater	1 unit	New	16,973.34	15	\$3,546.07	0%	at stock turnover	\$0.02	0.47	0.44	AEG Research

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Miscellaneous	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Large Office	Cooling	Insulation - Ceiling	sqft roof	Existing	0.08	45	\$1.28	15%	35%	\$0.05	8.73	8.32	Building Energy Simulation Tool
Large Office	Heating	Insulation - Ceiling	sqft roof	Existing	1.26	45	\$1.28	15%	35%	\$0.05	42.28	38.58	Building Energy Simulation Tool
Large Office	Ventilation	Insulation - Ceiling	sqft roof	Existing	0.66	45	\$1.28	15%	35%	\$0.05	77.79	78.92	Building Energy Simulation Tool
Large Office	Cooling	Insulation - Ducting	sqft duct	Existing	0.13	20	\$0.84	15%	35%	\$0.00	20.35	20.34	Building Energy Simulation Tool
Large Office	Heating	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.84	15%	35%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Large Office	Ventilation	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.84	15%	35%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Large Office	Cooling	Building Shell - Cool Roofs	sqft roof	Existing	0.41	20	\$0.78	45%	50%	\$10.00	10.38	10.92	Building Energy Simulation Tool
Large Office	Heating	Building Shell - Cool Roofs	sqft roof	Existing	-0.55	20	\$0.78	45%	50%	\$10.00	-4.44	-4.34	Building Energy Simulation Tool
Large Office	Ventilation	Building Shell - Cool Roofs	sqft roof	Existing	-0.31	20	\$0.78	45%	50%	\$10.00	-8.89	-9.41	Building Energy Simulation Tool
Large Office	Cooling	Insulation - Wall Cavity	sqft wall	Existing	-0.26	45	\$0.78	15%	35%	\$0.02	-24.37	-23.12	Building Energy Simulation Tool
Large Office	Heating	Insulation - Wall Cavity	sqft wall	Existing	1.98	45	\$0.78	15%	35%	\$0.02	57.55	51.96	Building Energy Simulation Tool
Large Office	Ventilation	Insulation - Wall Cavity	sqft wall	Existing	1.04	45	\$0.78	15%	35%	\$0.02	106.88	106.69	Building Energy Simulation Tool
Large Office	Cooling	HVAC - Duct Repair and Sealing	tonCool	Existing	4.89	18	\$0.57	15%	50%	\$10.00	7.46	7.84	Building Energy Simulation Tool
Large Office	Heating	HVAC - Duct Repair and Sealing	tonCool	Existing	-9.85	18	\$0.57	15%	50%	\$10.00	-4.77	-4.66	Building Energy Simulation Tool
Large Office	Ventilation	HVAC - Duct Repair and Sealing	tonCool	Existing	-5.55	18	\$0.57	15%	50%	\$10.00	-9.55	-10.12	Building Energy Simulation Tool
Large Office	Cooling	Windows - High Efficiency Glazing	sqft window	Existing	6.08	30	\$35.93	48%	48%	\$0.08	0.00	0.00	7th Power Plan
Large Office	Heating	Windows - High Efficiency Glazing	sqft window	Existing	22.30	30	\$35.93	48%	48%	\$0.08	0.00	0.00	7th Power Plan
Large Office	Ventilation	Windows - High Efficiency Glazing	sqft window	Existing	6.82	30	\$35.93	48%	48%	\$0.08	0.00	0.00	7th Power Plan

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Large Office	Cooling	Chiller - Chilled Water Reset	ChillCtrl	Existing	3,366.52	10	\$884.85	15%	75%	\$0.03	16.42	15.43	AEG-BEST
Large Office	Cooling	Chiller - Chilled Water Variable-Flow System	HP cool	Existing	406.33	15	\$332.55	15%	75%	\$0.08	274.64	260.05	AEG-BEST
Large Office	Cooling	Chiller - Variable Speed Fans	HP fan	Existing	878.94	15	\$208.36	15%	75%	\$0.02	59.77	55.77	New Jersey TRM
Large Office	Cooling	Water-Cooled Chiller - Condenser Water Reset	ChillCtrl	Existing	29,723.22	10	\$884.85	15%	75%	\$0.00	55.10	51.74	AEG-BEST
Large Office	Cooling	HVAC - Economizer	HP cool	Existing	110.87	10	\$168.42	18%	75%	\$0.18	228.81	224.16	AEG-BEST
Large Office	Heating	Space Heating - Heat Recovery Ventilator	CFM	Existing	4.55	14	\$5.08	3%	75%	\$0.12	160.97	145.00	7th Power Plan
Large Office	Ventilation	Ventilation - ECM on VAV Boxes	sqft	Existing	0.54	18	\$0.25	15%	20%	\$0.04	48.42	48.88	7th Power Plan
Large Office	Ventilation	Ventilation - Variable Speed Control	sqft	Existing	0.07	15	\$181.39	13%	50%	\$252.77	45.75	49.70	AEG-BEST
Large Office	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.03	15	\$0.25	15%	75%	\$0.82	33.24	34.92	7th Power Plan
Large Office	Cooling	Destratification Fans (HVLS)	Strat Fan	Existing	3,415.51	15	\$7,270.90	15%	30%	\$0.05	77.12	74.95	AEG Research
Large Office	Heating	Destratification Fans (HVLS)	Strat Fan	Existing	11,728.54	15	\$7,270.90	15%	30%	\$0.05	82.91	73.39	AEG Research
Large Office	Cooling	RTU - Maintenance	tonCool	Existing	51.44	3	\$35.00	15%	45%	\$0.19	44.95	47.65	AEG Research
Large Office	Cooling	RTU - Advanced Controls	sqft	Existing	0.12	15	\$0.07	15%	45%	\$0.06	34.55	32.87	7th Power Plan
Large Office	Cooling	RTU - Evaporative Precooler	tonCool	Existing	105.66	15	\$681.62	15%	75%	\$0.58	166.61	165.08	AEG Research
Large Office	Cooling	Ductless Mini Split Heat Pump	tonCool	Existing	236.06	15	\$3,359.26	15%	25%	\$0.48	3.42	3.66	7th Power Plan
Large Office	Heating	Ductless Mini Split Heat Pump	tonCool	Existing	415.13	15	\$3,359.26	15%	25%	\$0.48	44.92	42.36	7th Power Plan
Large Office	Cooling	Thermostat - WiFi/Interactive	sqft	Existing	0.41	5	\$0.66	30%	40%	\$0.08	63.53	65.12	7th Power Plan
Large Office	Heating	Thermostat - WiFi/Interactive	sqft	Existing	0.72	5	\$0.66	30%	40%	\$0.08	35.69	33.91	7th Power Plan
Large Office	Ventilation	Thermostat - WiFi/Interactive	sqft	Existing	0.40	5	\$0.66	30%	40%	\$0.08	70.13	72.74	7th Power Plan
Large Office	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	Existing	90.28	10	\$8.35	25%	65%	\$0.01	6.95	10.99	Illinois TRM
Large Office	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	Existing	93.54	10	\$11.64	25%	65%	-\$0.10	3.59	5.72	7th Power Plan

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Large Office	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	Existing	63.64	15	\$36.75	15%	25%	\$0.03	1.44	1.99	Hawaii TRM
Large Office	Water Heating	Water Heater - Pipe Insulation	PipeFeet	Existing	407.01	15	\$14.88	16%	75%	\$0.00	19.65	28.76	AEG-BEST
Large Office	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	Existing	61.70	4	\$144.04	25%	65%	-\$0.31	4.62	7.39	7th Power Plan
Large Office	Water Heating	Water Heater - Thermostat Setback	WHunits	Existing	63.66	2	\$5.00	15%	75%	\$0.02	9.38	14.81	Illinois TRM
Large Office	Water Heating	Water Heater - Solar System	PipeFeet	Existing	1,399.81	20	\$215.28	1%	30%	\$0.01	32.74	49.01	AEG-BEST
Large Office	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.34	15	\$0.35	3%	23%	\$0.08	153.18	172.07	7th Power Plan
Large Office	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.47	15	\$0.58	3%	23%	\$0.09	206.58	236.88	7th Power Plan
Large Office	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	Existing	167.06	15	\$54.41	1%	3%	\$0.03	4.43	5.51	7th Power Plan
Large Office	Interior Lighting	Interior Lighting - Timeclocks and Timers	occ sens	Existing	0.00	8	\$111.67	7%	15%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Large Office	Interior Lighting	Interior Lighting - Skylights	1000 sqft	Existing	0.00	15	\$1,006.35	15%	25%	\$0.00	0.00	0.00	AEG Research
Large Office	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	1000 sqft	Existing	229.62	16	\$1,807.69	5%	15%	\$0.56	39.76	52.45	7th Power Plan
Large Office	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	Existing	2,406.11	11	\$30.80	15%	50%	\$0.00	154.36	184.98	Illinois TRM
Large Office	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	ELtg Watts	Existing	1.28	8	\$0.63	15%	25%	\$0.05	92.97	124.10	7th Power Plan
Large Office	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	Existing	79.26	8	\$55.10	15%	25%	\$0.07	47.01	64.61	Pacific Gas and Electric Research
Large Office	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	Existing	94.98	7	\$3,400.00	15%	30%	\$3.96	83.17	118.30	AEG Research
Large Office	Refrigeration	Refrigeration - Anti-Sweat Heater	Fridge Feet	Existing	15.50	8	\$48.18	0%	0%	\$0.48	0.00	0.00	7th Power Plan
Large Office	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	Existing	20.99	4	\$10.44	0%	0%	\$0.13	0.00	0.00	Michigan Energy Measures Database
Large Office	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	Existing	200.03	16	\$165.20	0%	0%	\$0.09	0.00	0.00	7th Power Plan
Large Office	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	Existing	26.51	15	\$335.85	0%	0%	\$1.33	0.00	0.00	7th Power Plan

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Large Office	Refrigeration	Refrigeration - Strip Curtain	Walkin Door	Existing	21.54	2	\$10.41	0%	0%	\$0.23	0.00	0.00	7th Power Plan
Large Office	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	Existing	0.41	15	\$45.43	0%	0%	\$11.11	0.00	0.00	Annual Energy Outlook, 2015
Large Office	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	Existing	8.90	15	\$313.82	0%	0%	\$3.70	0.00	0.00	Annual Energy Outlook, 2015
Large Office	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	Existing	131.54	10	\$506.05	0%	0%	\$0.50	0.00	0.00	Vermont TRM
Large Office	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	Existing	9.34	6	\$45.41	0%	0%	\$0.91	0.00	0.00	7th Power Plan
Large Office	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	Existing	0.75	8	\$3.72	0%	0%	\$0.76	0.00	0.00	7th Power Plan
Large Office	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	Existing	176.14	5	\$45.85	0%	0%	\$0.06	0.00	0.00	Illinois TRM
Large Office	Refrigeration	Grocery - ECMs for Display Cases	Fridge Case	Existing	38.70	16	\$165.20	0%	0%	\$0.43	0.00	0.00	7th Power Plan
Large Office	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	Existing	1,420.46	5	\$187.94	25%	75%	\$0.03	12.10	10.74	Illinois TRM
Large Office	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	Existing	5,840.22	18	\$8,526.67	25%	50%	\$0.13	103.70	106.08	7th Power Plan
Large Office	Office Equipment	Office Equipment - Smart Power Strips	Smart Strip	Existing	124.67	4	\$41.63	10%	50%	\$0.08	217.91	181.15	7th Power Plan
Large Office	Cooling	Lodging - Guest Room Controls	LodgUnit	Existing	189.07	15	\$260.00	0%	0%	\$6.03	0.00	0.00	AEG-BEST
Large Office	Heating	Lodging - Guest Room Controls	LodgUnit	Existing	-193.57	15	\$260.00	0%	0%	\$6.03	0.00	0.00	AEG-BEST
Large Office	Office Equipment	Data Center - Best Practice Measures	sqft	Existing	0.05	5	\$0.00	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Office	Cooling	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.01	0%	0%	\$0.03	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Office	Ventilation	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.01	0%	0%	\$0.03	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Office	Interior Lighting	Data Center - Commercially Available Measures	sqft	Existing	0.03	8	\$0.01	0%	0%	\$0.03	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Office	Office Equipment	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.01	0%	0%	\$0.03	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Office	Cooling	Data Center - Cutting Edge Measures	sqft	Existing	0.04	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Large Office	Office Equipment	Data Center - Cutting Edge Measures	sqft	Existing	0.00	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Office	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	Existing	7,740.05	18	\$4,092.80	0%	0%	\$0.05	0.00	0.00	7th Power Plan
Large Office	Miscellaneous	Pool Pump - Timer	perBldg	Existing	0.00	10	\$85.22	15%	75%	\$0.00	0.00	0.00	Ontario Power TRM
Large Office	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	Existing	7,677.09	6	\$35.93	1%	3%	\$0.00	0.00	19.39	7th Power Plan
Large Office	Cooling	Advanced New Construction Designs	sqft	Existing	0.86	25	\$4.11	0%	0%	\$0.07	0.00	0.00	AEG Research
Large Office	Heating	Advanced New Construction Designs	sqft	Existing	1.44	25	\$4.11	0%	0%	\$0.07	0.00	0.00	AEG Research
Large Office	Ventilation	Advanced New Construction Designs	sqft	Existing	0.80	25	\$4.11	0%	0%	\$0.07	0.00	0.00	AEG Research
Large Office	Water Heating	Advanced New Construction Designs	sqft	Existing	0.18	25	\$4.11	0%	0%	\$0.07	0.00	0.00	AEG Research
Large Office	Interior Lighting	Advanced New Construction Designs	sqft	Existing	0.68	25	\$4.11	0%	0%	\$0.07	0.00	0.00	AEG Research
Large Office	Exterior Lighting	Advanced New Construction Designs	sqft	Existing	0.32	25	\$4.11	0%	0%	\$0.07	0.00	0.00	AEG Research
Large Office	Cooling	Strategic Energy Management	sqft	Existing	0.12	3	\$0.35	3%	14%	\$0.12	22.76	24.19	AEG Research
Large Office	Heating	Strategic Energy Management	sqft	Existing	0.22	3	\$0.35	3%	14%	\$0.12	12.69	12.13	AEG Research
Large Office	Ventilation	Strategic Energy Management	sqft	Existing	0.12	3	\$0.35	3%	14%	\$0.12	25.40	27.09	AEG Research
Large Office	Water Heating	Strategic Energy Management	sqft	Existing	0.03	3	\$0.35	3%	14%	\$0.12	2.38	3.83	AEG Research
Large Office	Interior Lighting	Strategic Energy Management	sqft	Existing	0.11	3	\$0.35	3%	14%	\$0.12	19.95	26.72	AEG Research
Large Office	Exterior Lighting	Strategic Energy Management	sqft	Existing	0.05	3	\$0.35	3%	14%	\$0.12	9.35	13.05	AEG Research
Large Office	Refrigeration	Strategic Energy Management	sqft	Existing	0.01	3	\$0.35	3%	14%	\$0.12	2.43	2.13	AEG Research
Large Office	Office Equipment	Strategic Energy Management	sqft	Existing	0.16	3	\$0.35	3%	14%	\$0.12	39.27	33.18	AEG Research
Large Office	Cooling	Commissioning	sqft	Existing	0.17	3	\$0.72	0%	0%	\$0.23	0.00	0.00	AEG Research
Large Office	Heating	Commissioning	sqft	Existing	0.29	3	\$0.72	0%	0%	\$0.23	0.00	0.00	AEG Research
Large Office	Ventilation	Commissioning	sqft	Existing	0.16	3	\$0.72	0%	0%	\$0.23	0.00	0.00	AEG Research

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Large Office	Water Heating	Commissioning	sqft	Existing	0.01	3	\$0.72	0%	0%	\$0.23	0.00	0.00	AEG Research
Large Office	Interior Lighting	Commissioning	sqft	Existing	0.12	3	\$0.72	0%	0%	\$0.23	0.00	0.00	AEG Research
Large Office	Exterior Lighting	Commissioning	sqft	Existing	0.06	3	\$0.72	0%	0%	\$0.23	0.00	0.00	AEG Research
Large Office	Refrigeration	Commissioning	sqft	Existing	0.02	3	\$0.72	0%	0%	\$0.23	0.00	0.00	AEG Research
Large Office	Cooling	Retrocommissioning	sqft	Existing	0.17	3	\$0.46	11%	59%	\$0.15	136.77	145.85	AEG Research
Large Office	Heating	Retrocommissioning	sqft	Existing	0.30	3	\$0.46	11%	59%	\$0.15	76.26	73.12	AEG Research
Large Office	Ventilation	Retrocommissioning	sqft	Existing	0.17	3	\$0.46	11%	59%	\$0.15	152.67	163.28	AEG Research
Large Office	Water Heating	Retrocommissioning	sqft	Existing	0.01	3	\$0.46	11%	59%	\$0.15	4.77	7.69	AEG Research
Large Office	Interior Lighting	Retrocommissioning	sqft	Existing	0.12	3	\$0.46	11%	59%	\$0.15	99.91	134.23	AEG Research
Large Office	Exterior Lighting	Retrocommissioning	sqft	Existing	0.06	3	\$0.46	11%	59%	\$0.15	46.83	65.56	AEG Research
Large Office	Refrigeration	Retrocommissioning	sqft	Existing	0.02	3	\$0.46	11%	59%	\$0.15	24.38	21.45	AEG Research
Large Office	Interior Lighting	Fruit Storage - Lighting Controls	sqft	Existing	0.09	10	\$0.09	0%	0%	\$0.09	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Office	Refrigeration	Fruit Storage Refrigeration Retrofit	sqft	Existing	0.08	10	\$1.09	0%	0%	\$1.86	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Office	Refrigeration	Fruit Storage Refrigeration Tuneup	sqft	Existing	0.02	3	\$0.23	0%	0%	\$3.81	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Office	Refrigeration	Fruit Storage Retrofit - CO2 Scrub	sqft	Existing	0.04	10	\$3.13	0%	0%	\$11.02	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Office	Refrigeration	Fruit Storage Retrofit - Membrane	sqft	Existing	0.01	10	\$0.68	0%	0%	\$11.95	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Office	Cooling	Insulation - Ceiling	sqft roof	New	0.00	45	\$1.28	15%	50%	\$0.15	0.00	0.00	Building Energy Simulation Tool
Large Office	Heating	Insulation - Ceiling	sqft roof	New	0.45	45	\$1.28	15%	50%	\$0.15	14.94	13.88	Building Energy Simulation Tool
Large Office	Ventilation	Insulation - Ceiling	sqft roof	New	0.21	45	\$1.28	15%	50%	\$0.15	27.13	26.06	Building Energy Simulation Tool
Large Office	Cooling	Insulation - Ducting	sqft duct	New	0.22	20	\$0.84	15%	50%	\$0.00	36.28	34.33	Building Energy Simulation Tool
Large Office	Heating	Insulation - Ducting	sqft duct	New	0.00	20	\$0.84	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Large Office	Ventilation	Insulation - Ducting	sqft duct	New	0.00	20	\$0.84	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Large Office	Cooling	Building Shell - Cool Roofs	sqft roof	New	0.07	20	\$0.78	45%	50%	\$10.00	1.12	1.08	Building Energy Simulation Tool
Large Office	Heating	Building Shell - Cool Roofs	sqft roof	New	-0.21	20	\$0.78	45%	50%	\$10.00	-1.01	-0.95	Building Energy Simulation Tool
Large Office	Ventilation	Building Shell - Cool Roofs	sqft roof	New	-0.10	20	\$0.78	45%	50%	\$10.00	-1.88	-1.83	Building Energy Simulation Tool
Large Office	Cooling	Insulation - Wall Cavity	sqft wall	New	0.00	45	\$0.78	15%	50%	\$0.09	-0.44	-0.42	Building Energy Simulation Tool
Large Office	Heating	Insulation - Wall Cavity	sqft wall	New	0.43	45	\$0.78	15%	50%	\$0.09	12.22	11.34	Building Energy Simulation Tool
Large Office	Ventilation	Insulation - Wall Cavity	sqft wall	New	0.20	45	\$0.78	15%	50%	\$0.09	22.29	21.35	Building Energy Simulation Tool
Large Office	Cooling	HVAC - Duct Repair and Sealing	tonCool	New	16.09	18	\$0.57	15%	35%	\$0.00	7.99	7.56	Building Energy Simulation Tool
Large Office	Heating	HVAC - Duct Repair and Sealing	tonCool	New	13.69	18	\$0.57	15%	35%	\$0.00	2.05	1.89	Building Energy Simulation Tool
Large Office	Ventilation	HVAC - Duct Repair and Sealing	tonCool	New	6.46	18	\$0.57	15%	35%	\$0.00	3.74	3.57	Building Energy Simulation Tool
Large Office	Cooling	Windows - High Efficiency Glazing	sqft window	New	5.29	30	\$35.93	66%	66%	\$0.09	0.00	0.00	7th Power Plan
Large Office	Heating	Windows - High Efficiency Glazing	sqft window	New	21.44	30	\$35.93	66%	66%	\$0.09	0.00	0.00	7th Power Plan
Large Office	Ventilation	Windows - High Efficiency Glazing	sqft window	New	5.88	30	\$35.93	66%	66%	\$0.09	0.00	0.00	7th Power Plan
Large Office	Cooling	Chiller - Chilled Water Reset	ChillCtrl	New	3,051.42	10	\$884.85	15%	75%	\$0.03	4.24	3.85	AEG-BEST
Large Office	Cooling	Chiller - Chilled Water Variable-Flow System	HP cool	New	369.32	15	\$332.55	15%	75%	\$0.09	88.19	80.76	AEG-BEST
Large Office	Cooling	Chiller - Variable Speed Fans	HP fan	New	792.52	15	\$208.36	15%	75%	\$0.03	18.91	17.29	New Jersey TRM
Large Office	Cooling	Water-Cooled Chiller - Condenser Water Reset	ChillCtrl	New	26,142.49	10	\$884.85	15%	75%	\$0.00	13.83	12.56	AEG-BEST
Large Office	Cooling	HVAC - Economizer	HP cool	New	94.33	10	\$168.42	18%	75%	\$0.20	55.45	52.19	AEG-BEST
Large Office	Heating	Space Heating - Heat Recovery Ventilator	CFM	New	4.38	14	\$5.08	6%	75%	\$0.13	49.84	43.62	7th Power Plan

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Large Office	Ventilation	Ventilation - ECM on VAV Boxes	sqft	New	0.46	18	\$0.25	15%	20%	\$0.05	23.13	22.12	7th Power Plan
Large Office	Ventilation	Ventilation - Variable Speed Control	sqft	New	0.06	15	\$181.39	19%	50%	\$287.75	12.46	11.88	AEG-BEST
Large Office	Ventilation	Ventilation - Demand Controlled	sqft	New	0.02	15	\$0.25	15%	75%	\$0.93	10.33	9.88	7th Power Plan
Large Office	Cooling	Destratification Fans (HVLS)	Strat Fan	New	2,950.70	15	\$7,270.90	15%	30%	\$0.05	23.83	21.81	AEG Research
Large Office	Heating	Destratification Fans (HVLS)	Strat Fan	New	11,136.11	15	\$7,270.90	15%	30%	\$0.05	26.89	23.60	AEG Research
Large Office	Cooling	RTU - Maintenance	tonCool	New	43.80	3	\$35.00	15%	45%	\$0.22	3.97	3.87	AEG Research
Large Office	Cooling	RTU - Advanced Controls	sqft	New	0.10	15	\$0.07	15%	45%	\$0.07	15.07	14.04	7th Power Plan
Large Office	Cooling	RTU - Evaporative Precooler	tonCool	New	88.98	15	\$681.62	15%	75%	\$0.68	90.36	85.68	AEG Research
Large Office	Cooling	Ductless Mini Split Heat Pump	tonCool	New	197.66	15	\$3,359.26	15%	25%	\$0.53	1.30	1.23	7th Power Plan
Large Office	Heating	Ductless Mini Split Heat Pump	tonCool	New	402.45	15	\$3,359.26	15%	25%	\$0.53	18.42	16.65	7th Power Plan
Large Office	Cooling	Thermostat - WiFi/Interactive	sqft	New	0.36	5	\$0.66	30%	40%	\$0.09	4.08	3.93	7th Power Plan
Large Office	Heating	Thermostat - WiFi/Interactive	sqft	New	0.70	5	\$0.66	30%	40%	\$0.09	2.42	2.13	7th Power Plan
Large Office	Ventilation	Thermostat - WiFi/Interactive	sqft	New	0.34	5	\$0.66	30%	40%	\$0.09	4.47	4.21	7th Power Plan
Large Office	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	New	27.43	10	\$8.35	25%	65%	\$0.02	1.78	2.52	Illinois TRM
Large Office	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	New	28.56	10	\$11.64	25%	65%	-\$0.29	0.93	1.31	7th Power Plan
Large Office	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	New	58.68	15	\$36.75	15%	25%	\$0.03	0.65	0.80	Hawaii TRM
Large Office	Water Heating	Water Heater - Pipe Insulation	PipeFeet	New	359.71	15	\$14.88	1%	75%	\$0.00	8.19	11.01	AEG-BEST
Large Office	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	New	18.81	4	\$144.04	25%	65%	-\$0.93	0.49	0.75	7th Power Plan
Large Office	Water Heating	Water Heater - Thermostat Setback	WHunits	New	58.58	2	\$5.00	15%	75%	\$0.02	0.42	0.64	Illinois TRM
Large Office	Water Heating	Water Heater - Solar System	PipeFeet	New	1,248.35	20	\$215.28	1%	30%	\$0.01	11.44	15.31	AEG-BEST
Large Office	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.34	15	\$0.35	11%	23%	\$0.08	81.18	87.58	7th Power Plan

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Large Office	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.46	15	\$0.58	11%	23%	\$0.09	111.65	121.12	7th Power Plan
Large Office	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	New	163.97	15	\$54.41	1%	3%	\$0.02	1.35	1.58	7th Power Plan
Large Office	Interior Lighting	Interior Lighting - Timeclocks and Timers	occ sens	New	0.00	8	\$111.67	7%	15%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Large Office	Interior Lighting	Interior Lighting - Skylights	1000 sqft	New	0.00	15	\$1,006.35	18%	25%	\$0.00	0.00	0.00	AEG Research
Large Office	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	1000 sqft	New	218.06	16	\$1,807.69	5%	15%	\$0.56	14.42	16.88	7th Power Plan
Large Office	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	New	2,271.84	11	\$30.80	15%	50%	\$0.00	45.30	51.15	Illinois TRM
Large Office	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	ELtg Watts	New	1.13	8	\$0.63	15%	25%	\$0.05	20.35	27.10	7th Power Plan
Large Office	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	New	71.25	8	\$55.10	15%	25%	\$0.07	10.70	14.20	Pacific Gas and Electric Research
Large Office	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	New	86.74	7	\$3,400.00	15%	30%	\$3.93	16.99	23.49	AEG Research
Large Office	Refrigeration	Refrigeration - Anti-Sweat Heater	Fridge Feet	New	12.69	8	\$48.18	0%	0%	\$0.58	0.00	0.00	7th Power Plan
Large Office	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	New	18.08	4	\$10.44	0%	0%	\$0.15	0.00	0.00	Michigan Energy Measures Database
Large Office	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	New	180.18	16	\$165.20	0%	0%	\$0.09	0.00	0.00	7th Power Plan
Large Office	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	New	25.29	15	\$335.85	0%	0%	\$1.40	0.00	0.00	7th Power Plan
Large Office	Refrigeration	Refrigeration - Strip Curtain	Walkin Door	New	20.49	2	\$10.41	0%	0%	\$0.24	0.00	0.00	7th Power Plan
Large Office	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBtuh	New	0.41	15	\$45.43	0%	0%	\$11.72	0.00	0.00	Annual Energy Outlook, 2015
Large Office	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	New	8.49	15	\$313.82	0%	0%	\$3.91	0.00	0.00	Annual Energy Outlook, 2015
Large Office	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	New	120.22	10	\$506.05	0%	0%	\$0.56	0.00	0.00	Vermont TRM
Large Office	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	New	8.72	6	\$45.41	0%	0%	\$0.98	0.00	0.00	7th Power Plan
Large Office	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	New	0.70	8	\$3.72	0%	0%	\$0.82	0.00	0.00	7th Power Plan

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Large Office	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	New	167.17	5	\$45.85	0%	0%	\$0.06	0.00	0.00	Illinois TRM
Large Office	Refrigeration	Grocery - ECMs for Display Cases	Fridge Case	New	36.11	16	\$165.20	0%	0%	\$0.47	0.00	0.00	7th Power Plan
Large Office	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	New	1,387.62	5	\$187.94	25%	75%	\$0.03	1.53	1.29	Illinois TRM
Large Office	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	New	4,948.19	18	\$8,526.67	25%	50%	\$0.15	50.27	48.23	7th Power Plan
Large Office	Office Equipment	Office Equipment - Smart Power Strips	Smart Strip	New	123.44	4	\$41.63	10%	50%	\$0.08	21.90	17.42	7th Power Plan
Large Office	Cooling	Lodging - Guest Room Controls	LodgUnit	New	135.84	15	\$260.00	0%	0%	\$10.00	0.00	0.00	AEG-BEST
Large Office	Heating	Lodging - Guest Room Controls	LodgUnit	New	-166.55	15	\$260.00	0%	0%	\$10.00	0.00	0.00	AEG-BEST
Large Office	Office Equipment	Data Center - Best Practice Measures	sqft	New	0.05	5	\$0.00	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Office	Cooling	Data Center - Commercially Available Measures	sqft	New	0.01	8	\$0.01	0%	0%	\$0.03	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Office	Ventilation	Data Center - Commercially Available Measures	sqft	New	0.01	8	\$0.01	0%	0%	\$0.03	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Office	Interior Lighting	Data Center - Commercially Available Measures	sqft	New	0.03	8	\$0.01	0%	0%	\$0.03	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Office	Office Equipment	Data Center - Commercially Available Measures	sqft	New	0.01	8	\$0.01	0%	0%	\$0.03	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Office	Cooling	Data Center - Cutting Edge Measures	sqft	New	0.03	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Office	Office Equipment	Data Center - Cutting Edge Measures	sqft	New	0.00	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Office	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	New	6,523.91	18	\$4,092.80	0%	0%	\$0.05	0.00	0.00	7th Power Plan
Large Office	Miscellaneous	Pool Pump - Timer	perBldg	New	0.00	10	\$85.22	15%	75%	\$0.00	0.00	0.00	Ontario Power TRM
Large Office	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	New	2,559.03	6	\$35.93	1%	3%	\$0.00	0.00	1.79	7th Power Plan
Large Office	Cooling	Advanced New Construction Designs	sqft	New	0.75	25	\$4.11	10%	30%	\$0.07	155.60	146.89	AEG Research
Large Office	Heating	Advanced New Construction Designs	sqft	New	1.42	25	\$4.11	10%	30%	\$0.07	89.28	82.56	AEG Research

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Large Office	Ventilation	Advanced New Construction Designs	sqft	New	0.69	25	\$4.11	10%	30%	\$0.07	165.04	159.53	AEG Research
Large Office	Water Heating	Advanced New Construction Designs	sqft	New	0.17	25	\$4.11	10%	30%	\$0.07	17.58	20.33	AEG Research
Large Office	Interior Lighting	Advanced New Construction Designs	sqft	New	0.68	25	\$4.11	10%	30%	\$0.07	145.91	157.16	AEG Research
Large Office	Exterior Lighting	Advanced New Construction Designs	sqft	New	0.29	25	\$4.11	10%	30%	\$0.07	62.83	69.69	AEG Research
Large Office	Cooling	Strategic Energy Management	sqft	New	0.11	3	\$0.34	3%	14%	\$0.12	1.50	1.45	AEG Research
Large Office	Heating	Strategic Energy Management	sqft	New	0.21	3	\$0.34	3%	14%	\$0.12	0.88	0.78	AEG Research
Large Office	Ventilation	Strategic Energy Management	sqft	New	0.10	3	\$0.34	3%	14%	\$0.12	1.64	1.54	AEG Research
Large Office	Water Heating	Strategic Energy Management	sqft	New	0.03	3	\$0.34	3%	14%	\$0.12	0.18	0.27	AEG Research
Large Office	Interior Lighting	Strategic Energy Management	sqft	New	0.10	3	\$0.34	3%	14%	\$0.12	1.45	1.98	AEG Research
Large Office	Exterior Lighting	Strategic Energy Management	sqft	New	0.04	3	\$0.34	3%	14%	\$0.12	0.63	0.93	AEG Research
Large Office	Refrigeration	Strategic Energy Management	sqft	New	0.01	3	\$0.34	3%	14%	\$0.12	0.16	0.13	AEG Research
Large Office	Office Equipment	Strategic Energy Management	sqft	New	0.17	3	\$0.34	3%	14%	\$0.12	2.78	2.21	AEG Research
Large Office	Cooling	Commissioning	sqft	New	0.15	3	\$0.67	11%	59%	\$0.23	9.05	8.77	AEG Research
Large Office	Heating	Commissioning	sqft	New	0.29	3	\$0.67	11%	59%	\$0.23	5.33	4.69	AEG Research
Large Office	Ventilation	Commissioning	sqft	New	0.14	3	\$0.67	11%	59%	\$0.23	9.90	9.28	AEG Research
Large Office	Water Heating	Commissioning	sqft	New	0.01	3	\$0.67	11%	59%	\$0.23	0.35	0.55	AEG Research
Large Office	Interior Lighting	Commissioning	sqft	New	0.12	3	\$0.67	11%	59%	\$0.23	7.29	9.95	AEG Research
Large Office	Exterior Lighting	Commissioning	sqft	New	0.05	3	\$0.67	11%	59%	\$0.23	3.12	4.66	AEG Research
Large Office	Refrigeration	Commissioning	sqft	New	0.02	3	\$0.67	11%	59%	\$0.23	1.60	1.30	AEG Research
Large Office	Cooling	Retrocommissioning	sqft	New	0.15	3	\$0.43	0%	0%	\$0.15	0.00	0.00	AEG Research
Large Office	Heating	Retrocommissioning	sqft	New	0.29	3	\$0.43	0%	0%	\$0.15	0.00	0.00	AEG Research
Large Office	Ventilation	Retrocommissioning	sqft	New	0.14	3	\$0.43	0%	0%	\$0.15	0.00	0.00	AEG Research

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Large Office	Water Heating	Retrocommissioning	sqft	New	0.01	3	\$0.43	0%	0%	\$0.15	0.00	0.00	AEG Research
Large Office	Interior Lighting	Retrocommissioning	sqft	New	0.12	3	\$0.43	0%	0%	\$0.15	0.00	0.00	AEG Research
Large Office	Exterior Lighting	Retrocommissioning	sqft	New	0.05	3	\$0.43	0%	0%	\$0.15	0.00	0.00	AEG Research
Large Office	Refrigeration	Retrocommissioning	sqft	New	0.02	3	\$0.43	0%	0%	\$0.15	0.00	0.00	AEG Research
Large Office	Interior Lighting	Fruit Storage - Lighting Controls	sqft	New	0.08	10	\$0.09	0%	0%	\$0.09	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Office	Refrigeration	Fruit Storage Refrigeration Retrofit	sqft	New	0.07	10	\$1.09	0%	0%	\$2.01	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Office	Refrigeration	Fruit Storage Refrigeration Tuneup	sqft	New	0.02	3	\$0.23	0%	0%	\$4.12	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Office	Refrigeration	Fruit Storage Retrofit - CO2 Scrub	sqft	New	0.03	10	\$3.13	0%	0%	\$11.92	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Office	Refrigeration	Fruit Storage Retrofit - Membrane	sqft	New	0.01	10	\$0.68	0%	0%	\$12.94	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Office	Cooling	Insulation - Ceiling	sqft roof	Existing	0.13	45	\$1.28	15%	35%	\$0.13	100.26	93.06	Building Energy Simulation Tool
Small Office	Heating	Insulation - Ceiling	sqft roof	Existing	0.52	45	\$1.28	15%	35%	\$0.13	110.78	103.86	Building Energy Simulation Tool
Small Office	Ventilation	Insulation - Ceiling	sqft roof	Existing	0.09	45	\$1.28	15%	35%	\$0.13	73.59	80.51	Building Energy Simulation Tool
Small Office	Cooling	Insulation - Ducting	sqft duct	Existing	0.29	20	\$0.84	15%	35%	\$0.00	55.22	51.42	Building Energy Simulation Tool
Small Office	Heating	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.84	15%	35%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Small Office	Ventilation	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.84	15%	35%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Small Office	Cooling	Building Shell - Cool Roofs	sqft roof	Existing	0.37	20	\$0.78	45%	50%	\$10.00	67.52	68.08	Building Energy Simulation Tool
Small Office	Heating	Building Shell - Cool Roofs	sqft roof	Existing	-0.31	20	\$0.78	45%	50%	\$10.00	-15.78	-15.82	Building Energy Simulation Tool
Small Office	Ventilation	Building Shell - Cool Roofs	sqft roof	Existing	-0.05	20	\$0.78	45%	50%	\$10.00	-11.14	-12.74	Building Energy Simulation Tool
Small Office	Cooling	Insulation - Wall Cavity	sqft wall	Existing	-0.22	45	\$0.78	15%	35%	\$0.03	-61.98	-57.12	Building Energy Simulation Tool

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Small Office	Heating	Insulation - Wall Cavity	sqft wall	Existing	1.99	45	\$0.78	15%	35%	\$0.03	160.54	145.72	Building Energy Simulation Tool
Small Office	Ventilation	Insulation - Wall Cavity	sqft wall	Existing	0.32	45	\$0.78	15%	35%	\$0.03	101.11	108.81	Building Energy Simulation Tool
Small Office	Cooling	HVAC - Duct Repair and Sealing	tonCool	Existing	3.96	18	\$0.57	15%	50%	\$10.00	14.45	14.56	Building Energy Simulation Tool
Small Office	Heating	HVAC - Duct Repair and Sealing	tonCool	Existing	-11.58	18	\$0.57	15%	50%	\$10.00	-11.88	-11.92	Building Energy Simulation Tool
Small Office	Ventilation	HVAC - Duct Repair and Sealing	tonCool	Existing	-2.05	18	\$0.57	15%	50%	\$10.00	-8.46	-9.65	Building Energy Simulation Tool
Small Office	Cooling	Windows - High Efficiency Glazing	sqft window	Existing	6.40	30	\$35.93	48%	48%	\$0.09	0.00	0.00	7th Power Plan
Small Office	Heating	Windows - High Efficiency Glazing	sqft window	Existing	21.85	30	\$35.93	48%	48%	\$0.09	0.00	0.00	7th Power Plan
Small Office	Ventilation	Windows - High Efficiency Glazing	sqft window	Existing	2.10	30	\$35.93	48%	48%	\$0.09	0.00	0.00	7th Power Plan
Small Office	Cooling	Chiller - Chilled Water Reset	ChillCtrl	Existing	0.00	10	\$884.85	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Small Office	Cooling	Chiller - Chilled Water Variable-Flow System	HP cool	Existing	0.00	15	\$332.55	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Small Office	Cooling	Chiller - Variable Speed Fans	HP fan	Existing	0.00	15	\$208.36	15%	75%	\$0.00	0.00	0.00	New Jersey TRM
Small Office	Cooling	Water-Cooled Chiller - Condenser Water Reset	ChillCtrl	Existing	0.00	10	\$884.85	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Small Office	Cooling	HVAC - Economizer	HP cool	Existing	151.78	10	\$168.42	18%	75%	\$0.14	755.96	685.04	AEG-BEST
Small Office	Heating	Space Heating - Heat Recovery Ventilator	CFM	Existing	6.11	14	\$5.08	3%	75%	\$0.09	470.32	415.18	7th Power Plan
Small Office	Ventilation	Ventilation - ECM on VAV Boxes	sqft	Existing	0.21	18	\$0.25	15%	20%	\$0.09	45.81	49.86	7th Power Plan
Small Office	Ventilation	Ventilation - Variable Speed Control	sqft	Existing	0.07	15	\$181.39	13%	25%	\$208.39	37.97	45.38	AEG-BEST
Small Office	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.01	15	\$0.25	15%	25%	\$1.85	5.17	6.05	7th Power Plan
Small Office	Cooling	Destratification Fans (HVLS)	Strat Fan	Existing	4,599.47	15	\$7,270.90	15%	15%	\$0.04	0.00	0.00	AEG Research
Small Office	Heating	Destratification Fans (HVLS)	Strat Fan	Existing	15,362.08	15	\$7,270.90	15%	15%	\$0.04	0.00	0.00	AEG Research
Small Office	Cooling	RTU - Maintenance	tonCool	Existing	69.21	3	\$35.00	15%	45%	\$0.15	205.97	202.80	AEG Research
Small Office	Cooling	RTU - Advanced Controls	sqft	Existing	0.29	15	\$0.07	15%	45%	\$0.02	286.79	262.10	7th Power Plan

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Small Office	Cooling	RTU - Evaporative Precooler	tonCool	Existing	143.83	15	\$681.62	15%	75%	\$0.47	778.79	739.93	AEG Research
Small Office	Cooling	Ductless Mini Split Heat Pump	tonCool	Existing	320.95	15	\$3,359.26	15%	75%	\$0.37	63.92	63.85	7th Power Plan
Small Office	Heating	Ductless Mini Split Heat Pump	tonCool	Existing	588.57	15	\$3,359.26	15%	75%	\$0.37	623.97	573.86	7th Power Plan
Small Office	Cooling	Thermostat - WiFi/Interactive	sqft	Existing	0.55	5	\$0.66	30%	40%	\$0.08	204.08	200.40	7th Power Plan
Small Office	Heating	Thermostat - WiFi/Interactive	sqft	Existing	0.90	5	\$0.66	30%	40%	\$0.08	93.71	92.04	7th Power Plan
Small Office	Ventilation	Thermostat - WiFi/Interactive	sqft	Existing	0.16	5	\$0.66	30%	40%	\$0.08	66.80	74.55	7th Power Plan
Small Office	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	Existing	17.83	10	\$8.35	25%	65%	\$0.04	16.62	26.28	Illinois TRM
Small Office	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	Existing	18.47	10	\$11.64	25%	65%	-\$0.49	8.58	13.68	7th Power Plan
Small Office	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	Existing	64.70	15	\$36.75	0%	0%	\$0.03	0.00	0.00	Hawaii TRM
Small Office	Water Heating	Water Heater - Pipe Insulation	PipeFeet	Existing	80.52	15	\$14.88	16%	75%	\$0.01	47.06	68.90	AEG-BEST
Small Office	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	Existing	12.07	4	\$144.04	25%	65%	-\$1.58	10.91	17.56	7th Power Plan
Small Office	Water Heating	Water Heater - Thermostat Setback	WHunits	Existing	63.75	2	\$5.00	15%	75%	\$0.02	22.50	35.44	Illinois TRM
Small Office	Water Heating	Water Heater - Solar System	PipeFeet	Existing	276.60	20	\$215.28	1%	30%	\$0.04	78.34	117.27	AEG-BEST
Small Office	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.38	15	\$0.35	3%	23%	\$0.07	418.32	462.39	7th Power Plan
Small Office	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.53	15	\$0.58	3%	23%	\$0.08	564.19	636.55	7th Power Plan
Small Office	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	Existing	112.82	15	\$54.41	1%	3%	\$0.04	12.10	14.75	7th Power Plan
Small Office	Interior Lighting	Interior Lighting - Timeclocks and Timers	occ sens	Existing	0.00	8	\$111.67	7%	15%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Small Office	Interior Lighting	Interior Lighting - Skylights	1000 sqft	Existing	0.00	15	\$1,006.35	15%	25%	\$0.00	0.00	0.00	AEG Research
Small Office	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	1000 sqft	Existing	201.55	16	\$1,807.69	5%	15%	\$0.65	83.91	110.16	7th Power Plan

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Small Office	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	Existing	2,098.83	11	\$30.80	15%	50%	\$0.00	323.05	387.14	Illinois TRM
Small Office	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	ELtg Watts	Existing	2.80	8	\$0.63	15%	25%	\$0.02	248.60	341.85	7th Power Plan
Small Office	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	Existing	95.65	8	\$55.10	15%	25%	\$0.06	125.70	178.01	Pacific Gas and Electric Research
Small Office	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	Existing	114.66	7	\$3,400.00	15%	30%	\$3.26	222.39	325.98	AEG Research
Small Office	Refrigeration	Refrigeration - Anti-Sweat Heater	Fridge Feet	Existing	13.85	8	\$48.18	0%	0%	\$0.53	0.00	0.00	7th Power Plan
Small Office	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	Existing	29.15	4	\$10.44	0%	0%	\$0.09	0.00	0.00	Michigan Energy Measures Database
Small Office	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	Existing	191.29	16	\$165.20	0%	0%	\$0.09	0.00	0.00	7th Power Plan
Small Office	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	Existing	16.68	15	\$335.85	0%	0%	\$2.12	0.00	0.00	7th Power Plan
Small Office	Refrigeration	Refrigeration - Strip Curtain	Walkin Door	Existing	23.36	2	\$10.41	0%	0%	\$0.21	0.00	0.00	7th Power Plan
Small Office	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	Existing	0.26	15	\$45.43	0%	0%	\$17.69	0.00	0.00	Annual Energy Outlook, 2015
Small Office	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	Existing	5.33	15	\$313.82	0%	0%	\$5.89	0.00	0.00	Annual Energy Outlook, 2015
Small Office	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	Existing	128.48	10	\$506.05	0%	0%	\$0.52	0.00	0.00	Vermont TRM
Small Office	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	Existing	0.00	6	\$45.41	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Small Office	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	Existing	0.00	8	\$3.72	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Small Office	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	Existing	187.18	5	\$45.85	0%	0%	\$0.05	0.00	0.00	Illinois TRM
Small Office	Refrigeration	Grocery - ECMs for Display Cases	Fridge Case	Existing	0.00	16	\$165.20	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Small Office	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	Existing	1,410.57	5	\$187.94	25%	75%	\$0.03	13.30	11.76	Illinois TRM
Small Office	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	Existing	2,298.61	18	\$8,526.67	25%	50%	\$0.29	98.10	108.23	7th Power Plan
Small Office	Office Equipment	Office Equipment - Smart Power Strips	Smart Strip	Existing	87.52	4	\$41.63	10%	50%	\$0.11	373.87	300.39	7th Power Plan

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Small Office	Cooling	Lodging - Guest Room Controls	LodgUnit	Existing	210.23	15	\$260.00	0%	0%	\$10.00	0.00	0.00	AEG-BEST
Small Office	Heating	Lodging - Guest Room Controls	LodgUnit	Existing	-223.03	15	\$260.00	0%	0%	\$10.00	0.00	0.00	AEG-BEST
Small Office	Office Equipment	Data Center - Best Practice Measures	sqft	Existing	0.09	5	\$0.01	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Office	Cooling	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.02	0%	0%	\$0.03	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Office	Ventilation	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.02	0%	0%	\$0.03	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Office	Interior Lighting	Data Center - Commercially Available Measures	sqft	Existing	0.03	8	\$0.02	0%	0%	\$0.03	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Office	Office Equipment	Data Center - Commercially Available Measures	sqft	Existing	0.02	8	\$0.02	0%	0%	\$0.03	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Office	Cooling	Data Center - Cutting Edge Measures	sqft	Existing	0.05	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Office	Office Equipment	Data Center - Cutting Edge Measures	sqft	Existing	0.01	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Office	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	Existing	597.23	18	\$4,092.80	0%	0%	\$0.54	0.00	0.00	7th Power Plan
Small Office	Miscellaneous	Pool Pump - Timer	perBldg	Existing	0.00	10	\$85.22	15%	75%	\$0.00	0.00	0.00	Ontario Power TRM
Small Office	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	Existing	1,549.44	6	\$35.93	1%	3%	\$0.00	0.00	46.77	7th Power Plan
Small Office	Cooling	Advanced New Construction Designs	sqft	Existing	1.17	25	\$4.11	0%	0%	\$0.07	0.00	0.00	AEG Research
Small Office	Heating	Advanced New Construction Designs	sqft	Existing	1.91	25	\$4.11	0%	0%	\$0.07	0.00	0.00	AEG Research
Small Office	Ventilation	Advanced New Construction Designs	sqft	Existing	0.32	25	\$4.11	0%	0%	\$0.07	0.00	0.00	AEG Research
Small Office	Water Heating	Advanced New Construction Designs	sqft	Existing	0.18	25	\$4.11	0%	0%	\$0.07	0.00	0.00	AEG Research
Small Office	Interior Lighting	Advanced New Construction Designs	sqft	Existing	0.77	25	\$4.11	0%	0%	\$0.07	0.00	0.00	AEG Research
Small Office	Exterior Lighting	Advanced New Construction Designs	sqft	Existing	0.36	25	\$4.11	0%	0%	\$0.07	0.00	0.00	AEG Research
Small Office	Cooling	Strategic Energy Management	sqft	Existing	0.17	3	\$0.35	3%	14%	\$0.11	72.83	72.73	AEG Research

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Small Office	Heating	Strategic Energy Management	sqft	Existing	0.27	3	\$0.35	3%	14%	\$0.11	33.94	33.83	AEG Research
Small Office	Ventilation	Strategic Energy Management	sqft	Existing	0.05	3	\$0.35	3%	14%	\$0.11	24.17	28.31	AEG Research
Small Office	Water Heating	Strategic Energy Management	sqft	Existing	0.03	3	\$0.35	3%	14%	\$0.11	5.77	9.20	AEG Research
Small Office	Interior Lighting	Strategic Energy Management	sqft	Existing	0.12	3	\$0.35	3%	14%	\$0.11	54.63	71.57	AEG Research
Small Office	Exterior Lighting	Strategic Energy Management	sqft	Existing	0.06	3	\$0.35	3%	14%	\$0.11	25.00	35.95	AEG Research
Small Office	Refrigeration	Strategic Energy Management	sqft	Existing	0.01	3	\$0.35	3%	14%	\$0.11	4.75	1.99	AEG Research
Small Office	Office Equipment	Strategic Energy Management	sqft	Existing	0.12	3	\$0.35	3%	14%	\$0.11	67.37	55.02	AEG Research
Small Office	Cooling	Commissioning	sqft	Existing	0.22	3	\$0.76	0%	0%	\$0.23	0.00	0.00	AEG Research
Small Office	Heating	Commissioning	sqft	Existing	0.37	3	\$0.76	0%	0%	\$0.23	0.00	0.00	AEG Research
Small Office	Ventilation	Commissioning	sqft	Existing	0.07	3	\$0.76	0%	0%	\$0.23	0.00	0.00	AEG Research
Small Office	Water Heating	Commissioning	sqft	Existing	0.01	3	\$0.76	0%	0%	\$0.23	0.00	0.00	AEG Research
Small Office	Interior Lighting	Commissioning	sqft	Existing	0.13	3	\$0.76	0%	0%	\$0.23	0.00	0.00	AEG Research
Small Office	Exterior Lighting	Commissioning	sqft	Existing	0.06	3	\$0.76	0%	0%	\$0.23	0.00	0.00	AEG Research
Small Office	Refrigeration	Commissioning	sqft	Existing	0.01	3	\$0.76	0%	0%	\$0.23	0.00	0.00	AEG Research
Small Office	Cooling	Retrocommissioning	sqft	Existing	0.23	3	\$0.49	11%	59%	\$0.14	437.74	438.43	AEG Research
Small Office	Heating	Retrocommissioning	sqft	Existing	0.38	3	\$0.49	11%	59%	\$0.14	204.01	203.94	AEG Research
Small Office	Ventilation	Retrocommissioning	sqft	Existing	0.07	3	\$0.49	11%	59%	\$0.14	145.25	170.65	AEG Research
Small Office	Water Heating	Retrocommissioning	sqft	Existing	0.01	3	\$0.49	11%	59%	\$0.14	11.56	18.48	AEG Research
Small Office	Interior Lighting	Retrocommissioning	sqft	Existing	0.14	3	\$0.49	11%	59%	\$0.14	273.61	359.55	AEG Research
Small Office	Exterior Lighting	Retrocommissioning	sqft	Existing	0.06	3	\$0.49	11%	59%	\$0.14	125.21	180.63	AEG Research
Small Office	Refrigeration	Retrocommissioning	sqft	Existing	0.01	3	\$0.49	11%	59%	\$0.14	47.60	19.96	AEG Research
Small Office	Interior Lighting	Fruit Storage - Lighting Controls	sqft	Existing	0.10	10	\$0.09	0%	0%	\$0.08	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx

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Small Office	Refrigeration	Fruit Storage Refrigeration Retrofit	sqft	Existing	0.04	10	\$1.09	0%	0%	\$3.41	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Office	Refrigeration	Fruit Storage Refrigeration Tuneup	sqft	Existing	0.01	3	\$0.23	0%	0%	\$6.98	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Office	Refrigeration	Fruit Storage Retrofit - CO2 Scrub	sqft	Existing	0.02	10	\$3.13	0%	0%	\$20.20	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Office	Refrigeration	Fruit Storage Retrofit - Membrane	sqft	Existing	0.00	10	\$0.68	0%	0%	\$21.92	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Office	Cooling	Insulation - Ceiling	sqft roof	New	0.00	45	\$1.28	15%	50%	\$0.21	0.00	0.00	Building Energy Simulation Tool
Small Office	Heating	Insulation - Ceiling	sqft roof	New	0.40	45	\$1.28	15%	50%	\$0.21	86.24	79.97	Building Energy Simulation Tool
Small Office	Ventilation	Insulation - Ceiling	sqft roof	New	0.05	45	\$1.28	15%	50%	\$0.21	50.11	51.30	Building Energy Simulation Tool
Small Office	Cooling	Insulation - Ducting	sqft duct	New	0.50	20	\$0.84	15%	50%	\$0.00	95.16	89.09	Building Energy Simulation Tool
Small Office	Heating	Insulation - Ducting	sqft duct	New	0.00	20	\$0.84	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Small Office	Ventilation	Insulation - Ducting	sqft duct	New	0.00	20	\$0.84	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Small Office	Cooling	Building Shell - Cool Roofs	sqft roof	New	0.09	20	\$0.78	45%	50%	\$10.00	9.83	9.34	Building Energy Simulation Tool
Small Office	Heating	Building Shell - Cool Roofs	sqft roof	New	-0.15	20	\$0.78	45%	50%	\$10.00	-4.61	-4.32	Building Energy Simulation Tool
Small Office	Ventilation	Building Shell - Cool Roofs	sqft roof	New	-0.02	20	\$0.78	45%	50%	\$10.00	-2.75	-2.85	Building Energy Simulation Tool
Small Office	Cooling	Insulation - Wall Cavity	sqft wall	New	-0.02	45	\$0.78	15%	50%	\$0.77	-5.41	-5.05	Building Energy Simulation Tool
Small Office	Heating	Insulation - Wall Cavity	sqft wall	New	0.08	45	\$0.78	15%	50%	\$0.77	6.68	6.21	Building Energy Simulation Tool
Small Office	Ventilation	Insulation - Wall Cavity	sqft wall	New	0.01	45	\$0.78	15%	50%	\$0.77	3.83	3.91	Building Energy Simulation Tool
Small Office	Cooling	HVAC - Duct Repair and Sealing	tonCool	New	23.23	18	\$0.57	15%	35%	\$0.00	26.99	25.09	Building Energy Simulation Tool
Small Office	Heating	HVAC - Duct Repair and Sealing	tonCool	New	37.88	18	\$0.57	15%	35%	\$0.00	12.31	11.37	Building Energy Simulation Tool
Small Office	Ventilation	HVAC - Duct Repair and Sealing	tonCool	New	4.67	18	\$0.57	15%	35%	\$0.00	7.05	7.22	Building Energy Simulation Tool

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Small Office	Cooling	Windows - High Efficiency Glazing	sqft window	New	5.17	30	\$35.93	66%	66%	\$0.11	0.00	0.00	7th Power Plan
Small Office	Heating	Windows - High Efficiency Glazing	sqft window	New	20.76	30	\$35.93	66%	66%	\$0.11	0.00	0.00	7th Power Plan
Small Office	Ventilation	Windows - High Efficiency Glazing	sqft window	New	1.51	30	\$35.93	66%	66%	\$0.11	0.00	0.00	7th Power Plan
Small Office	Cooling	Chiller - Chilled Water Reset	ChillCtrl	New	0.00	10	\$884.85	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Small Office	Cooling	Chiller - Chilled Water Variable-Flow System	HP cool	New	0.00	15	\$332.55	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Small Office	Cooling	Chiller - Variable Speed Fans	HP fan	New	0.00	15	\$208.36	15%	75%	\$0.00	0.00	0.00	New Jersey TRM
Small Office	Cooling	Water-Cooled Chiller - Condenser Water Reset	ChillCtrl	New	0.00	10	\$884.85	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Small Office	Cooling	HVAC - Economizer	HP cool	New	120.41	10	\$168.42	18%	75%	\$0.18	164.94	149.20	AEG-BEST
Small Office	Heating	Space Heating - Heat Recovery Ventilator	CFM	New	5.65	14	\$5.08	6%	75%	\$0.10	139.31	121.70	7th Power Plan
Small Office	Ventilation	Ventilation - ECM on VAV Boxes	sqft	New	0.15	18	\$0.25	15%	20%	\$0.12	19.32	19.78	7th Power Plan
Small Office	Ventilation	Ventilation - Variable Speed Control	sqft	New	0.05	15	\$181.39	19%	25%	\$260.70	5.21	5.50	AEG-BEST
Small Office	Ventilation	Ventilation - Demand Controlled	sqft	New	0.01	15	\$0.25	15%	25%	\$2.31	1.44	1.53	7th Power Plan
Small Office	Cooling	Destratification Fans (HVLS)	Strat Fan	New	3,717.70	15	\$7,270.90	15%	15%	\$0.04	0.00	0.00	AEG Research
Small Office	Heating	Destratification Fans (HVLS)	Strat Fan	New	14,188.70	15	\$7,270.90	15%	15%	\$0.04	0.00	0.00	AEG Research
Small Office	Cooling	RTU - Maintenance	tonCool	New	56.66	3	\$35.00	15%	45%	\$0.19	16.92	15.48	AEG Research
Small Office	Cooling	RTU - Advanced Controls	sqft	New	0.23	15	\$0.07	15%	45%	\$0.03	118.32	108.28	7th Power Plan
Small Office	Cooling	RTU - Evaporative Precooler	tonCool	New	115.99	15	\$681.62	15%	75%	\$0.58	389.17	365.04	AEG Research
Small Office	Cooling	Ductless Mini Split Heat Pump	tonCool	New	270.49	15	\$3,359.26	15%	75%	\$0.40	23.38	21.80	7th Power Plan
Small Office	Heating	Ductless Mini Split Heat Pump	tonCool	New	557.67	15	\$3,359.26	15%	75%	\$0.40	247.13	223.48	7th Power Plan
Small Office	Cooling	Thermostat - WiFi/Interactive	sqft	New	0.45	5	\$0.66	30%	40%	\$0.09	11.97	11.00	7th Power Plan
Small Office	Heating	Thermostat - WiFi/Interactive	sqft	New	0.87	5	\$0.66	30%	40%	\$0.09	6.51	5.84	7th Power Plan

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Small Office	Ventilation	Thermostat - WiFi/Interactive	sqft	New	0.11	5	\$0.66	30%	40%	\$0.09	3.88	4.13	7th Power Plan
Small Office	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	New	16.25	10	\$8.35	25%	65%	\$0.04	4.26	6.03	Illinois TRM
Small Office	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	New	16.93	10	\$11.64	25%	65%	-\$0.49	2.22	3.14	7th Power Plan
Small Office	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	New	58.97	15	\$36.75	0%	0%	\$0.03	0.00	0.00	Hawaii TRM
Small Office	Water Heating	Water Heater - Pipe Insulation	PipeFeet	New	71.16	15	\$14.88	1%	75%	\$0.01	19.62	26.37	AEG-BEST
Small Office	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	New	11.19	4	\$144.04	25%	65%	-\$1.58	1.18	1.80	7th Power Plan
Small Office	Water Heating	Water Heater - Thermostat Setback	WHunits	New	58.62	2	\$5.00	15%	75%	\$0.02	1.00	1.53	Illinois TRM
Small Office	Water Heating	Water Heater - Solar System	PipeFeet	New	246.66	20	\$215.28	1%	30%	\$0.04	27.38	36.62	AEG-BEST
Small Office	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.38	15	\$0.35	11%	23%	\$0.07	221.07	235.91	7th Power Plan
Small Office	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.52	15	\$0.58	11%	23%	\$0.08	304.06	326.26	7th Power Plan
Small Office	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	New	110.34	15	\$54.41	1%	3%	\$0.04	3.68	4.26	7th Power Plan
Small Office	Interior Lighting	Interior Lighting - Timeclocks and Timers	occ sens	New	0.00	8	\$111.67	7%	15%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Small Office	Interior Lighting	Interior Lighting - Skylights	1000 sqft	New	0.00	15	\$1,006.35	18%	25%	\$0.00	0.00	0.00	AEG Research
Small Office	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	1000 sqft	New	187.25	16	\$1,807.69	5%	15%	\$0.65	30.09	34.70	7th Power Plan
Small Office	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	New	1,935.76	11	\$30.80	15%	50%	\$0.00	93.50	104.79	Illinois TRM
Small Office	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	ELtg Watts	New	2.42	8	\$0.63	15%	25%	\$0.02	53.70	73.39	7th Power Plan
Small Office	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fxt	New	84.12	8	\$55.10	15%	25%	\$0.06	28.24	38.47	Pacific Gas and Electric Research
Small Office	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fxt	New	102.87	7	\$3,400.00	15%	30%	\$3.27	45.23	63.76	AEG Research
Small Office	Refrigeration	Refrigeration - Anti-Sweat Heater	Fridge Feet	New	11.50	8	\$48.18	0%	0%	\$0.65	0.00	0.00	7th Power Plan

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Small Office	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	New	27.93	4	\$10.44	0%	0%	\$0.10	0.00	0.00	Michigan Energy Measures Database
Small Office	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	New	178.66	16	\$165.20	0%	0%	\$0.09	0.00	0.00	7th Power Plan
Small Office	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	New	15.93	15	\$335.85	0%	0%	\$2.24	0.00	0.00	7th Power Plan
Small Office	Refrigeration	Refrigeration - Strip Curtain	Walkin Door	New	20.58	2	\$10.41	0%	0%	\$0.24	0.00	0.00	7th Power Plan
Small Office	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	New	0.26	15	\$45.43	0%	0%	\$18.69	0.00	0.00	Annual Energy Outlook, 2015
Small Office	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	New	5.35	15	\$313.82	0%	0%	\$6.23	0.00	0.00	Annual Energy Outlook, 2015
Small Office	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	New	120.00	10	\$506.05	0%	0%	\$0.56	0.00	0.00	Vermont TRM
Small Office	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	New	0.00	6	\$45.41	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Small Office	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	New	0.00	8	\$3.72	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Small Office	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	New	168.65	5	\$45.85	0%	0%	\$0.06	0.00	0.00	Illinois TRM
Small Office	Refrigeration	Grocery - ECMs for Display Cases	Fridge Case	New	0.00	16	\$165.20	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Small Office	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	New	1,392.44	5	\$187.94	25%	75%	\$0.03	1.29	1.09	Illinois TRM
Small Office	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	New	1,556.12	18	\$8,526.67	25%	50%	\$0.37	40.72	42.32	7th Power Plan
Small Office	Office Equipment	Office Equipment - Smart Power Strips	Smart Strip	New	85.42	4	\$41.63	10%	50%	\$0.11	36.60	28.50	7th Power Plan
Small Office	Cooling	Lodging - Guest Room Controls	LodgUnit	New	184.88	15	\$260.00	0%	0%	\$10.00	0.00	0.00	AEG-BEST
Small Office	Heating	Lodging - Guest Room Controls	LodgUnit	New	-223.51	15	\$260.00	0%	0%	\$10.00	0.00	0.00	AEG-BEST
Small Office	Office Equipment	Data Center - Best Practice Measures	sqft	New	0.09	5	\$0.01	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Office	Cooling	Data Center - Commercially Available Measures	sqft	New	0.01	8	\$0.02	0%	0%	\$0.03	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Office	Ventilation	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.02	0%	0%	\$0.03	0.00	0.00	com-datacenters-7p_v5p.xlsx

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Small Office	Interior Lighting	Data Center - Commercially Available Measures	sqft	New	0.03	8	\$0.02	0%	0%	\$0.03	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Office	Office Equipment	Data Center - Commercially Available Measures	sqft	New	0.02	8	\$0.02	0%	0%	\$0.03	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Office	Cooling	Data Center - Cutting Edge Measures	sqft	New	0.04	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Office	Office Equipment	Data Center - Cutting Edge Measures	sqft	New	0.01	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Office	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	New	406.20	18	\$4,092.80	0%	0%	\$0.67	0.00	0.00	7th Power Plan
Small Office	Miscellaneous	Pool Pump - Timer	perBldg	New	0.00	10	\$85.22	15%	75%	\$0.00	0.00	0.00	Ontario Power TRM
Small Office	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	New	1,549.44	6	\$35.93	1%	3%	\$0.00	0.00	4.33	7th Power Plan
Small Office	Cooling	Advanced New Construction Designs	sqft	New	0.95	25	\$4.11	10%	25%	\$0.07	343.13	321.46	AEG Research
Small Office	Heating	Advanced New Construction Designs	sqft	New	1.81	25	\$4.11	10%	25%	\$0.07	185.05	171.94	AEG Research
Small Office	Ventilation	Advanced New Construction Designs	sqft	New	0.23	25	\$4.11	10%	25%	\$0.07	107.53	111.01	AEG Research
Small Office	Water Heating	Advanced New Construction Designs	sqft	New	0.17	25	\$4.11	10%	25%	\$0.07	31.57	36.50	AEG Research
Small Office	Interior Lighting	Advanced New Construction Designs	sqft	New	0.76	25	\$4.11	10%	25%	\$0.07	297.75	316.77	AEG Research
Small Office	Exterior Lighting	Advanced New Construction Designs	sqft	New	0.32	25	\$4.11	10%	25%	\$0.07	124.36	138.67	AEG Research
Small Office	Cooling	Strategic Energy Management	sqft	New	0.14	3	\$0.33	3%	14%	\$0.12	4.39	4.01	AEG Research
Small Office	Heating	Strategic Energy Management	sqft	New	0.27	3	\$0.33	3%	14%	\$0.12	2.39	2.14	AEG Research
Small Office	Ventilation	Strategic Energy Management	sqft	New	0.03	3	\$0.33	3%	14%	\$0.12	1.43	1.52	AEG Research
Small Office	Water Heating	Strategic Energy Management	sqft	New	0.03	3	\$0.33	3%	14%	\$0.12	0.42	0.65	AEG Research
Small Office	Interior Lighting	Strategic Energy Management	sqft	New	0.12	3	\$0.33	3%	14%	\$0.12	3.98	5.32	AEG Research
Small Office	Exterior Lighting	Strategic Energy Management	sqft	New	0.05	3	\$0.33	3%	14%	\$0.12	1.67	2.56	AEG Research

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Small Office	Refrigeration	Strategic Energy Management	sqft	New	0.00	3	\$0.33	3%	14%	\$0.12	0.26	0.08	AEG Research
Small Office	Office Equipment	Strategic Energy Management	sqft	New	0.11	3	\$0.33	3%	14%	\$0.12	4.64	3.61	AEG Research
Small Office	Cooling	Commissioning	sqft	New	0.19	3	\$0.71	11%	59%	\$0.23	26.53	24.22	AEG Research
Small Office	Heating	Commissioning	sqft	New	0.37	3	\$0.71	11%	59%	\$0.23	14.46	12.93	AEG Research
Small Office	Ventilation	Commissioning	sqft	New	0.05	3	\$0.71	11%	59%	\$0.23	8.61	9.18	AEG Research
Small Office	Water Heating	Commissioning	sqft	New	0.01	3	\$0.71	11%	59%	\$0.23	0.85	1.31	AEG Research
Small Office	Interior Lighting	Commissioning	sqft	New	0.13	3	\$0.71	11%	59%	\$0.23	20.03	26.76	AEG Research
Small Office	Exterior Lighting	Commissioning	sqft	New	0.06	3	\$0.71	11%	59%	\$0.23	8.31	12.76	AEG Research
Small Office	Refrigeration	Commissioning	sqft	New	0.01	3	\$0.71	11%	59%	\$0.23	2.67	0.81	AEG Research
Small Office	Cooling	Retrocommissioning	sqft	New	0.19	3	\$0.45	0%	0%	\$0.14	0.00	0.00	AEG Research
Small Office	Heating	Retrocommissioning	sqft	New	0.37	3	\$0.45	0%	0%	\$0.14	0.00	0.00	AEG Research
Small Office	Ventilation	Retrocommissioning	sqft	New	0.05	3	\$0.45	0%	0%	\$0.14	0.00	0.00	AEG Research
Small Office	Water Heating	Retrocommissioning	sqft	New	0.01	3	\$0.45	0%	0%	\$0.14	0.00	0.00	AEG Research
Small Office	Interior Lighting	Retrocommissioning	sqft	New	0.13	3	\$0.45	0%	0%	\$0.14	0.00	0.00	AEG Research
Small Office	Exterior Lighting	Retrocommissioning	sqft	New	0.06	3	\$0.45	0%	0%	\$0.14	0.00	0.00	AEG Research
Small Office	Refrigeration	Retrocommissioning	sqft	New	0.01	3	\$0.45	0%	0%	\$0.14	0.00	0.00	AEG Research
Small Office	Interior Lighting	Fruit Storage - Lighting Controls	sqft	New	0.10	10	\$0.09	0%	0%	\$0.08	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Office	Refrigeration	Fruit Storage Refrigeration Retrofit	sqft	New	0.03	10	\$1.09	0%	0%	\$4.23	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Office	Refrigeration	Fruit Storage Refrigeration Tuneup	sqft	New	0.01	3	\$0.23	0%	0%	\$8.67	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Office	Refrigeration	Fruit Storage Retrofit - CO2 Scrub	sqft	New	0.02	10	\$3.13	0%	0%	\$25.07	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Office	Refrigeration	Fruit Storage Retrofit - Membrane	sqft	New	0.00	10	\$0.68	0%	0%	\$27.20	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Retail	Cooling	Insulation - Ceiling	sqft roof	Existing	0.00	45	\$1.28	15%	35%	\$0.05	0.00	0.00	Building Energy Simulation Tool

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Large Retail	Heating	Insulation - Ceiling	sqft roof	Existing	1.36	45	\$1.28	15%	35%	\$0.05	24.75	22.57	Building Energy Simulation Tool
Large Retail	Ventilation	Insulation - Ceiling	sqft roof	Existing	0.64	45	\$1.28	15%	35%	\$0.05	38.53	41.66	Building Energy Simulation Tool
Large Retail	Cooling	Insulation - Ducting	sqft duct	Existing	0.18	20	\$0.84	15%	35%	\$0.00	14.11	13.03	Building Energy Simulation Tool
Large Retail	Heating	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.84	15%	35%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Large Retail	Ventilation	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.84	15%	35%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Large Retail	Cooling	Building Shell - Cool Roofs	sqft roof	Existing	0.79	20	\$0.78	45%	50%	\$10.00	9.54	9.55	Building Energy Simulation Tool
Large Retail	Heating	Building Shell - Cool Roofs	sqft roof	Existing	-0.81	20	\$0.78	45%	50%	\$10.00	-3.56	-3.43	Building Energy Simulation Tool
Large Retail	Ventilation	Building Shell - Cool Roofs	sqft roof	Existing	-0.40	20	\$0.78	45%	50%	\$10.00	-5.74	-6.53	Building Energy Simulation Tool
Large Retail	Cooling	Insulation - Wall Cavity	sqft wall	Existing	-0.49	45	\$0.78	15%	35%	\$0.03	-24.83	-22.89	Building Energy Simulation Tool
Large Retail	Heating	Insulation - Wall Cavity	sqft wall	Existing	1.86	45	\$0.78	15%	35%	\$0.03	33.69	30.39	Building Energy Simulation Tool
Large Retail	Ventilation	Insulation - Wall Cavity	sqft wall	Existing	0.88	45	\$0.78	15%	35%	\$0.03	52.43	56.07	Building Energy Simulation Tool
Large Retail	Cooling	HVAC - Duct Repair and Sealing	tonCool	Existing	4.61	18	\$0.57	15%	25%	\$0.00	1.41	1.30	Building Energy Simulation Tool
Large Retail	Heating	HVAC - Duct Repair and Sealing	tonCool	Existing	6.06	18	\$0.57	15%	25%	\$0.00	0.66	0.61	Building Energy Simulation Tool
Large Retail	Ventilation	HVAC - Duct Repair and Sealing	tonCool	Existing	2.87	18	\$0.57	15%	25%	\$0.00	1.03	1.12	Building Energy Simulation Tool
Large Retail	Cooling	Windows - High Efficiency Glazing	sqft window	Existing	7.32	30	\$35.93	48%	48%	\$0.08	0.00	0.00	7th Power Plan
Large Retail	Heating	Windows - High Efficiency Glazing	sqft window	Existing	24.70	30	\$35.93	48%	48%	\$0.08	0.00	0.00	7th Power Plan
Large Retail	Ventilation	Windows - High Efficiency Glazing	sqft window	Existing	6.63	30	\$35.93	48%	48%	\$0.08	0.00	0.00	7th Power Plan
Large Retail	Cooling	Chiller - Chilled Water Reset	ChillCtrl	Existing	2,818.37	10	\$884.85	15%	75%	\$0.04	0.58	0.52	AEG-BEST
Large Retail	Cooling	Chiller - Chilled Water Variable-Flow System	HP cool	Existing	286.53	15	\$332.55	15%	75%	\$0.12	8.25	7.39	AEG-BEST

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Large Retail	Cooling	Chiller - Variable Speed Fans	HP fan	Existing	673.39	15	\$208.36	15%	75%	\$0.03	1.95	1.73	New Jersey TRM
Large Retail	Cooling	Water-Cooled Chiller - Condenser Water Reset	ChillCtrl	Existing	21,975.66	10	\$884.85	15%	75%	\$0.01	1.73	1.55	AEG-BEST
Large Retail	Cooling	HVAC - Economizer	HP cool	Existing	97.21	10	\$168.42	18%	75%	\$0.23	131.84	118.07	AEG-BEST
Large Retail	Heating	Space Heating - Heat Recovery Ventilator	CFM	Existing	1.97	14	\$5.08	3%	75%	\$0.28	96.31	85.11	7th Power Plan
Large Retail	Ventilation	Ventilation - ECM on VAV Boxes	sqft	Existing	0.52	18	\$0.25	15%	20%	\$0.04	23.40	25.51	7th Power Plan
Large Retail	Ventilation	Ventilation - Variable Speed Control	sqft	Existing	0.06	15	\$181.39	13%	50%	\$228.66	22.19	26.32	AEG-BEST
Large Retail	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.03	15	\$0.25	15%	75%	\$0.74	16.17	18.52	7th Power Plan
Large Retail	Cooling	Destratification Fans (HVLS)	Strat Fan	Existing	3,882.16	15	\$7,270.90	15%	30%	\$0.19	40.88	37.64	AEG Research
Large Retail	Heating	Destratification Fans (HVLS)	Strat Fan	Existing	0.19	15	\$7,270.90	15%	30%	\$0.19	0.00	0.00	AEG Research
Large Retail	Cooling	RTU - Maintenance	tonCool	Existing	43.87	3	\$35.00	15%	45%	\$0.24	35.42	34.71	AEG Research
Large Retail	Cooling	RTU - Advanced Controls	sqft	Existing	0.14	15	\$0.07	15%	45%	\$0.05	26.60	24.30	7th Power Plan
Large Retail	Cooling	RTU - Evaporative Precooler	tonCool	Existing	90.92	15	\$681.62	15%	75%	\$0.74	135.27	128.14	AEG Research
Large Retail	Cooling	Ductless Mini Split Heat Pump	tonCool	Existing	201.24	15	\$3,359.26	15%	25%	\$0.62	2.24	2.25	7th Power Plan
Large Retail	Heating	Ductless Mini Split Heat Pump	tonCool	Existing	325.36	15	\$3,359.26	15%	25%	\$0.62	28.43	26.30	7th Power Plan
Large Retail	Cooling	Thermostat - WiFi/Interactive	sqft	Existing	0.48	5	\$0.66	30%	40%	\$0.08	35.30	34.45	7th Power Plan
Large Retail	Heating	Thermostat - WiFi/Interactive	sqft	Existing	0.80	5	\$0.66	30%	40%	\$0.08	21.59	20.25	7th Power Plan
Large Retail	Ventilation	Thermostat - WiFi/Interactive	sqft	Existing	0.39	5	\$0.66	30%	40%	\$0.08	34.45	38.25	7th Power Plan
Large Retail	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	Existing	196.28	10	\$8.35	25%	65%	\$0.00	4.25	6.63	Illinois TRM
Large Retail	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	Existing	203.39	10	\$11.64	25%	65%	-\$0.05	2.19	3.45	7th Power Plan
Large Retail	Water Heating	Water Heater - High Efficiency Circulation Pump	WHUnits	Existing	64.20	15	\$36.75	0%	0%	\$0.03	0.00	0.00	Hawaii TRM
Large Retail	Water Heating	Water Heater - Pipe Insulation	PipeFeet	Existing	884.32	15	\$14.88	16%	75%	\$0.00	11.99	17.37	AEG-BEST

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Large Retail	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	Existing	134.39	4	\$144.04	25%	65%	-\$0.15	2.84	4.46	7th Power Plan
Large Retail	Water Heating	Water Heater - Thermostat Setback	WHUnits	Existing	64.32	2	\$5.00	15%	75%	\$0.02	5.77	8.95	Illinois TRM
Large Retail	Water Heating	Water Heater - Solar System	PipeFeet	Existing	3,042.38	20	\$215.28	1%	30%	\$0.00	20.01	29.59	AEG-BEST
Large Retail	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.62	15	\$0.35	3%	23%	\$0.04	136.33	153.15	7th Power Plan
Large Retail	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.85	15	\$0.58	3%	23%	\$0.05	183.96	210.84	7th Power Plan
Large Retail	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	Existing	598.84	15	\$54.41	1%	3%	\$0.01	3.87	4.80	7th Power Plan
Large Retail	Interior Lighting	Interior Lighting - Timeclocks and Timers	occ sens	Existing	0.00	8	\$111.67	7%	15%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Large Retail	Interior Lighting	Interior Lighting - Skylights	1000 sqft	Existing	0.00	15	\$1,006.35	15%	30%	\$0.00	0.00	0.00	AEG Research
Large Retail	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	1000 sqft	Existing	403.08	16	\$1,807.69	5%	15%	\$0.33	34.20	44.75	7th Power Plan
Large Retail	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	Existing	4,218.89	11	\$30.80	15%	50%	\$0.00	132.38	157.77	Illinois TRM
Large Retail	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	ELtg Watts	Existing	1.92	8	\$0.63	15%	25%	\$0.04	34.60	44.43	7th Power Plan
Large Retail	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	Existing	65.62	8	\$55.10	15%	25%	\$0.09	17.52	23.14	Pacific Gas and Electric Research
Large Retail	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	Existing	78.65	7	\$3,400.00	15%	30%	\$4.75	31.05	42.36	AEG Research
Large Retail	Refrigeration	Refrigeration - Anti-Sweat Heater	Fridge Feet	Existing	80.14	8	\$48.18	4%	25%	\$0.09	2.30	2.86	7th Power Plan
Large Retail	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	Existing	107.90	4	\$10.44	4%	25%	\$0.02	2.04	2.08	Michigan Energy Measures Database
Large Retail	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	Existing	1,037.13	16	\$165.20	4%	25%	\$0.02	1.55	1.37	7th Power Plan
Large Retail	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	Existing	150.31	15	\$335.85	0%	0%	\$0.23	0.00	0.00	7th Power Plan
Large Retail	Refrigeration	Refrigeration - Strip Curtain	Walkin Door	Existing	110.76	2	\$10.41	4%	25%	\$0.04	0.35	0.35	7th Power Plan
Large Retail	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBtuh	Existing	2.39	15	\$45.43	2%	13%	\$1.93	8.57	8.60	Annual Energy Outlook, 2015

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Large Retail	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	Existing	50.47	15	\$313.82	2%	13%	\$0.64	15.14	15.01	Annual Energy Outlook, 2015
Large Retail	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	Existing	676.26	10	\$506.05	4%	25%	\$0.10	1.00	0.91	Vermont TRM
Large Retail	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	Existing	48.06	6	\$45.41	0%	0%	\$0.17	0.00	0.00	7th Power Plan
Large Retail	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	Existing	3.87	8	\$3.72	0%	0%	\$0.14	0.00	0.00	7th Power Plan
Large Retail	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	Existing	933.06	5	\$45.85	0%	0%	\$0.01	0.00	0.00	Illinois TRM
Large Retail	Refrigeration	Grocery - ECMs for Display Cases	Fridge Case	Existing	205.00	16	\$165.20	4%	25%	\$0.08	2.06	2.01	7th Power Plan
Large Retail	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	Existing	1,397.81	5	\$187.94	25%	75%	\$0.03	17.51	15.70	Illinois TRM
Large Retail	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	Existing	5,674.75	18	\$8,526.67	25%	50%	\$0.12	50.90	55.77	7th Power Plan
Large Retail	Office Equipment	Office Equipment - Smart Power Strips	Smart Strip	Existing	18.68	4	\$41.63	10%	50%	\$0.52	16.16	13.21	7th Power Plan
Large Retail	Cooling	Lodging - Guest Room Controls	LodgUnit	Existing	214.44	15	\$260.00	0%	0%	\$2.32	0.00	0.00	AEG-BEST
Large Retail	Heating	Lodging - Guest Room Controls	LodgUnit	Existing	-207.00	15	\$260.00	0%	0%	\$2.32	0.00	0.00	AEG-BEST
Large Retail	Office Equipment	Data Center - Best Practice Measures	sqft	Existing	0.01	5	\$0.00	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Retail	Cooling	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.02	0%	0%	\$0.03	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Retail	Ventilation	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.02	0%	0%	\$0.03	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Retail	Interior Lighting	Data Center - Commercially Available Measures	sqft	Existing	0.05	8	\$0.02	0%	0%	\$0.03	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Retail	Office Equipment	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.02	0%	0%	\$0.03	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Retail	Cooling	Data Center - Cutting Edge Measures	sqft	Existing	0.04	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Retail	Office Equipment	Data Center - Cutting Edge Measures	sqft	Existing	0.00	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Retail	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	Existing	15,109.84	18	\$4,092.80	0%	0%	\$0.02	0.00	0.00	7th Power Plan

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Large Retail	Miscellaneous	Pool Pump - Timer	perBldg	Existing	0.00	10	\$85.22	15%	75%	\$0.00	0.00	0.00	Ontario Power TRM
Large Retail	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	Existing	17,776.90	6	\$35.93	1%	3%	\$0.00	0.00	11.14	7th Power Plan
Large Retail	Cooling	Advanced New Construction Designs	sqft	Existing	1.03	25	\$4.11	0%	0%	\$0.06	0.00	0.00	AEG Research
Large Retail	Heating	Advanced New Construction Designs	sqft	Existing	1.67	25	\$4.11	0%	0%	\$0.06	0.00	0.00	AEG Research
Large Retail	Ventilation	Advanced New Construction Designs	sqft	Existing	0.78	25	\$4.11	0%	0%	\$0.06	0.00	0.00	AEG Research
Large Retail	Water Heating	Advanced New Construction Designs	sqft	Existing	0.20	25	\$4.11	0%	0%	\$0.06	0.00	0.00	AEG Research
Large Retail	Interior Lighting	Advanced New Construction Designs	sqft	Existing	1.23	25	\$4.11	0%	0%	\$0.06	0.00	0.00	AEG Research
Large Retail	Exterior Lighting	Advanced New Construction Designs	sqft	Existing	0.23	25	\$4.11	0%	0%	\$0.06	0.00	0.00	AEG Research
Large Retail	Cooling	Strategic Energy Management	sqft	Existing	0.14	3	\$0.37	0%	3%	\$0.12	3.40	3.37	AEG Research
Large Retail	Heating	Strategic Energy Management	sqft	Existing	0.24	3	\$0.37	0%	3%	\$0.12	2.07	1.94	AEG Research
Large Retail	Ventilation	Strategic Energy Management	sqft	Existing	0.12	3	\$0.37	0%	3%	\$0.12	3.37	3.92	AEG Research
Large Retail	Water Heating	Strategic Energy Management	sqft	Existing	0.03	3	\$0.37	0%	3%	\$0.12	0.40	0.63	AEG Research
Large Retail	Interior Lighting	Strategic Energy Management	sqft	Existing	0.19	3	\$0.37	0%	3%	\$0.12	4.77	6.35	AEG Research
Large Retail	Exterior Lighting	Strategic Energy Management	sqft	Existing	0.04	3	\$0.37	0%	3%	\$0.12	0.95	1.27	AEG Research
Large Retail	Refrigeration	Strategic Energy Management	sqft	Existing	0.03	3	\$0.37	0%	3%	\$0.12	0.96	0.87	AEG Research
Large Retail	Office Equipment	Strategic Energy Management	sqft	Existing	0.02	3	\$0.37	0%	3%	\$0.12	0.79	0.66	AEG Research
Large Retail	Cooling	Commissioning	sqft	Existing	0.19	3	\$0.85	0%	0%	\$0.22	0.00	0.00	AEG Research
Large Retail	Heating	Commissioning	sqft	Existing	0.32	3	\$0.85	0%	0%	\$0.22	0.00	0.00	AEG Research
Large Retail	Ventilation	Commissioning	sqft	Existing	0.16	3	\$0.85	0%	0%	\$0.22	0.00	0.00	AEG Research
Large Retail	Water Heating	Commissioning	sqft	Existing	0.01	3	\$0.85	0%	0%	\$0.22	0.00	0.00	AEG Research
Large Retail	Interior Lighting	Commissioning	sqft	Existing	0.21	3	\$0.85	0%	0%	\$0.22	0.00	0.00	AEG Research

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Large Retail	Exterior Lighting	Commissioning	sqft	Existing	0.04	3	\$0.85	0%	0%	\$0.22	0.00	0.00	AEG Research
Large Retail	Refrigeration	Commissioning	sqft	Existing	0.07	3	\$0.85	0%	0%	\$0.22	0.00	0.00	AEG Research
Large Retail	Cooling	Retrocommissioning	sqft	Existing	0.20	3	\$0.54	10%	65%	\$0.14	86.26	85.52	AEG Research
Large Retail	Heating	Retrocommissioning	sqft	Existing	0.33	3	\$0.54	10%	65%	\$0.14	52.58	49.24	AEG Research
Large Retail	Ventilation	Retrocommissioning	sqft	Existing	0.16	3	\$0.54	10%	65%	\$0.14	85.49	99.37	AEG Research
Large Retail	Water Heating	Retrocommissioning	sqft	Existing	0.01	3	\$0.54	10%	65%	\$0.14	3.38	5.33	AEG Research
Large Retail	Interior Lighting	Retrocommissioning	sqft	Existing	0.22	3	\$0.54	10%	65%	\$0.14	100.66	134.23	AEG Research
Large Retail	Exterior Lighting	Retrocommissioning	sqft	Existing	0.04	3	\$0.54	10%	65%	\$0.14	20.09	26.94	AEG Research
Large Retail	Refrigeration	Retrocommissioning	sqft	Existing	0.07	3	\$0.54	10%	65%	\$0.14	40.51	36.69	AEG Research
Large Retail	Interior Lighting	Fruit Storage - Lighting Controls	sqft	Existing	0.15	10	\$0.09	0%	0%	\$0.05	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Retail	Refrigeration	Fruit Storage Refrigeration Retrofit	sqft	Existing	0.23	10	\$1.09	0%	0%	\$0.60	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Retail	Refrigeration	Fruit Storage Refrigeration Tuneup	sqft	Existing	0.06	3	\$0.23	0%	0%	\$1.23	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Retail	Refrigeration	Fruit Storage Retrofit - CO2 Scrub	sqft	Existing	0.11	10	\$3.13	0%	0%	\$3.55	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Retail	Refrigeration	Fruit Storage Retrofit - Membrane	sqft	Existing	0.02	10	\$0.68	0%	0%	\$3.85	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Retail	Cooling	Insulation - Ceiling	sqft roof	New	0.00	45	\$1.28	15%	50%	\$0.05	0.00	0.00	Building Energy Simulation Tool
Large Retail	Heating	Insulation - Ceiling	sqft roof	New	1.25	45	\$1.28	15%	50%	\$0.05	20.70	19.25	Building Energy Simulation Tool
Large Retail	Ventilation	Insulation - Ceiling	sqft roof	New	0.45	45	\$1.28	15%	50%	\$0.05	28.78	29.50	Building Energy Simulation Tool
Large Retail	Cooling	Insulation - Ducting	sqft duct	New	0.26	20	\$0.84	15%	25%	\$0.00	5.18	4.89	Building Energy Simulation Tool
Large Retail	Heating	Insulation - Ducting	sqft duct	New	0.00	20	\$0.84	15%	25%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Large Retail	Ventilation	Insulation - Ducting	sqft duct	New	0.00	20	\$0.84	15%	25%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Large Retail	Cooling	Building Shell - Cool Roofs	sqft roof	New	0.19	20	\$0.78	45%	50%	\$10.00	1.26	1.19	Building Energy Simulation Tool

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Large Retail	Heating	Building Shell - Cool Roofs	sqft roof	New	-0.32	20	\$0.78	45%	50%	\$10.00	-0.76	-0.71	Building Energy Simulation Tool
Large Retail	Ventilation	Building Shell - Cool Roofs	sqft roof	New	-0.12	20	\$0.78	45%	50%	\$10.00	-1.06	-1.11	Building Energy Simulation Tool
Large Retail	Cooling	Insulation - Wall Cavity	sqft wall	New	-0.03	45	\$0.78	15%	50%	\$0.05	-1.23	-1.15	Building Energy Simulation Tool
Large Retail	Heating	Insulation - Wall Cavity	sqft wall	New	0.93	45	\$0.78	15%	50%	\$0.05	15.19	14.07	Building Energy Simulation Tool
Large Retail	Ventilation	Insulation - Wall Cavity	sqft wall	New	0.33	45	\$0.78	15%	50%	\$0.05	21.11	21.56	Building Energy Simulation Tool
Large Retail	Cooling	HVAC - Duct Repair and Sealing	tonCool	New	10.24	18	\$0.57	15%	25%	\$0.00	1.52	1.41	Building Energy Simulation Tool
Large Retail	Heating	HVAC - Duct Repair and Sealing	tonCool	New	14.81	18	\$0.57	15%	25%	\$0.00	0.78	0.72	Building Energy Simulation Tool
Large Retail	Ventilation	HVAC - Duct Repair and Sealing	tonCool	New	5.31	18	\$0.57	15%	25%	\$0.00	1.08	1.11	Building Energy Simulation Tool
Large Retail	Cooling	Windows - High Efficiency Glazing	sqft window	New	6.87	30	\$35.93	66%	66%	\$0.08	0.00	0.00	7th Power Plan
Large Retail	Heating	Windows - High Efficiency Glazing	sqft window	New	22.73	30	\$35.93	66%	66%	\$0.08	0.00	0.00	7th Power Plan
Large Retail	Ventilation	Windows - High Efficiency Glazing	sqft window	New	4.68	30	\$35.93	66%	66%	\$0.08	0.00	0.00	7th Power Plan
Large Retail	Cooling	Chiller - Chilled Water Reset	ChillCtrl	New	2,348.90	10	\$884.85	15%	75%	\$0.05	0.13	0.11	AEG-BEST
Large Retail	Cooling	Chiller - Chilled Water Variable-Flow System	HP cool	New	238.83	15	\$332.55	15%	75%	\$0.14	2.21	1.96	AEG-BEST
Large Retail	Cooling	Chiller - Variable Speed Fans	HP fan	New	559.95	15	\$208.36	15%	75%	\$0.04	0.52	0.46	New Jersey TRM
Large Retail	Cooling	Water-Cooled Chiller - Condenser Water Reset	ChillCtrl	New	18,236.33	10	\$884.85	15%	75%	\$0.01	0.38	0.33	AEG-BEST
Large Retail	Cooling	HVAC - Economizer	HP cool	New	90.78	10	\$168.42	18%	75%	\$0.23	31.49	28.46	AEG-BEST
Large Retail	Heating	Space Heating - Heat Recovery Ventilator	CFM	New	1.78	14	\$5.08	6%	75%	\$0.31	25.54	23.09	7th Power Plan
Large Retail	Ventilation	Ventilation - ECM on VAV Boxes	sqft	New	0.37	18	\$0.25	15%	20%	\$0.05	9.31	9.61	7th Power Plan
Large Retail	Ventilation	Ventilation - Variable Speed Control	sqft	New	0.05	15	\$181.39	19%	50%	\$279.31	5.05	5.39	AEG-BEST

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Large Retail	Ventilation	Ventilation - Demand Controlled	sqft	New	0.02	15	\$0.25	15%	75%	\$0.90	4.18	4.48	7th Power Plan
Large Retail	Cooling	Destratification Fans (HVLS)	Strat Fan	New	3,656.36	15	\$7,270.90	15%	30%	\$0.20	12.40	11.26	AEG Research
Large Retail	Heating	Destratification Fans (HVLS)	Strat Fan	New	0.18	15	\$7,270.90	15%	30%	\$0.20	0.00	0.00	AEG Research
Large Retail	Cooling	RTU - Maintenance	tonCool	New	42.68	3	\$35.00	15%	45%	\$0.25	3.24	2.97	AEG Research
Large Retail	Cooling	RTU - Advanced Controls	sqft	New	0.13	15	\$0.07	15%	45%	\$0.05	12.12	11.07	7th Power Plan
Large Retail	Cooling	RTU - Evaporative Precooler	tonCool	New	87.27	15	\$681.62	15%	75%	\$0.77	74.21	69.45	AEG Research
Large Retail	Cooling	Ductless Mini Split Heat Pump	tonCool	New	171.22	15	\$3,359.26	15%	25%	\$0.69	0.78	0.72	7th Power Plan
Large Retail	Heating	Ductless Mini Split Heat Pump	tonCool	New	309.16	15	\$3,359.26	15%	25%	\$0.69	10.51	9.56	7th Power Plan
Large Retail	Cooling	Thermostat - WiFi/Interactive	sqft	New	0.46	5	\$0.66	30%	40%	\$0.08	2.22	2.04	7th Power Plan
Large Retail	Heating	Thermostat - WiFi/Interactive	sqft	New	0.74	5	\$0.66	30%	40%	\$0.08	1.28	1.13	7th Power Plan
Large Retail	Ventilation	Thermostat - WiFi/Interactive	sqft	New	0.27	5	\$0.66	30%	40%	\$0.08	1.79	1.93	7th Power Plan
Large Retail	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	New	59.25	10	\$8.35	25%	65%	\$0.01	1.01	1.44	Illinois TRM
Large Retail	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	New	61.75	10	\$11.64	25%	65%	-\$0.13	0.53	0.75	7th Power Plan
Large Retail	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	New	58.66	15	\$36.75	0%	0%	\$0.03	0.00	0.00	Hawaii TRM
Large Retail	Water Heating	Water Heater - Pipe Insulation	PipeFeet	New	777.19	15	\$14.88	1%	75%	\$0.00	4.66	6.28	AEG-BEST
Large Retail	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	New	40.68	4	\$144.04	25%	65%	-\$0.43	0.28	0.43	7th Power Plan
Large Retail	Water Heating	Water Heater - Thermostat Setback	WHunits	New	58.77	2	\$5.00	15%	75%	\$0.02	0.24	0.37	Illinois TRM
Large Retail	Water Heating	Water Heater - Solar System	PipeFeet	New	2,697.24	20	\$215.28	1%	30%	\$0.00	6.51	8.72	AEG-BEST
Large Retail	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.60	15	\$0.35	11%	23%	\$0.04	66.52	71.61	7th Power Plan
Large Retail	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.82	15	\$0.58	11%	23%	\$0.05	91.48	99.03	7th Power Plan
Large Retail	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	New	574.63	15	\$54.41	1%	3%	\$0.01	1.10	1.27	7th Power Plan

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Large Retail	Interior Lighting	Interior Lighting - Timeclocks and Timers	occ sens	New	0.00	8	\$111.67	7%	15%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Large Retail	Interior Lighting	Interior Lighting - Skylights	1000 sqft	New	0.00	15	\$1,006.35	18%	33%	\$0.00	0.00	0.00	AEG Research
Large Retail	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	1000 sqft	New	377.81	16	\$1,807.69	5%	15%	\$0.32	11.48	13.43	7th Power Plan
Large Retail	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	New	3,935.89	11	\$30.80	15%	50%	\$0.00	36.04	40.72	Illinois TRM
Large Retail	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	ELtg Watts	New	1.77	8	\$0.63	15%	25%	\$0.03	7.19	9.57	7th Power Plan
Large Retail	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	New	61.77	8	\$55.10	15%	25%	\$0.08	3.78	5.02	Pacific Gas and Electric Research
Large Retail	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	New	74.83	7	\$3,400.00	15%	30%	\$4.57	6.00	8.28	AEG Research
Large Retail	Refrigeration	Refrigeration - Anti-Sweat Heater	Fridge Feet	New	66.39	8	\$48.18	4%	25%	\$0.11	0.44	0.49	7th Power Plan
Large Retail	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	New	94.36	4	\$10.44	4%	25%	\$0.03	0.18	0.16	Michigan Energy Measures Database
Large Retail	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	New	943.95	16	\$165.20	4%	25%	\$0.02	0.52	0.43	7th Power Plan
Large Retail	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	New	143.82	15	\$335.85	0%	0%	\$0.25	0.00	0.00	7th Power Plan
Large Retail	Refrigeration	Refrigeration - Strip Curtain	Walkin Door	New	106.86	2	\$10.41	4%	25%	\$0.05	0.01	0.01	7th Power Plan
Large Retail	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBtuh	New	2.31	15	\$45.43	2%	13%	\$2.06	2.75	2.51	Annual Energy Outlook, 2015
Large Retail	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	New	48.30	15	\$313.82	2%	13%	\$0.69	4.79	4.37	Annual Energy Outlook, 2015
Large Retail	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	New	627.45	10	\$506.05	4%	25%	\$0.11	0.26	0.20	Vermont TRM
Large Retail	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	New	45.45	6	\$45.41	0%	0%	\$0.19	0.00	0.00	7th Power Plan
Large Retail	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	New	3.66	8	\$3.72	0%	0%	\$0.16	0.00	0.00	7th Power Plan
Large Retail	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	New	880.51	5	\$45.85	0%	0%	\$0.01	0.00	0.00	Illinois TRM
Large Retail	Refrigeration	Grocery - ECMs for Display Cases	Fridge Case	New	190.23	16	\$165.20	4%	25%	\$0.09	0.64	0.59	7th Power Plan

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Large Retail	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	New	1,370.56	5	\$187.94	25%	75%	\$0.03	2.11	1.78	Illinois TRM
Large Retail	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	New	3,984.97	18	\$8,526.67	25%	50%	\$0.14	20.36	21.04	7th Power Plan
Large Retail	Office Equipment	Office Equipment - Smart Power Strips	Smart Strip	New	18.34	4	\$41.63	10%	50%	\$0.53	1.51	1.19	7th Power Plan
Large Retail	Cooling	Lodging - Guest Room Controls	LodgUnit	New	164.53	15	\$260.00	0%	0%	\$10.00	0.00	0.00	AEG-BEST
Large Retail	Heating	Lodging - Guest Room Controls	LodgUnit	New	-179.00	15	\$260.00	0%	0%	\$10.00	0.00	0.00	AEG-BEST
Large Retail	Office Equipment	Data Center - Best Practice Measures	sqft	New	0.01	5	\$0.00	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Retail	Cooling	Data Center - Commercially Available Measures	sqft	New	0.01	8	\$0.02	0%	0%	\$0.03	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Retail	Ventilation	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.02	0%	0%	\$0.03	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Retail	Interior Lighting	Data Center - Commercially Available Measures	sqft	New	0.04	8	\$0.02	0%	0%	\$0.03	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Retail	Office Equipment	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.02	0%	0%	\$0.03	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Retail	Cooling	Data Center - Cutting Edge Measures	sqft	New	0.04	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Retail	Office Equipment	Data Center - Cutting Edge Measures	sqft	New	0.00	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Retail	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	New	10,598.58	18	\$4,092.80	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Large Retail	Miscellaneous	Pool Pump - Timer	perBldg	New	0.00	10	\$85.22	15%	75%	\$0.00	0.00	0.00	Ontario Power TRM
Large Retail	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	New	5,925.63	6	\$35.93	1%	3%	\$0.00	0.00	0.96	7th Power Plan
Large Retail	Cooling	Advanced New Construction Designs	sqft	New	0.97	25	\$4.11	10%	30%	\$0.06	86.00	80.24	AEG Research
Large Retail	Heating	Advanced New Construction Designs	sqft	New	1.54	25	\$4.11	10%	30%	\$0.06	48.17	44.98	AEG Research
Large Retail	Ventilation	Advanced New Construction Designs	sqft	New	0.55	25	\$4.11	10%	30%	\$0.06	65.98	68.59	AEG Research
Large Retail	Water Heating	Advanced New Construction Designs	sqft	New	0.18	25	\$4.11	10%	30%	\$0.06	10.01	11.59	AEG Research

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Large Retail	Interior Lighting	Advanced New Construction Designs	sqft	New	1.19	25	\$4.11	10%	30%	\$0.06	118.46	127.30	AEG Research
Large Retail	Exterior Lighting	Advanced New Construction Designs	sqft	New	0.22	25	\$4.11	10%	30%	\$0.06	22.20	24.41	AEG Research
Large Retail	Cooling	Strategic Energy Management	sqft	New	0.14	3	\$0.34	0%	3%	\$0.12	0.22	0.20	AEG Research
Large Retail	Heating	Strategic Energy Management	sqft	New	0.23	3	\$0.34	0%	3%	\$0.12	0.13	0.11	AEG Research
Large Retail	Ventilation	Strategic Energy Management	sqft	New	0.08	3	\$0.34	0%	3%	\$0.12	0.18	0.19	AEG Research
Large Retail	Water Heating	Strategic Energy Management	sqft	New	0.03	3	\$0.34	0%	3%	\$0.12	0.03	0.04	AEG Research
Large Retail	Interior Lighting	Strategic Energy Management	sqft	New	0.18	3	\$0.34	0%	3%	\$0.12	0.32	0.43	AEG Research
Large Retail	Exterior Lighting	Strategic Energy Management	sqft	New	0.03	3	\$0.34	0%	3%	\$0.12	0.06	0.09	AEG Research
Large Retail	Refrigeration	Strategic Energy Management	sqft	New	0.03	3	\$0.34	0%	3%	\$0.12	0.06	0.05	AEG Research
Large Retail	Office Equipment	Strategic Energy Management	sqft	New	0.02	3	\$0.34	0%	3%	\$0.12	0.05	0.04	AEG Research
Large Retail	Cooling	Commissioning	sqft	New	0.19	3	\$0.79	10%	65%	\$0.22	5.65	5.16	AEG Research
Large Retail	Heating	Commissioning	sqft	New	0.31	3	\$0.79	10%	65%	\$0.22	3.24	2.87	AEG Research
Large Retail	Ventilation	Commissioning	sqft	New	0.11	3	\$0.79	10%	65%	\$0.22	4.55	4.92	AEG Research
Large Retail	Water Heating	Commissioning	sqft	New	0.01	3	\$0.79	10%	65%	\$0.22	0.23	0.36	AEG Research
Large Retail	Interior Lighting	Commissioning	sqft	New	0.21	3	\$0.79	10%	65%	\$0.22	6.81	9.00	AEG Research
Large Retail	Exterior Lighting	Commissioning	sqft	New	0.04	3	\$0.79	10%	65%	\$0.22	1.28	1.92	AEG Research
Large Retail	Refrigeration	Commissioning	sqft	New	0.07	3	\$0.79	10%	65%	\$0.22	2.58	2.11	AEG Research
Large Retail	Cooling	Retrocommissioning	sqft	New	0.19	3	\$0.50	0%	0%	\$0.14	0.00	0.00	AEG Research
Large Retail	Heating	Retrocommissioning	sqft	New	0.31	3	\$0.50	0%	0%	\$0.14	0.00	0.00	AEG Research
Large Retail	Ventilation	Retrocommissioning	sqft	New	0.11	3	\$0.50	0%	0%	\$0.14	0.00	0.00	AEG Research
Large Retail	Water Heating	Retrocommissioning	sqft	New	0.01	3	\$0.50	0%	0%	\$0.14	0.00	0.00	AEG Research
Large Retail	Interior Lighting	Retrocommissioning	sqft	New	0.21	3	\$0.50	0%	0%	\$0.14	0.00	0.00	AEG Research

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Large Retail	Exterior Lighting	Retrocommissioning	sqft	New	0.04	3	\$0.50	0%	0%	\$0.14	0.00	0.00	AEG Research
Large Retail	Refrigeration	Retrocommissioning	sqft	New	0.07	3	\$0.50	0%	0%	\$0.14	0.00	0.00	AEG Research
Large Retail	Interior Lighting	Fruit Storage - Lighting Controls	sqft	New	0.15	10	\$0.09	0%	0%	\$0.05	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Retail	Refrigeration	Fruit Storage Refrigeration Retrofit	sqft	New	0.22	10	\$1.09	0%	0%	\$0.65	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Retail	Refrigeration	Fruit Storage Refrigeration Tuneup	sqft	New	0.06	3	\$0.23	0%	0%	\$1.34	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Retail	Refrigeration	Fruit Storage Retrofit - CO2 Scrub	sqft	New	0.11	10	\$3.13	0%	0%	\$3.87	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Retail	Refrigeration	Fruit Storage Retrofit - Membrane	sqft	New	0.02	10	\$0.68	0%	0%	\$4.20	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Retail	Cooling	Insulation - Ceiling	sqft roof	Existing	0.17	45	\$1.28	15%	35%	\$0.13	78.50	72.95	Building Energy Simulation Tool
Small Retail	Heating	Insulation - Ceiling	sqft roof	Existing	0.50	45	\$1.28	15%	35%	\$0.13	76.83	70.35	Building Energy Simulation Tool
Small Retail	Ventilation	Insulation - Ceiling	sqft roof	Existing	0.08	45	\$1.28	15%	35%	\$0.13	47.41	49.57	Building Energy Simulation Tool
Small Retail	Cooling	Insulation - Ducting	sqft duct	Existing	0.35	20	\$0.84	15%	50%	\$0.00	71.54	66.79	Building Energy Simulation Tool
Small Retail	Heating	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.84	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Small Retail	Ventilation	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.84	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Small Retail	Cooling	Building Shell - Cool Roofs	sqft roof	Existing	0.34	20	\$0.78	45%	50%	\$10.00	36.95	37.33	Building Energy Simulation Tool
Small Retail	Heating	Building Shell - Cool Roofs	sqft roof	Existing	-0.28	20	\$0.78	45%	50%	\$10.00	-10.21	-10.21	Building Energy Simulation Tool
Small Retail	Ventilation	Building Shell - Cool Roofs	sqft roof	Existing	-0.05	20	\$0.78	45%	50%	\$10.00	-7.18	-7.84	Building Energy Simulation Tool
Small Retail	Cooling	Insulation - Wall Cavity	sqft wall	Existing	-0.08	45	\$0.78	15%	35%	\$0.02	-11.15	-10.28	Building Energy Simulation Tool
Small Retail	Heating	Insulation - Wall Cavity	sqft wall	Existing	2.24	45	\$0.78	15%	35%	\$0.02	104.52	94.71	Building Energy Simulation Tool
Small Retail	Ventilation	Insulation - Wall Cavity	sqft wall	Existing	0.38	45	\$0.78	15%	35%	\$0.02	65.10	67.01	Building Energy Simulation Tool

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Small Retail	Cooling	HVAC - Duct Repair and Sealing	tonCool	Existing	4.19	18	\$0.57	15%	50%	\$10.00	12.93	13.05	Building Energy Simulation Tool
Small Retail	Heating	HVAC - Duct Repair and Sealing	tonCool	Existing	-5.24	18	\$0.57	15%	50%	\$10.00	-5.35	-5.35	Building Energy Simulation Tool
Small Retail	Ventilation	HVAC - Duct Repair and Sealing	tonCool	Existing	-0.98	18	\$0.57	15%	50%	\$10.00	-3.76	-4.11	Building Energy Simulation Tool
Small Retail	Cooling	Windows - High Efficiency Glazing	sqft window	Existing	7.17	30	\$35.93	48%	48%	\$0.08	0.00	0.00	7th Power Plan
Small Retail	Heating	Windows - High Efficiency Glazing	sqft window	Existing	26.03	30	\$35.93	48%	48%	\$0.08	0.00	0.00	7th Power Plan
Small Retail	Ventilation	Windows - High Efficiency Glazing	sqft window	Existing	2.53	30	\$35.93	48%	48%	\$0.08	0.00	0.00	7th Power Plan
Small Retail	Cooling	Chiller - Chilled Water Reset	ChillCtrl	Existing	0.00	10	\$884.85	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Small Retail	Cooling	Chiller - Chilled Water Variable-Flow System	HP cool	Existing	0.00	15	\$332.55	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Small Retail	Cooling	Chiller - Variable Speed Fans	HP fan	Existing	0.00	15	\$208.36	15%	75%	\$0.00	0.00	0.00	New Jersey TRM
Small Retail	Cooling	Water-Cooled Chiller - Condenser Water Reset	ChillCtrl	Existing	0.00	10	\$884.85	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Small Retail	Cooling	HVAC - Economizer	HP cool	Existing	98.57	10	\$168.42	18%	75%	\$0.22	410.55	374.50	AEG-BEST
Small Retail	Heating	Space Heating - Heat Recovery Ventilator	CFM	Existing	2.17	14	\$5.08	3%	75%	\$0.26	298.96	265.89	7th Power Plan
Small Retail	Ventilation	Ventilation - ECM on VAV Boxes	sqft	Existing	0.21	18	\$0.25	15%	20%	\$0.10	29.51	30.70	7th Power Plan
Small Retail	Ventilation	Ventilation - Variable Speed Control	sqft	Existing	0.07	15	\$181.39	13%	25%	\$220.28	24.22	27.18	AEG-BEST
Small Retail	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.01	15	\$0.25	15%	25%	\$1.96	3.30	3.63	7th Power Plan
Small Retail	Cooling	Destratification Fans (HVLS)	Strat Fan	Existing	4,189.14	15	\$7,270.90	15%	15%	\$0.04	0.00	0.00	AEG Research
Small Retail	Heating	Destratification Fans (HVLS)	Strat Fan	Existing	14,071.67	15	\$7,270.90	15%	15%	\$0.04	0.00	0.00	AEG Research
Small Retail	Cooling	RTU - Maintenance	tonCool	Existing	45.01	3	\$35.00	15%	45%	\$0.23	111.92	110.64	AEG Research
Small Retail	Cooling	RTU - Advanced Controls	sqft	Existing	0.26	15	\$0.07	15%	45%	\$0.03	158.09	144.65	7th Power Plan
Small Retail	Cooling	RTU - Evaporative Precooler	tonCool	Existing	93.47	15	\$681.62	15%	75%	\$0.72	428.70	408.54	AEG Research
Small Retail	Cooling	Ductless Mini Split Heat Pump	tonCool	Existing	194.79	15	\$3,359.26	15%	75%	\$0.56	30.16	30.54	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Small Retail	Heating	Ductless Mini Split Heat Pump	tonCool	Existing	389.57	15	\$3,359.26	15%	75%	\$0.56	449.11	415.89	7th Power Plan
Small Retail	Cooling	Thermostat - WiFi/Interactive	sqft	Existing	0.50	5	\$0.66	30%	40%	\$0.09	112.09	110.20	7th Power Plan
Small Retail	Heating	Thermostat - WiFi/Interactive	sqft	Existing	0.88	5	\$0.66	30%	40%	\$0.09	67.03	63.11	7th Power Plan
Small Retail	Ventilation	Thermostat - WiFi/Interactive	sqft	Existing	0.15	5	\$0.66	30%	40%	\$0.09	43.07	45.90	7th Power Plan
Small Retail	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	Existing	24.59	10	\$8.35	25%	65%	\$0.03	10.55	16.45	Illinois TRM
Small Retail	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	Existing	25.48	10	\$11.64	25%	65%	-\$0.36	5.45	8.56	7th Power Plan
Small Retail	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	Existing	65.28	15	\$36.75	0%	0%	\$0.03	0.00	0.00	Hawaii TRM
Small Retail	Water Heating	Water Heater - Pipe Insulation	PipeFeet	Existing	110.74	15	\$14.88	16%	75%	\$0.01	29.76	43.09	AEG-BEST
Small Retail	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	Existing	16.84	4	\$144.04	25%	65%	-\$1.16	7.06	11.08	7th Power Plan
Small Retail	Water Heating	Water Heater - Thermostat Setback	WHunits	Existing	64.33	2	\$5.00	15%	75%	\$0.02	14.31	22.22	Illinois TRM
Small Retail	Water Heating	Water Heater - Solar System	PipeFeet	Existing	381.23	20	\$215.28	1%	30%	\$0.03	49.68	73.48	AEG-BEST
Small Retail	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.41	15	\$0.35	3%	23%	\$0.07	281.26	315.96	7th Power Plan
Small Retail	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.56	15	\$0.58	3%	23%	\$0.08	379.51	434.98	7th Power Plan
Small Retail	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	Existing	177.86	15	\$54.41	1%	3%	\$0.02	7.98	9.91	7th Power Plan
Small Retail	Interior Lighting	Interior Lighting - Timeclocks and Timers	occ sens	Existing	0.00	8	\$111.67	7%	15%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Small Retail	Interior Lighting	Interior Lighting - Skylights	1000 sqft	Existing	0.00	15	\$1,006.35	15%	25%	\$0.00	0.00	0.00	AEG Research
Small Retail	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	1000 sqft	Existing	266.03	16	\$1,807.69	5%	15%	\$0.49	70.55	92.32	7th Power Plan
Small Retail	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	Existing	2,784.47	11	\$30.80	15%	50%	\$0.00	273.10	325.49	Illinois TRM
Small Retail	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	ELtg Watts	Existing	1.92	8	\$0.63	15%	25%	\$0.04	108.16	138.89	7th Power Plan

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Small Retail	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	Existing	65.62	8	\$55.10	15%	25%	\$0.09	54.78	72.32	Pacific Gas and Electric Research
Small Retail	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	Existing	78.65	7	\$3,400.00	15%	30%	\$4.75	97.07	132.42	AEG Research
Small Retail	Refrigeration	Refrigeration - Anti-Sweat Heater	Fridge Feet	Existing	8.33	8	\$48.18	4%	25%	\$0.87	0.25	0.29	7th Power Plan
Small Retail	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	Existing	16.66	4	\$10.44	4%	25%	\$0.16	1.50	1.29	Michigan Energy Measures Database
Small Retail	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	Existing	112.14	16	\$165.20	4%	25%	\$0.15	2.83	2.31	7th Power Plan
Small Retail	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	Existing	13.18	15	\$335.85	0%	0%	\$2.59	0.00	0.00	7th Power Plan
Small Retail	Refrigeration	Refrigeration - Strip Curtain	Walkin Door	Existing	13.84	2	\$10.41	4%	25%	\$0.34	0.61	0.59	7th Power Plan
Small Retail	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	Existing	0.20	15	\$45.43	2%	13%	\$21.66	2.22	2.07	Annual Energy Outlook, 2015
Small Retail	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	Existing	4.21	15	\$313.82	2%	13%	\$7.22	3.89	3.61	Annual Energy Outlook, 2015
Small Retail	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	Existing	74.17	10	\$506.05	4%	25%	\$0.87	1.88	1.54	Vermont TRM
Small Retail	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	Existing	5.39	6	\$45.41	0%	0%	\$1.53	0.00	0.00	7th Power Plan
Small Retail	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	Existing	0.43	8	\$3.72	0%	0%	\$1.27	0.00	0.00	7th Power Plan
Small Retail	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	Existing	104.10	5	\$45.85	0%	0%	\$0.09	0.00	0.00	Illinois TRM
Small Retail	Refrigeration	Grocery - ECMs for Display Cases	Fridge Case	Existing	22.63	16	\$165.20	4%	25%	\$0.73	0.23	0.22	7th Power Plan
Small Retail	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	Existing	1,391.74	5	\$187.94	25%	75%	\$0.03	6.85	6.10	Illinois TRM
Small Retail	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	Existing	2,238.24	18	\$8,526.67	25%	50%	\$0.31	63.22	66.64	7th Power Plan
Small Retail	Office Equipment	Office Equipment - Smart Power Strips	Smart Strip	Existing	11.42	4	\$41.63	10%	50%	\$0.84	32.48	25.00	7th Power Plan
Small Retail	Cooling	Lodging - Guest Room Controls	LodgUnit	Existing	180.64	15	\$260.00	0%	0%	\$10.00	0.00	0.00	AEG-BEST
Small Retail	Heating	Lodging - Guest Room Controls	LodgUnit	Existing	-206.45	15	\$260.00	0%	0%	\$10.00	0.00	0.00	AEG-BEST

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Small Retail	Office Equipment	Data Center - Best Practice Measures	sqft	Existing	0.03	5	\$0.00	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Retail	Cooling	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.01	0%	0%	\$0.03	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Retail	Ventilation	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.01	0%	0%	\$0.03	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Retail	Interior Lighting	Data Center - Commercially Available Measures	sqft	Existing	0.03	8	\$0.01	0%	0%	\$0.03	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Retail	Office Equipment	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.01	0%	0%	\$0.03	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Retail	Cooling	Data Center - Cutting Edge Measures	sqft	Existing	0.05	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Retail	Office Equipment	Data Center - Cutting Edge Measures	sqft	Existing	0.00	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Retail	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	Existing	872.21	18	\$4,092.80	0%	0%	\$0.38	0.00	0.00	7th Power Plan
Small Retail	Miscellaneous	Pool Pump - Timer	perBldg	Existing	0.00	10	\$85.22	15%	75%	\$0.00	0.00	0.00	Ontario Power TRM
Small Retail	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	Existing	1,865.22	6	\$35.93	1%	3%	\$0.00	0.00	24.36	7th Power Plan
Small Retail	Cooling	Advanced New Construction Designs	sqft	Existing	1.06	25	\$4.11	0%	0%	\$0.07	0.00	0.00	AEG Research
Small Retail	Heating	Advanced New Construction Designs	sqft	Existing	1.84	25	\$4.11	0%	0%	\$0.07	0.00	0.00	AEG Research
Small Retail	Ventilation	Advanced New Construction Designs	sqft	Existing	0.31	25	\$4.11	0%	0%	\$0.07	0.00	0.00	AEG Research
Small Retail	Water Heating	Advanced New Construction Designs	sqft	Existing	0.16	25	\$4.11	0%	0%	\$0.07	0.00	0.00	AEG Research
Small Retail	Interior Lighting	Advanced New Construction Designs	sqft	Existing	0.81	25	\$4.11	0%	0%	\$0.07	0.00	0.00	AEG Research
Small Retail	Exterior Lighting	Advanced New Construction Designs	sqft	Existing	0.23	25	\$4.11	0%	0%	\$0.07	0.00	0.00	AEG Research
Small Retail	Cooling	Strategic Energy Management	sqft	Existing	0.15	3	\$0.29	0%	3%	\$0.12	10.78	10.80	AEG Research
Small Retail	Heating	Strategic Energy Management	sqft	Existing	0.25	3	\$0.29	0%	3%	\$0.12	5.93	5.91	AEG Research
Small Retail	Ventilation	Strategic Energy Management	sqft	Existing	0.05	3	\$0.29	0%	3%	\$0.12	4.21	4.63	AEG Research

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Small Retail	Water Heating	Strategic Energy Management	sqft	Existing	0.03	3	\$0.29	0%	3%	\$0.12	0.99	1.57	AEG Research
Small Retail	Interior Lighting	Strategic Energy Management	sqft	Existing	0.12	3	\$0.29	0%	3%	\$0.12	9.83	13.10	AEG Research
Small Retail	Exterior Lighting	Strategic Energy Management	sqft	Existing	0.04	3	\$0.29	0%	3%	\$0.12	2.97	3.98	AEG Research
Small Retail	Refrigeration	Strategic Energy Management	sqft	Existing	0.00	3	\$0.29	0%	3%	\$0.12	0.44	0.22	AEG Research
Small Retail	Office Equipment	Strategic Energy Management	sqft	Existing	0.02	3	\$0.29	0%	3%	\$0.12	1.60	1.25	AEG Research
Small Retail	Cooling	Commissioning	sqft	Existing	0.20	3	\$0.71	0%	0%	\$0.23	0.00	0.00	AEG Research
Small Retail	Heating	Commissioning	sqft	Existing	0.34	3	\$0.71	0%	0%	\$0.23	0.00	0.00	AEG Research
Small Retail	Ventilation	Commissioning	sqft	Existing	0.06	3	\$0.71	0%	0%	\$0.23	0.00	0.00	AEG Research
Small Retail	Water Heating	Commissioning	sqft	Existing	0.01	3	\$0.71	0%	0%	\$0.23	0.00	0.00	AEG Research
Small Retail	Interior Lighting	Commissioning	sqft	Existing	0.14	3	\$0.71	0%	0%	\$0.23	0.00	0.00	AEG Research
Small Retail	Exterior Lighting	Commissioning	sqft	Existing	0.04	3	\$0.71	0%	0%	\$0.23	0.00	0.00	AEG Research
Small Retail	Refrigeration	Commissioning	sqft	Existing	0.01	3	\$0.71	0%	0%	\$0.23	0.00	0.00	AEG Research
Small Retail	Cooling	Retrocommissioning	sqft	Existing	0.21	3	\$0.45	10%	65%	\$0.15	273.15	273.88	AEG Research
Small Retail	Heating	Retrocommissioning	sqft	Existing	0.35	3	\$0.45	10%	65%	\$0.15	150.44	149.93	AEG Research
Small Retail	Ventilation	Retrocommissioning	sqft	Existing	0.07	3	\$0.45	10%	65%	\$0.15	106.76	117.42	AEG Research
Small Retail	Water Heating	Retrocommissioning	sqft	Existing	0.01	3	\$0.45	10%	65%	\$0.15	8.38	13.24	AEG Research
Small Retail	Interior Lighting	Retrocommissioning	sqft	Existing	0.14	3	\$0.45	10%	65%	\$0.15	207.67	276.92	AEG Research
Small Retail	Exterior Lighting	Retrocommissioning	sqft	Existing	0.04	3	\$0.45	10%	65%	\$0.15	62.81	84.22	AEG Research
Small Retail	Refrigeration	Retrocommissioning	sqft	Existing	0.01	3	\$0.45	10%	65%	\$0.15	18.76	9.24	AEG Research
Small Retail	Interior Lighting	Fruit Storage - Lighting Controls	sqft	Existing	0.10	10	\$0.09	0%	0%	\$0.08	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Retail	Refrigeration	Fruit Storage Refrigeration Retrofit	sqft	Existing	0.02	10	\$1.09	0%	0%	\$5.75	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Retail	Refrigeration	Fruit Storage Refrigeration Tuneup	sqft	Existing	0.01	3	\$0.23	0%	0%	\$11.79	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx

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Small Retail	Refrigeration	Fruit Storage Retrofit - CO2 Scrub	sqft	Existing	0.01	10	\$3.13	0%	0%	\$34.10	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Retail	Refrigeration	Fruit Storage Retrofit - Membrane	sqft	Existing	0.00	10	\$0.68	0%	0%	\$37.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Retail	Cooling	Insulation - Ceiling	sqft roof	New	0.00	45	\$1.28	15%	50%	\$0.19	0.00	0.00	Building Energy Simulation Tool
Small Retail	Heating	Insulation - Ceiling	sqft roof	New	0.45	45	\$1.28	15%	50%	\$0.19	63.78	59.25	Building Energy Simulation Tool
Small Retail	Ventilation	Insulation - Ceiling	sqft roof	New	0.06	45	\$1.28	15%	50%	\$0.19	35.97	36.27	Building Energy Simulation Tool
Small Retail	Cooling	Insulation - Ducting	sqft duct	New	0.58	20	\$0.84	15%	50%	\$0.10	62.51	58.42	Building Energy Simulation Tool
Small Retail	Heating	Insulation - Ducting	sqft duct	New	0.17	20	\$0.84	15%	50%	\$0.10	6.05	5.64	Building Energy Simulation Tool
Small Retail	Ventilation	Insulation - Ducting	sqft duct	New	0.02	20	\$0.84	15%	50%	\$0.10	3.41	3.45	Building Energy Simulation Tool
Small Retail	Cooling	Building Shell - Cool Roofs	sqft roof	New	0.12	20	\$0.78	45%	50%	\$10.00	7.25	6.87	Building Energy Simulation Tool
Small Retail	Heating	Building Shell - Cool Roofs	sqft roof	New	-0.11	20	\$0.78	45%	50%	\$10.00	-2.25	-2.11	Building Energy Simulation Tool
Small Retail	Ventilation	Building Shell - Cool Roofs	sqft roof	New	-0.02	20	\$0.78	45%	50%	\$10.00	-1.33	-1.36	Building Energy Simulation Tool
Small Retail	Cooling	Insulation - Wall Cavity	sqft wall	New	0.00	45	\$0.78	15%	50%	\$0.12	-0.34	-0.31	Building Energy Simulation Tool
Small Retail	Heating	Insulation - Wall Cavity	sqft wall	New	0.43	45	\$0.78	15%	50%	\$0.12	18.21	16.88	Building Energy Simulation Tool
Small Retail	Ventilation	Insulation - Wall Cavity	sqft wall	New	0.06	45	\$0.78	15%	50%	\$0.12	10.32	10.37	Building Energy Simulation Tool
Small Retail	Cooling	HVAC - Duct Repair and Sealing	tonCool	New	4.87	18	\$0.57	15%	50%	\$0.00	7.76	7.20	Building Energy Simulation Tool
Small Retail	Heating	HVAC - Duct Repair and Sealing	tonCool	New	19.90	18	\$0.57	15%	50%	\$0.00	10.41	9.61	Building Energy Simulation Tool
Small Retail	Ventilation	HVAC - Duct Repair and Sealing	tonCool	New	2.70	18	\$0.57	15%	50%	\$0.00	5.90	5.94	Building Energy Simulation Tool
Small Retail	Cooling	Windows - High Efficiency Glazing	sqft window	New	6.81	30	\$35.93	66%	66%	\$0.09	0.00	0.00	7th Power Plan
Small Retail	Heating	Windows - High Efficiency Glazing	sqft window	New	23.44	30	\$35.93	66%	66%	\$0.09	0.00	0.00	7th Power Plan

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Small Retail	Ventilation	Windows - High Efficiency Glazing	sqft window	New	1.83	30	\$35.93	66%	66%	\$0.09	0.00	0.00	7th Power Plan
Small Retail	Cooling	Chiller - Chilled Water Reset	ChillCtrl	New	0.00	10	\$884.85	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Small Retail	Cooling	Chiller - Chilled Water Variable-Flow System	HP cool	New	0.00	15	\$332.55	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Small Retail	Cooling	Chiller - Variable Speed Fans	HP fan	New	0.00	15	\$208.36	15%	75%	\$0.00	0.00	0.00	New Jersey TRM
Small Retail	Cooling	Water-Cooled Chiller - Condenser Water Reset	ChillCtrl	New	0.00	10	\$884.85	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Small Retail	Cooling	HVAC - Economizer	HP cool	New	94.89	10	\$168.42	18%	75%	\$0.22	102.16	92.14	AEG-BEST
Small Retail	Heating	Space Heating - Heat Recovery Ventilator	CFM	New	1.94	14	\$5.08	6%	75%	\$0.28	79.25	71.12	7th Power Plan
Small Retail	Ventilation	Ventilation - ECM on VAV Boxes	sqft	New	0.15	18	\$0.25	15%	20%	\$0.12	11.85	11.94	7th Power Plan
Small Retail	Ventilation	Ventilation - Variable Speed Control	sqft	New	0.05	15	\$181.39	19%	25%	\$263.52	3.18	3.28	AEG-BEST
Small Retail	Ventilation	Ventilation - Demand Controlled	sqft	New	0.01	15	\$0.25	15%	25%	\$2.34	0.88	0.91	7th Power Plan
Small Retail	Cooling	Destratification Fans (HVLS)	Strat Fan	New	3,981.28	15	\$7,270.90	15%	15%	\$0.05	0.00	0.00	AEG Research
Small Retail	Heating	Destratification Fans (HVLS)	Strat Fan	New	12,792.10	15	\$7,270.90	15%	15%	\$0.05	0.00	0.00	AEG Research
Small Retail	Cooling	RTU - Maintenance	tonCool	New	44.62	3	\$35.00	15%	45%	\$0.24	10.49	9.57	AEG Research
Small Retail	Cooling	RTU - Advanced Controls	sqft	New	0.25	15	\$0.07	15%	45%	\$0.03	73.23	66.86	7th Power Plan
Small Retail	Cooling	RTU - Evaporative Precooler	tonCool	New	91.35	15	\$681.62	15%	75%	\$0.74	240.63	225.32	AEG Research
Small Retail	Cooling	Ductless Mini Split Heat Pump	tonCool	New	166.85	15	\$3,359.26	15%	75%	\$0.62	10.56	9.82	7th Power Plan
Small Retail	Heating	Ductless Mini Split Heat Pump	tonCool	New	372.44	15	\$3,359.26	15%	75%	\$0.62	167.87	151.77	7th Power Plan
Small Retail	Cooling	Thermostat - WiFi/Interactive	sqft	New	0.48	5	\$0.66	30%	40%	\$0.09	7.18	6.57	7th Power Plan
Small Retail	Heating	Thermostat - WiFi/Interactive	sqft	New	0.81	5	\$0.66	30%	40%	\$0.09	3.97	3.49	7th Power Plan
Small Retail	Ventilation	Thermostat - WiFi/Interactive	sqft	New	0.11	5	\$0.66	30%	40%	\$0.09	2.26	2.34	7th Power Plan
Small Retail	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	New	22.27	10	\$8.35	25%	65%	\$0.03	2.52	3.57	Illinois TRM

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Small Retail	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	New	23.21	10	\$11.64	25%	65%	-\$0.36	1.32	1.86	7th Power Plan
Small Retail	Water Heating	Water Heater - High Efficiency Circulation Pump	WHUnits	New	59.12	15	\$36.75	0%	0%	\$0.03	0.00	0.00	Hawaii TRM
Small Retail	Water Heating	Water Heater - Pipe Insulation	PipeFeet	New	97.33	15	\$14.88	1%	75%	\$0.01	11.57	15.57	AEG-BEST
Small Retail	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	New	15.36	4	\$144.04	25%	65%	-\$1.15	0.70	1.07	7th Power Plan
Small Retail	Water Heating	Water Heater - Thermostat Setback	WHUnits	New	58.77	2	\$5.00	15%	75%	\$0.02	0.59	0.91	Illinois TRM
Small Retail	Water Heating	Water Heater - Solar System	PipeFeet	New	337.98	20	\$215.28	1%	30%	\$0.03	16.17	21.66	AEG-BEST
Small Retail	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.39	15	\$0.35	11%	23%	\$0.07	137.22	147.74	7th Power Plan
Small Retail	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.54	15	\$0.58	11%	23%	\$0.08	188.72	204.30	7th Power Plan
Small Retail	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	New	170.67	15	\$54.41	1%	3%	\$0.02	2.27	2.61	7th Power Plan
Small Retail	Interior Lighting	Interior Lighting - Timeclocks and Timers	occ sens	New	0.00	8	\$111.67	7%	15%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Small Retail	Interior Lighting	Interior Lighting - Skylights	1000 sqft	New	0.00	15	\$1,006.35	18%	25%	\$0.00	0.00	0.00	AEG Research
Small Retail	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	1000 sqft	New	250.53	16	\$1,807.69	5%	15%	\$0.49	23.88	27.77	7th Power Plan
Small Retail	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	New	2,597.69	11	\$30.80	15%	50%	\$0.00	74.36	84.00	Illinois TRM
Small Retail	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	ELtg Watts	New	1.77	8	\$0.63	15%	25%	\$0.03	22.49	29.92	7th Power Plan
Small Retail	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	New	61.77	8	\$55.10	15%	25%	\$0.08	11.83	15.68	Pacific Gas and Electric Research
Small Retail	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	New	75.16	7	\$3,400.00	15%	30%	\$4.57	18.91	25.89	AEG Research
Small Retail	Refrigeration	Refrigeration - Anti-Sweat Heater	Fridge Feet	New	7.41	8	\$48.18	4%	25%	\$0.99	0.04	0.04	7th Power Plan
Small Retail	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	New	15.93	4	\$10.44	4%	25%	\$0.17	0.13	0.09	Michigan Energy Measures Database
Small Retail	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	New	105.12	16	\$165.20	4%	25%	\$0.16	0.99	0.76	7th Power Plan

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Small Retail	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	New	12.62	15	\$335.85	0%	0%	\$2.78	0.00	0.00	7th Power Plan
Small Retail	Refrigeration	Refrigeration - Strip Curtain	Walkin Door	New	12.40	2	\$10.41	4%	25%	\$0.39	0.01	0.01	7th Power Plan
Small Retail	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	New	0.20	15	\$45.43	2%	13%	\$23.24	0.72	0.60	Annual Energy Outlook, 2015
Small Retail	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	New	4.24	15	\$313.82	2%	13%	\$7.74	1.25	1.05	Annual Energy Outlook, 2015
Small Retail	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	New	70.05	10	\$506.05	4%	25%	\$0.95	0.49	0.35	Vermont TRM
Small Retail	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	New	5.30	6	\$45.41	0%	0%	\$1.60	0.00	0.00	7th Power Plan
Small Retail	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	New	0.43	8	\$3.72	0%	0%	\$1.33	0.00	0.00	7th Power Plan
Small Retail	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	New	102.76	5	\$45.85	0%	0%	\$0.10	0.00	0.00	Illinois TRM
Small Retail	Refrigeration	Grocery - ECMs for Display Cases	Fridge Case	New	22.08	16	\$165.20	4%	25%	\$0.76	0.07	0.06	7th Power Plan
Small Retail	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	New	1,370.88	5	\$187.94	25%	75%	\$0.03	0.62	0.53	Illinois TRM
Small Retail	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	New	1,612.45	18	\$8,526.67	25%	50%	\$0.37	24.88	25.47	7th Power Plan
Small Retail	Office Equipment	Office Equipment - Smart Power Strips	Smart Strip	New	10.91	4	\$41.63	10%	50%	\$0.88	2.88	2.19	7th Power Plan
Small Retail	Cooling	Lodging - Guest Room Controls	LodgUnit	New	160.20	15	\$260.00	0%	0%	\$10.00	0.00	0.00	AEG-BEST
Small Retail	Heating	Lodging - Guest Room Controls	LodgUnit	New	-208.20	15	\$260.00	0%	0%	\$10.00	0.00	0.00	AEG-BEST
Small Retail	Office Equipment	Data Center - Best Practice Measures	sqft	New	0.03	5	\$0.00	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Retail	Cooling	Data Center - Commercially Available Measures	sqft	New	0.01	8	\$0.01	0%	0%	\$0.03	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Retail	Ventilation	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.01	0%	0%	\$0.03	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Retail	Interior Lighting	Data Center - Commercially Available Measures	sqft	New	0.03	8	\$0.01	0%	0%	\$0.03	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Retail	Office Equipment	Data Center - Commercially Available Measures	sqft	New	0.01	8	\$0.01	0%	0%	\$0.03	0.00	0.00	com-datacenters-7p_v5p.xlsx

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Small Retail	Cooling	Data Center - Cutting Edge Measures	sqft	New	0.04	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Retail	Office Equipment	Data Center - Cutting Edge Measures	sqft	New	0.00	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Retail	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	New	631.12	18	\$4,092.80	0%	0%	\$0.45	0.00	0.00	7th Power Plan
Small Retail	Miscellaneous	Pool Pump - Timer	perBldg	New	0.00	10	\$85.22	15%	75%	\$0.00	0.00	0.00	Ontario Power TRM
Small Retail	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	New	1,865.22	6	\$35.93	1%	3%	\$0.00	0.00	2.10	7th Power Plan
Small Retail	Cooling	Advanced New Construction Designs	sqft	New	1.01	25	\$4.11	10%	25%	\$0.08	205.70	192.42	AEG Research
Small Retail	Heating	Advanced New Construction Designs	sqft	New	1.67	25	\$4.11	10%	25%	\$0.08	111.14	103.76	AEG Research
Small Retail	Ventilation	Advanced New Construction Designs	sqft	New	0.23	25	\$4.11	10%	25%	\$0.08	62.69	63.81	AEG Research
Small Retail	Water Heating	Advanced New Construction Designs	sqft	New	0.15	25	\$4.11	10%	25%	\$0.08	18.65	21.58	AEG Research
Small Retail	Interior Lighting	Advanced New Construction Designs	sqft	New	0.78	25	\$4.11	10%	25%	\$0.08	183.30	196.98	AEG Research
Small Retail	Exterior Lighting	Advanced New Construction Designs	sqft	New	0.22	25	\$4.11	10%	25%	\$0.08	52.06	57.22	AEG Research
Small Retail	Cooling	Strategic Energy Management	sqft	New	0.15	3	\$0.27	0%	3%	\$0.12	0.72	0.66	AEG Research
Small Retail	Heating	Strategic Energy Management	sqft	New	0.24	3	\$0.27	0%	3%	\$0.12	0.38	0.35	AEG Research
Small Retail	Ventilation	Strategic Energy Management	sqft	New	0.03	3	\$0.27	0%	3%	\$0.12	0.23	0.24	AEG Research
Small Retail	Water Heating	Strategic Energy Management	sqft	New	0.02	3	\$0.27	0%	3%	\$0.12	0.07	0.11	AEG Research
Small Retail	Interior Lighting	Strategic Energy Management	sqft	New	0.12	3	\$0.27	0%	3%	\$0.12	0.67	0.88	AEG Research
Small Retail	Exterior Lighting	Strategic Energy Management	sqft	New	0.03	3	\$0.27	0%	3%	\$0.12	0.19	0.28	AEG Research
Small Retail	Refrigeration	Strategic Energy Management	sqft	New	0.00	3	\$0.27	0%	3%	\$0.12	0.02	0.01	AEG Research
Small Retail	Office Equipment	Strategic Energy Management	sqft	New	0.01	3	\$0.27	0%	3%	\$0.12	0.10	0.08	AEG Research
Small Retail	Cooling	Commissioning	sqft	New	0.20	3	\$0.66	10%	65%	\$0.23	18.26	16.63	AEG Research

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Small Retail	Heating	Commissioning	sqft	New	0.33	3	\$0.66	10%	65%	\$0.23	9.75	8.77	AEG Research
Small Retail	Ventilation	Commissioning	sqft	New	0.05	3	\$0.66	10%	65%	\$0.23	5.77	5.97	AEG Research
Small Retail	Water Heating	Commissioning	sqft	New	0.01	3	\$0.66	10%	65%	\$0.23	0.58	0.89	AEG Research
Small Retail	Interior Lighting	Commissioning	sqft	New	0.14	3	\$0.66	10%	65%	\$0.23	14.16	18.57	AEG Research
Small Retail	Exterior Lighting	Commissioning	sqft	New	0.04	3	\$0.66	10%	65%	\$0.23	4.04	6.02	AEG Research
Small Retail	Refrigeration	Commissioning	sqft	New	0.01	3	\$0.66	10%	65%	\$0.23	0.99	0.39	AEG Research
Small Retail	Cooling	Retrocommissioning	sqft	New	0.20	3	\$0.42	0%	0%	\$0.14	0.00	0.00	AEG Research
Small Retail	Heating	Retrocommissioning	sqft	New	0.33	3	\$0.42	0%	0%	\$0.14	0.00	0.00	AEG Research
Small Retail	Ventilation	Retrocommissioning	sqft	New	0.05	3	\$0.42	0%	0%	\$0.14	0.00	0.00	AEG Research
Small Retail	Water Heating	Retrocommissioning	sqft	New	0.01	3	\$0.42	0%	0%	\$0.14	0.00	0.00	AEG Research
Small Retail	Interior Lighting	Retrocommissioning	sqft	New	0.14	3	\$0.42	0%	0%	\$0.14	0.00	0.00	AEG Research
Small Retail	Exterior Lighting	Retrocommissioning	sqft	New	0.04	3	\$0.42	0%	0%	\$0.14	0.00	0.00	AEG Research
Small Retail	Refrigeration	Retrocommissioning	sqft	New	0.01	3	\$0.42	0%	0%	\$0.14	0.00	0.00	AEG Research
Small Retail	Interior Lighting	Fruit Storage - Lighting Controls	sqft	New	0.10	10	\$0.09	0%	0%	\$0.08	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Retail	Refrigeration	Fruit Storage Refrigeration Retrofit	sqft	New	0.02	10	\$1.09	0%	0%	\$7.13	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Retail	Refrigeration	Fruit Storage Refrigeration Tuneup	sqft	New	0.01	3	\$0.23	0%	0%	\$14.62	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Retail	Refrigeration	Fruit Storage Retrofit - CO2 Scrub	sqft	New	0.01	10	\$3.13	0%	0%	\$42.29	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Retail	Refrigeration	Fruit Storage Retrofit - Membrane	sqft	New	0.00	10	\$0.68	0%	0%	\$45.89	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Restaurant	Cooling	Insulation - Ceiling	sqft roof	Existing	0.03	45	\$1.28	15%	35%	\$0.15	1.89	1.74	Building Energy Simulation Tool
Restaurant	Heating	Insulation - Ceiling	sqft roof	Existing	0.43	45	\$1.28	15%	35%	\$0.15	4.97	4.59	Building Energy Simulation Tool
Restaurant	Ventilation	Insulation - Ceiling	sqft roof	Existing	0.17	45	\$1.28	15%	35%	\$0.15	13.67	13.75	Building Energy Simulation Tool
Restaurant	Cooling	Insulation - Ducting	sqft duct	Existing	0.02	20	\$0.84	15%	35%	\$0.00	0.39	0.38	Building Energy Simulation Tool

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Restaurant	Heating	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.84	15%	35%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Restaurant	Ventilation	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.84	15%	35%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Restaurant	Cooling	Building Shell - Cool Roofs	sqft roof	Existing	0.16	20	\$0.78	45%	50%	\$10.00	2.72	2.71	Building Energy Simulation Tool
Restaurant	Heating	Building Shell - Cool Roofs	sqft roof	Existing	-0.23	20	\$0.78	45%	50%	\$10.00	-0.65	-0.63	Building Energy Simulation Tool
Restaurant	Ventilation	Building Shell - Cool Roofs	sqft roof	Existing	-0.10	20	\$0.78	45%	50%	\$10.00	-1.86	-1.94	Building Energy Simulation Tool
Restaurant	Cooling	Insulation - Wall Cavity	sqft wall	Existing	-0.31	45	\$0.78	15%	35%	\$0.07	-13.51	-12.43	Building Energy Simulation Tool
Restaurant	Heating	Insulation - Wall Cavity	sqft wall	Existing	0.80	45	\$0.78	15%	35%	\$0.07	5.52	5.04	Building Energy Simulation Tool
Restaurant	Ventilation	Insulation - Wall Cavity	sqft wall	Existing	0.32	45	\$0.78	15%	35%	\$0.07	15.62	15.33	Building Energy Simulation Tool
Restaurant	Cooling	HVAC - Duct Repair and Sealing	tonCool	Existing	-2.24	18	\$0.57	15%	50%	\$10.00	-1.54	-1.53	Building Energy Simulation Tool
Restaurant	Heating	HVAC - Duct Repair and Sealing	tonCool	Existing	-7.74	18	\$0.57	15%	50%	\$10.00	-0.86	-0.83	Building Energy Simulation Tool
Restaurant	Ventilation	HVAC - Duct Repair and Sealing	tonCool	Existing	-3.26	18	\$0.57	15%	50%	\$10.00	-2.52	-2.61	Building Energy Simulation Tool
Restaurant	Cooling	Windows - High Efficiency Glazing	sqft window	Existing	4.98	30	\$35.93	48%	48%	\$0.15	0.00	0.00	7th Power Plan
Restaurant	Heating	Windows - High Efficiency Glazing	sqft window	Existing	12.51	30	\$35.93	48%	48%	\$0.15	0.00	0.00	7th Power Plan
Restaurant	Ventilation	Windows - High Efficiency Glazing	sqft window	Existing	2.87	30	\$35.93	48%	48%	\$0.15	0.00	0.00	7th Power Plan
Restaurant	Cooling	Chiller - Chilled Water Reset	ChillCtrl	Existing	0.00	10	\$884.85	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Restaurant	Cooling	Chiller - Chilled Water Variable-Flow System	HP cool	Existing	0.00	15	\$332.55	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Restaurant	Cooling	Chiller - Variable Speed Fans	HP fan	Existing	0.00	15	\$208.36	15%	75%	\$0.00	0.00	0.00	New Jersey TRM
Restaurant	Cooling	Water-Cooled Chiller - Condenser Water Reset	ChillCtrl	Existing	0.00	10	\$884.85	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Restaurant	Cooling	HVAC - Economizer	HP cool	Existing	88.09	10	\$168.42	18%	75%	\$0.25	81.34	72.71	AEG-BEST

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Restaurant	Heating	Space Heating - Heat Recovery Ventilator	CFM	Existing	0.62	14	\$5.08	3%	75%	\$0.89	19.07	17.34	7th Power Plan
Restaurant	Ventilation	Ventilation - ECM on VAV Boxes	sqft	Existing	0.43	18	\$0.25	15%	20%	\$0.05	8.68	8.60	7th Power Plan
Restaurant	Ventilation	Ventilation - Variable Speed Control	sqft	Existing	0.15	15	\$181.39	13%	50%	\$112.90	22.49	23.57	AEG-BEST
Restaurant	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.02	15	\$0.25	15%	25%	\$1.00	0.97	1.00	7th Power Plan
Restaurant	Cooling	Destratification Fans (HVLS)	Strat Fan	Existing	5,245.69	15	\$7,270.90	15%	15%	\$0.04	0.00	0.00	AEG Research
Restaurant	Heating	Destratification Fans (HVLS)	Strat Fan	Existing	12,284.18	15	\$7,270.90	15%	15%	\$0.04	0.00	0.00	AEG Research
Restaurant	Cooling	RTU - Maintenance	tonCool	Existing	40.09	3	\$35.00	15%	45%	\$0.26	22.05	21.39	AEG Research
Restaurant	Cooling	RTU - Advanced Controls	sqft	Existing	0.33	15	\$0.07	15%	45%	\$0.02	30.55	27.88	7th Power Plan
Restaurant	Cooling	RTU - Evaporative Precooler	tonCool	Existing	82.33	15	\$681.62	15%	75%	\$0.82	82.95	78.84	AEG Research
Restaurant	Cooling	Ductless Mini Split Heat Pump	tonCool	Existing	181.54	15	\$3,359.26	15%	75%	\$0.76	6.90	6.93	7th Power Plan
Restaurant	Heating	Ductless Mini Split Heat Pump	tonCool	Existing	247.39	15	\$3,359.26	15%	75%	\$0.76	2.00	1.86	7th Power Plan
Restaurant	Cooling	Thermostat - WiFi/Interactive	sqft	Existing	0.65	5	\$0.66	30%	40%	\$0.08	23.23	21.83	7th Power Plan
Restaurant	Heating	Thermostat - WiFi/Interactive	sqft	Existing	0.81	5	\$0.66	30%	40%	\$0.08	4.61	4.28	7th Power Plan
Restaurant	Ventilation	Thermostat - WiFi/Interactive	sqft	Existing	0.32	5	\$0.66	30%	40%	\$0.08	12.67	12.85	7th Power Plan
Restaurant	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	Existing	83.20	10	\$8.35	25%	65%	\$0.01	8.94	13.94	Illinois TRM
Restaurant	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	Existing	86.22	10	\$11.64	25%	65%	-\$0.11	4.61	7.25	7th Power Plan
Restaurant	Water Heating	Water Heater - High Efficiency Circulation Pump	WHUnits	Existing	64.32	15	\$36.75	0%	0%	\$0.03	0.00	0.00	Hawaii TRM
Restaurant	Water Heating	Water Heater - Pipe Insulation	PipeFeet	Existing	374.84	15	\$14.88	16%	75%	\$0.00	25.22	36.54	AEG-BEST
Restaurant	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	Existing	56.97	4	\$144.04	25%	65%	-\$0.34	5.98	9.39	7th Power Plan
Restaurant	Water Heating	Water Heater - Thermostat Setback	WHUnits	Existing	64.45	2	\$5.00	15%	75%	\$0.02	12.13	18.83	Illinois TRM
Restaurant	Water Heating	Water Heater - Solar System	PipeFeet	Existing	1,289.30	20	\$215.28	1%	30%	\$0.01	42.07	62.25	AEG-BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Restaurant	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.62	15	\$0.35	3%	23%	\$0.04	64.52	69.41	7th Power Plan
Restaurant	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.86	15	\$0.58	3%	23%	\$0.05	87.41	95.72	7th Power Plan
Restaurant	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	Existing	114.52	15	\$54.41	1%	3%	\$0.04	2.05	2.52	7th Power Plan
Restaurant	Interior Lighting	Interior Lighting - Timeclocks and Timers	occ sens	Existing	0.00	8	\$111.67	7%	15%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Restaurant	Interior Lighting	Interior Lighting - Skylights	1000 sqft	Existing	0.00	15	\$1,006.35	15%	25%	\$0.00	0.00	0.00	AEG Research
Restaurant	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	1000 sqft	Existing	244.79	16	\$1,807.69	5%	15%	\$0.52	9.54	12.11	7th Power Plan
Restaurant	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	Existing	2,518.12	11	\$30.80	15%	50%	\$0.00	35.97	42.32	Illinois TRM
Restaurant	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	ELtg Watts	Existing	1.35	8	\$0.63	15%	25%	\$0.05	38.59	49.44	7th Power Plan
Restaurant	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	Existing	74.08	8	\$55.10	15%	25%	\$0.08	19.54	25.74	Pacific Gas and Electric Research
Restaurant	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	Existing	88.88	7	\$3,400.00	15%	30%	\$4.26	34.68	47.15	AEG Research
Restaurant	Refrigeration	Refrigeration - Anti-Sweat Heater	Fridge Feet	Existing	73.99	8	\$48.18	11%	75%	\$0.09	4.46	5.83	7th Power Plan
Restaurant	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	Existing	364.98	4	\$10.44	5%	35%	\$0.01	63.64	74.22	Michigan Energy Measures Database
Restaurant	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	Existing	2,493.33	16	\$165.20	11%	75%	\$0.01	293.49	323.77	7th Power Plan
Restaurant	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	Existing	103.29	15	\$335.85	0%	0%	\$0.30	0.00	0.00	7th Power Plan
Restaurant	Refrigeration	Refrigeration - Strip Curtain	WalkIn Door	Existing	115.21	2	\$10.41	11%	75%	\$0.04	111.69	128.20	7th Power Plan
Restaurant	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBtuh	Existing	1.55	15	\$45.43	6%	38%	\$2.52	129.84	144.99	Annual Energy Outlook, 2015
Restaurant	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	Existing	33.83	15	\$313.82	6%	38%	\$0.84	239.64	258.27	Annual Energy Outlook, 2015
Restaurant	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	Existing	1,558.61	10	\$506.05	11%	75%	\$0.04	181.57	208.38	Vermont TRM
Restaurant	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	Existing	44.73	6	\$45.41	0%	0%	\$0.16	0.00	0.00	7th Power Plan

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Restaurant	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	Existing	3.70	8	\$3.72	0%	0%	\$0.14	0.00	0.00	7th Power Plan
Restaurant	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	Existing	927.99	5	\$45.85	0%	0%	\$0.01	0.00	0.00	Illinois TRM
Restaurant	Refrigeration	Grocery - ECMs for Display Cases	Fridge Case	Existing	195.18	16	\$165.20	11%	75%	\$0.08	4.14	4.24	7th Power Plan
Restaurant	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	Existing	1,244.44	5	\$187.94	25%	75%	\$0.03	120.38	114.73	Illinois TRM
Restaurant	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	Existing	4,705.54	18	\$8,526.67	25%	50%	\$0.16	18.88	18.79	7th Power Plan
Restaurant	Office Equipment	Office Equipment - Smart Power Strips	Smart Strip	Existing	31.21	4	\$41.63	10%	50%	\$0.31	12.76	9.41	7th Power Plan
Restaurant	Cooling	Lodging - Guest Room Controls	LodgUnit	Existing	276.12	15	\$260.00	0%	0%	\$0.49	0.00	0.00	AEG-BEST
Restaurant	Heating	Lodging - Guest Room Controls	LodgUnit	Existing	-224.27	15	\$260.00	0%	0%	\$0.49	0.00	0.00	AEG-BEST
Restaurant	Office Equipment	Data Center - Best Practice Measures	sqft	Existing	0.08	5	\$0.01	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Restaurant	Cooling	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.02	0%	0%	\$0.03	0.00	0.00	com-datacenters-7p_v5p.xlsx
Restaurant	Ventilation	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.02	0%	0%	\$0.03	0.00	0.00	com-datacenters-7p_v5p.xlsx
Restaurant	Interior Lighting	Data Center - Commercially Available Measures	sqft	Existing	0.05	8	\$0.02	0%	0%	\$0.03	0.00	0.00	com-datacenters-7p_v5p.xlsx
Restaurant	Office Equipment	Data Center - Commercially Available Measures	sqft	Existing	0.02	8	\$0.02	0%	0%	\$0.03	0.00	0.00	com-datacenters-7p_v5p.xlsx
Restaurant	Cooling	Data Center - Cutting Edge Measures	sqft	Existing	0.06	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Restaurant	Office Equipment	Data Center - Cutting Edge Measures	sqft	Existing	0.01	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Restaurant	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	Existing	666.33	18	\$4,092.80	0%	0%	\$0.53	0.00	0.00	7th Power Plan
Restaurant	Miscellaneous	Pool Pump - Timer	perBldg	Existing	0.00	10	\$85.22	15%	75%	\$0.00	0.00	0.00	Ontario Power TRM
Restaurant	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	Existing	2,329.79	6	\$35.93	1%	3%	\$0.00	0.00	11.67	7th Power Plan
Restaurant	Cooling	Advanced New Construction Designs	sqft	Existing	1.34	25	\$4.11	0%	0%	\$0.04	0.00	0.00	AEG Research

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Restaurant	Heating	Advanced New Construction Designs	sqft	Existing	1.62	25	\$4.11	0%	0%	\$0.04	0.00	0.00	AEG Research
Restaurant	Ventilation	Advanced New Construction Designs	sqft	Existing	0.65	25	\$4.11	0%	0%	\$0.04	0.00	0.00	AEG Research
Restaurant	Water Heating	Advanced New Construction Designs	sqft	Existing	1.54	25	\$4.11	0%	0%	\$0.04	0.00	0.00	AEG Research
Restaurant	Interior Lighting	Advanced New Construction Designs	sqft	Existing	1.43	25	\$4.11	0%	0%	\$0.04	0.00	0.00	AEG Research
Restaurant	Exterior Lighting	Advanced New Construction Designs	sqft	Existing	0.61	25	\$4.11	0%	0%	\$0.04	0.00	0.00	AEG Research
Restaurant	Cooling	Strategic Energy Management	sqft	Existing	0.18	3	\$0.71	0%	0%	\$0.12	0.00	0.00	AEG Research
Restaurant	Heating	Strategic Energy Management	sqft	Existing	0.23	3	\$0.71	0%	0%	\$0.12	0.00	0.00	AEG Research
Restaurant	Ventilation	Strategic Energy Management	sqft	Existing	0.10	3	\$0.71	0%	0%	\$0.12	0.00	0.00	AEG Research
Restaurant	Water Heating	Strategic Energy Management	sqft	Existing	0.23	3	\$0.71	0%	0%	\$0.12	0.00	0.00	AEG Research
Restaurant	Interior Lighting	Strategic Energy Management	sqft	Existing	0.22	3	\$0.71	0%	0%	\$0.12	0.00	0.00	AEG Research
Restaurant	Exterior Lighting	Strategic Energy Management	sqft	Existing	0.09	3	\$0.71	0%	0%	\$0.12	0.00	0.00	AEG Research
Restaurant	Refrigeration	Strategic Energy Management	sqft	Existing	0.35	3	\$0.71	0%	0%	\$0.12	0.00	0.00	AEG Research
Restaurant	Office Equipment	Strategic Energy Management	sqft	Existing	0.04	3	\$0.71	0%	0%	\$0.12	0.00	0.00	AEG Research
Restaurant	Cooling	Commissioning	sqft	Existing	0.25	3	\$1.08	0%	0%	\$0.14	0.00	0.00	AEG Research
Restaurant	Heating	Commissioning	sqft	Existing	0.31	3	\$1.08	0%	0%	\$0.14	0.00	0.00	AEG Research
Restaurant	Ventilation	Commissioning	sqft	Existing	0.13	3	\$1.08	0%	0%	\$0.14	0.00	0.00	AEG Research
Restaurant	Water Heating	Commissioning	sqft	Existing	0.11	3	\$1.08	0%	0%	\$0.14	0.00	0.00	AEG Research
Restaurant	Interior Lighting	Commissioning	sqft	Existing	0.25	3	\$1.08	0%	0%	\$0.14	0.00	0.00	AEG Research
Restaurant	Exterior Lighting	Commissioning	sqft	Existing	0.10	3	\$1.08	0%	0%	\$0.14	0.00	0.00	AEG Research
Restaurant	Refrigeration	Commissioning	sqft	Existing	0.81	3	\$1.08	0%	0%	\$0.14	0.00	0.00	AEG Research
Restaurant	Cooling	Retrocommissioning	sqft	Existing	0.26	3	\$0.68	24%	79%	\$0.09	53.76	52.82	AEG Research
Restaurant	Heating	Retrocommissioning	sqft	Existing	0.32	3	\$0.68	24%	79%	\$0.09	10.71	10.12	AEG Research

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Restaurant	Ventilation	Retrocommissioning	sqft	Existing	0.14	3	\$0.68	24%	79%	\$0.09	31.45	32.36	AEG Research
Restaurant	Water Heating	Retrocommissioning	sqft	Existing	0.11	3	\$0.68	24%	79%	\$0.09	7.11	11.23	AEG Research
Restaurant	Interior Lighting	Retrocommissioning	sqft	Existing	0.25	3	\$0.68	24%	79%	\$0.09	54.29	70.26	AEG Research
Restaurant	Exterior Lighting	Retrocommissioning	sqft	Existing	0.11	3	\$0.68	24%	79%	\$0.09	22.44	29.99	AEG Research
Restaurant	Refrigeration	Retrocommissioning	sqft	Existing	0.85	3	\$0.68	24%	79%	\$0.09	199.52	204.00	AEG Research
Restaurant	Interior Lighting	Fruit Storage - Lighting Controls	sqft	Existing	0.18	10	\$0.09	0%	0%	\$0.04	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Restaurant	Refrigeration	Fruit Storage Refrigeration Retrofit	sqft	Existing	3.03	10	\$1.09	0%	0%	\$0.04	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Restaurant	Refrigeration	Fruit Storage Refrigeration Tuneup	sqft	Existing	0.74	3	\$0.23	0%	0%	\$0.09	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Restaurant	Refrigeration	Fruit Storage Retrofit - CO2 Scrub	sqft	Existing	1.40	10	\$3.13	0%	0%	\$0.25	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Restaurant	Refrigeration	Fruit Storage Retrofit - Membrane	sqft	Existing	0.28	10	\$0.68	0%	0%	\$0.27	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Restaurant	Cooling	Insulation - Ceiling	sqft roof	New	0.00	45	\$1.28	15%	50%	\$0.47	0.00	0.00	Building Energy Simulation Tool
Restaurant	Heating	Insulation - Ceiling	sqft roof	New	0.15	45	\$1.28	15%	50%	\$0.47	1.56	1.46	Building Energy Simulation Tool
Restaurant	Ventilation	Insulation - Ceiling	sqft roof	New	0.06	45	\$1.28	15%	50%	\$0.47	4.14	4.05	Building Energy Simulation Tool
Restaurant	Cooling	Insulation - Ducting	sqft duct	New	0.18	20	\$0.84	15%	50%	\$0.00	2.97	2.80	Building Energy Simulation Tool
Restaurant	Heating	Insulation - Ducting	sqft duct	New	0.00	20	\$0.84	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Restaurant	Ventilation	Insulation - Ducting	sqft duct	New	0.00	20	\$0.84	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Restaurant	Cooling	Building Shell - Cool Roofs	sqft roof	New	0.03	20	\$0.78	45%	50%	\$10.00	0.32	0.31	Building Energy Simulation Tool
Restaurant	Heating	Building Shell - Cool Roofs	sqft roof	New	-0.05	20	\$0.78	45%	50%	\$10.00	-0.08	-0.07	Building Energy Simulation Tool
Restaurant	Ventilation	Building Shell - Cool Roofs	sqft roof	New	-0.02	20	\$0.78	45%	50%	\$10.00	-0.21	-0.20	Building Energy Simulation Tool
Restaurant	Cooling	Insulation - Wall Cavity	sqft wall	New	-0.02	45	\$0.78	15%	50%	\$0.83	-0.87	-0.81	Building Energy Simulation Tool

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Restaurant	Heating	Insulation - Wall Cavity	sqft wall	New	0.07	45	\$0.78	15%	50%	\$0.83	0.43	0.40	Building Energy Simulation Tool
Restaurant	Ventilation	Insulation - Wall Cavity	sqft wall	New	0.03	45	\$0.78	15%	50%	\$0.83	1.16	1.12	Building Energy Simulation Tool
Restaurant	Cooling	HVAC - Duct Repair and Sealing	tonCool	New	0.26	18	\$0.57	15%	35%	\$10.00	0.05	0.05	Building Energy Simulation Tool
Restaurant	Heating	HVAC - Duct Repair and Sealing	tonCool	New	-4.41	18	\$0.57	15%	35%	\$10.00	-0.14	-0.13	Building Energy Simulation Tool
Restaurant	Ventilation	HVAC - Duct Repair and Sealing	tonCool	New	-1.68	18	\$0.57	15%	35%	\$10.00	-0.38	-0.37	Building Energy Simulation Tool
Restaurant	Cooling	Windows - High Efficiency Glazing	sqft window	New	4.65	30	\$35.93	66%	66%	\$0.16	0.00	0.00	7th Power Plan
Restaurant	Heating	Windows - High Efficiency Glazing	sqft window	New	11.62	30	\$35.93	66%	66%	\$0.16	0.00	0.00	7th Power Plan
Restaurant	Ventilation	Windows - High Efficiency Glazing	sqft window	New	2.48	30	\$35.93	66%	66%	\$0.16	0.00	0.00	7th Power Plan
Restaurant	Cooling	Chiller - Chilled Water Reset	ChillCtrl	New	0.00	10	\$884.85	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Restaurant	Cooling	Chiller - Chilled Water Variable-Flow System	HP cool	New	0.00	15	\$332.55	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Restaurant	Cooling	Chiller - Variable Speed Fans	HP fan	New	0.00	15	\$208.36	15%	75%	\$0.00	0.00	0.00	New Jersey TRM
Restaurant	Cooling	Water-Cooled Chiller - Condenser Water Reset	ChillCtrl	New	0.00	10	\$884.85	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Restaurant	Cooling	HVAC - Economizer	HP cool	New	82.46	10	\$168.42	18%	75%	\$0.26	19.52	17.54	AEG-BEST
Restaurant	Heating	Space Heating - Heat Recovery Ventilator	CFM	New	0.57	14	\$5.08	6%	75%	\$0.95	5.37	4.79	7th Power Plan
Restaurant	Ventilation	Ventilation - ECM on VAV Boxes	sqft	New	0.31	18	\$0.25	15%	20%	\$0.07	3.16	3.05	7th Power Plan
Restaurant	Ventilation	Ventilation - Variable Speed Control	sqft	New	0.11	15	\$181.39	19%	50%	\$154.02	4.74	4.56	AEG-BEST
Restaurant	Ventilation	Ventilation - Demand Controlled	sqft	New	0.02	15	\$0.25	15%	25%	\$1.37	0.24	0.23	7th Power Plan
Restaurant	Cooling	Destratification Fans (HVLS)	Strat Fan	New	4,971.04	15	\$7,270.90	15%	15%	\$0.05	0.00	0.00	AEG Research
Restaurant	Heating	Destratification Fans (HVLS)	Strat Fan	New	11,482.99	15	\$7,270.90	15%	15%	\$0.05	0.00	0.00	AEG Research
Restaurant	Cooling	RTU - Maintenance	tonCool	New	38.85	3	\$35.00	15%	45%	\$0.28	2.01	1.82	AEG Research
Restaurant	Cooling	RTU - Advanced Controls	sqft	New	0.31	15	\$0.07	15%	45%	\$0.02	13.90	12.70	7th Power Plan

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Restaurant	Cooling	RTU - Evaporative Precooler	tonCool	New	79.19	15	\$681.62	15%	75%	\$0.86	45.92	42.91	AEG Research
Restaurant	Cooling	Ductless Mini Split Heat Pump	tonCool	New	155.55	15	\$3,359.26	15%	75%	\$0.85	2.41	2.23	7th Power Plan
Restaurant	Heating	Ductless Mini Split Heat Pump	tonCool	New	237.33	15	\$3,359.26	15%	75%	\$0.85	0.76	0.68	7th Power Plan
Restaurant	Cooling	Thermostat - WiFi/Interactive	sqft	New	0.62	5	\$0.66	30%	40%	\$0.08	1.43	1.27	7th Power Plan
Restaurant	Heating	Thermostat - WiFi/Interactive	sqft	New	0.75	5	\$0.66	30%	40%	\$0.08	0.27	0.24	7th Power Plan
Restaurant	Ventilation	Thermostat - WiFi/Interactive	sqft	New	0.28	5	\$0.66	30%	40%	\$0.08	0.73	0.70	7th Power Plan
Restaurant	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	New	75.21	10	\$8.35	25%	65%	\$0.01	2.13	3.01	Illinois TRM
Restaurant	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	New	78.38	10	\$11.64	25%	65%	-\$0.11	1.11	1.57	7th Power Plan
Restaurant	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	New	58.66	15	\$36.75	0%	0%	\$0.03	0.00	0.00	Hawaii TRM
Restaurant	Water Heating	Water Heater - Pipe Insulation	PipeFeet	New	328.83	15	\$14.88	1%	75%	\$0.00	9.77	13.15	AEG-BEST
Restaurant	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	New	51.86	4	\$144.04	25%	65%	-\$0.34	0.59	0.90	7th Power Plan
Restaurant	Water Heating	Water Heater - Thermostat Setback	WHunits	New	58.00	2	\$5.00	15%	75%	\$0.02	0.49	0.77	Illinois TRM
Restaurant	Water Heating	Water Heater - Solar System	PipeFeet	New	1,140.94	20	\$215.28	1%	30%	\$0.01	13.64	18.28	AEG-BEST
Restaurant	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.63	15	\$0.35	11%	23%	\$0.04	31.23	33.52	7th Power Plan
Restaurant	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.87	15	\$0.58	11%	23%	\$0.05	43.03	46.42	7th Power Plan
Restaurant	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	New	112.86	15	\$54.41	1%	3%	\$0.03	0.58	0.69	7th Power Plan
Restaurant	Interior Lighting	Interior Lighting - Timeclocks and Timers	occ sens	New	0.00	8	\$111.67	7%	15%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Restaurant	Interior Lighting	Interior Lighting - Skylights	1000 sqft	New	0.00	15	\$1,006.35	18%	25%	\$0.00	0.00	0.00	AEG Research
Restaurant	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	1000 sqft	New	227.95	16	\$1,807.69	5%	15%	\$0.52	3.14	3.63	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Restaurant	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	New	2,340.11	11	\$30.80	15%	50%	\$0.00	9.70	10.94	Illinois TRM
Restaurant	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	ELtg Watts	New	1.23	8	\$0.63	15%	25%	\$0.05	7.99	10.50	7th Power Plan
Restaurant	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	New	67.90	8	\$55.10	15%	25%	\$0.08	4.10	5.49	Pacific Gas and Electric Research
Restaurant	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	New	83.73	7	\$3,400.00	15%	30%	\$4.14	6.72	9.07	AEG Research
Restaurant	Refrigeration	Refrigeration - Anti-Sweat Heater	Fridge Feet	New	66.38	8	\$48.18	11%	75%	\$0.11	0.86	0.92	7th Power Plan
Restaurant	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	New	342.01	4	\$10.44	5%	35%	\$0.01	5.80	6.16	Michigan Energy Measures Database
Restaurant	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	New	2,255.73	16	\$165.20	11%	75%	\$0.01	92.58	92.49	7th Power Plan
Restaurant	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	New	103.85	15	\$335.85	0%	0%	\$0.32	0.00	0.00	7th Power Plan
Restaurant	Refrigeration	Refrigeration - Strip Curtain	Walkin Door	New	112.74	2	\$10.41	11%	75%	\$0.04	4.57	4.68	7th Power Plan
Restaurant	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	New	1.63	15	\$45.43	6%	38%	\$2.70	48.18	43.25	Annual Energy Outlook, 2015
Restaurant	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	New	34.73	15	\$313.82	6%	38%	\$0.90	85.08	76.55	Annual Energy Outlook, 2015
Restaurant	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	New	1,463.61	10	\$506.05	11%	75%	\$0.04	47.29	47.37	Vermont TRM
Restaurant	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	New	46.33	6	\$45.41	0%	0%	\$0.17	0.00	0.00	7th Power Plan
Restaurant	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	New	3.75	8	\$3.72	0%	0%	\$0.14	0.00	0.00	7th Power Plan
Restaurant	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	New	920.19	5	\$45.85	0%	0%	\$0.01	0.00	0.00	Illinois TRM
Restaurant	Refrigeration	Grocery - ECMs for Display Cases	Fridge Case	New	194.61	16	\$165.20	11%	75%	\$0.08	1.35	1.22	7th Power Plan
Restaurant	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	New	1,314.31	5	\$187.94	25%	75%	\$0.03	16.47	13.93	Illinois TRM
Restaurant	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	New	3,370.51	18	\$8,526.67	25%	50%	\$0.22	6.74	6.57	7th Power Plan
Restaurant	Office Equipment	Office Equipment - Smart Power Strips	Smart Strip	New	29.38	4	\$41.63	10%	50%	\$0.33	1.11	0.81	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Restaurant	Cooling	Lodging - Guest Room Controls	LodgUnit	New	230.31	15	\$260.00	0%	0%	\$1.02	0.00	0.00	AEG-BEST
Restaurant	Heating	Lodging - Guest Room Controls	LodgUnit	New	-208.54	15	\$260.00	0%	0%	\$1.02	0.00	0.00	AEG-BEST
Restaurant	Office Equipment	Data Center - Best Practice Measures	sqft	New	0.08	5	\$0.01	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Restaurant	Cooling	Data Center - Commercially Available Measures	sqft	New	0.01	8	\$0.03	0%	0%	\$0.03	0.00	0.00	com-datacenters-7p_v5p.xlsx
Restaurant	Ventilation	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.03	0%	0%	\$0.03	0.00	0.00	com-datacenters-7p_v5p.xlsx
Restaurant	Interior Lighting	Data Center - Commercially Available Measures	sqft	New	0.05	8	\$0.03	0%	0%	\$0.03	0.00	0.00	com-datacenters-7p_v5p.xlsx
Restaurant	Office Equipment	Data Center - Commercially Available Measures	sqft	New	0.02	8	\$0.03	0%	0%	\$0.03	0.00	0.00	com-datacenters-7p_v5p.xlsx
Restaurant	Cooling	Data Center - Cutting Edge Measures	sqft	New	0.05	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Restaurant	Office Equipment	Data Center - Cutting Edge Measures	sqft	New	0.01	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Restaurant	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	New	482.56	18	\$4,092.80	0%	0%	\$0.72	0.00	0.00	7th Power Plan
Restaurant	Miscellaneous	Pool Pump - Timer	perBldg	New	0.00	10	\$85.22	15%	75%	\$0.00	0.00	0.00	Ontario Power TRM
Restaurant	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	New	2,329.79	6	\$35.93	1%	3%	\$0.00	0.00	1.00	7th Power Plan
Restaurant	Cooling	Advanced New Construction Designs	sqft	New	1.27	25	\$4.11	10%	25%	\$0.04	39.87	37.22	AEG Research
Restaurant	Heating	Advanced New Construction Designs	sqft	New	1.52	25	\$4.11	10%	25%	\$0.04	7.58	7.04	AEG Research
Restaurant	Ventilation	Advanced New Construction Designs	sqft	New	0.57	25	\$4.11	10%	25%	\$0.04	20.33	19.69	AEG Research
Restaurant	Water Heating	Advanced New Construction Designs	sqft	New	1.41	25	\$4.11	10%	25%	\$0.04	15.75	18.23	AEG Research
Restaurant	Interior Lighting	Advanced New Construction Designs	sqft	New	1.42	25	\$4.11	10%	25%	\$0.04	46.86	49.78	AEG Research
Restaurant	Exterior Lighting	Advanced New Construction Designs	sqft	New	0.57	25	\$4.11	10%	25%	\$0.04	18.61	20.52	AEG Research
Restaurant	Cooling	Strategic Energy Management	sqft	New	0.19	3	\$0.70	0%	0%	\$0.12	0.00	0.00	AEG Research

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Restaurant	Heating	Strategic Energy Management	sqft	New	0.22	3	\$0.70	0%	0%	\$0.12	0.00	0.00	AEG Research
Restaurant	Ventilation	Strategic Energy Management	sqft	New	0.09	3	\$0.70	0%	0%	\$0.12	0.00	0.00	AEG Research
Restaurant	Water Heating	Strategic Energy Management	sqft	New	0.21	3	\$0.70	0%	0%	\$0.12	0.00	0.00	AEG Research
Restaurant	Interior Lighting	Strategic Energy Management	sqft	New	0.22	3	\$0.70	0%	0%	\$0.12	0.00	0.00	AEG Research
Restaurant	Exterior Lighting	Strategic Energy Management	sqft	New	0.09	3	\$0.70	0%	0%	\$0.12	0.00	0.00	AEG Research
Restaurant	Refrigeration	Strategic Energy Management	sqft	New	0.39	3	\$0.70	0%	0%	\$0.12	0.00	0.00	AEG Research
Restaurant	Office Equipment	Strategic Energy Management	sqft	New	0.04	3	\$0.70	0%	0%	\$0.12	0.00	0.00	AEG Research
Restaurant	Cooling	Commissioning	sqft	New	0.26	3	\$1.10	24%	79%	\$0.15	3.54	3.20	AEG Research
Restaurant	Heating	Commissioning	sqft	New	0.31	3	\$1.10	24%	79%	\$0.15	0.69	0.59	AEG Research
Restaurant	Ventilation	Commissioning	sqft	New	0.12	3	\$1.10	24%	79%	\$0.15	1.86	1.79	AEG Research
Restaurant	Water Heating	Commissioning	sqft	New	0.10	3	\$1.10	24%	79%	\$0.15	0.49	0.75	AEG Research
Restaurant	Interior Lighting	Commissioning	sqft	New	0.25	3	\$1.10	24%	79%	\$0.15	3.63	5.16	AEG Research
Restaurant	Exterior Lighting	Commissioning	sqft	New	0.10	3	\$1.10	24%	79%	\$0.15	1.43	2.09	AEG Research
Restaurant	Refrigeration	Commissioning	sqft	New	0.90	3	\$1.10	24%	79%	\$0.15	14.91	12.50	AEG Research
Restaurant	Cooling	Retrocommissioning	sqft	New	0.26	3	\$0.70	0%	0%	\$0.09	0.00	0.00	AEG Research
Restaurant	Heating	Retrocommissioning	sqft	New	0.31	3	\$0.70	0%	0%	\$0.09	0.00	0.00	AEG Research
Restaurant	Ventilation	Retrocommissioning	sqft	New	0.12	3	\$0.70	0%	0%	\$0.09	0.00	0.00	AEG Research
Restaurant	Water Heating	Retrocommissioning	sqft	New	0.10	3	\$0.70	0%	0%	\$0.09	0.00	0.00	AEG Research
Restaurant	Interior Lighting	Retrocommissioning	sqft	New	0.25	3	\$0.70	0%	0%	\$0.09	0.00	0.00	AEG Research
Restaurant	Exterior Lighting	Retrocommissioning	sqft	New	0.10	3	\$0.70	0%	0%	\$0.09	0.00	0.00	AEG Research
Restaurant	Refrigeration	Retrocommissioning	sqft	New	0.90	3	\$0.70	0%	0%	\$0.09	0.00	0.00	AEG Research
Restaurant	Interior Lighting	Fruit Storage - Lighting Controls	sqft	New	0.18	10	\$0.09	0%	0%	\$0.04	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx

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Restaurant	Refrigeration	Fruit Storage Refrigeration Retrofit	sqft	New	2.93	10	\$1.09	0%	0%	\$0.05	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Restaurant	Refrigeration	Fruit Storage Refrigeration Tuneup	sqft	New	0.75	3	\$0.23	0%	0%	\$0.10	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Restaurant	Refrigeration	Fruit Storage Retrofit - CO2 Scrub	sqft	New	1.40	10	\$3.13	0%	0%	\$0.28	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Restaurant	Refrigeration	Fruit Storage Retrofit - Membrane	sqft	New	0.28	10	\$0.68	0%	0%	\$0.30	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Grocery	Cooling	Insulation - Ceiling	sqft roof	Existing	0.39	45	\$1.28	15%	35%	\$0.24	23.26	22.18	Building Energy Simulation Tool
Grocery	Heating	Insulation - Ceiling	sqft roof	Existing	0.00	45	\$1.28	15%	35%	\$0.24	0.01	0.01	Building Energy Simulation Tool
Grocery	Ventilation	Insulation - Ceiling	sqft roof	Existing	0.00	45	\$1.28	15%	35%	\$0.24	0.02	0.02	Building Energy Simulation Tool
Grocery	Cooling	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.84	15%	35%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Grocery	Heating	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.84	15%	35%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Grocery	Ventilation	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.84	15%	35%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Grocery	Cooling	Building Shell - Cool Roofs	sqft roof	Existing	0.55	20	\$0.78	45%	50%	\$0.86	8.46	7.78	Building Energy Simulation Tool
Grocery	Heating	Building Shell - Cool Roofs	sqft roof	Existing	-0.35	20	\$0.78	45%	50%	\$0.86	-1.01	-0.91	Building Energy Simulation Tool
Grocery	Ventilation	Building Shell - Cool Roofs	sqft roof	Existing	-0.10	20	\$0.78	45%	50%	\$0.86	-1.88	-2.02	Building Energy Simulation Tool
Grocery	Cooling	Insulation - Wall Cavity	sqft wall	Existing	0.97	45	\$0.78	15%	35%	\$0.04	33.29	30.86	Building Energy Simulation Tool
Grocery	Heating	Insulation - Wall Cavity	sqft wall	Existing	0.28	45	\$0.78	15%	35%	\$0.04	1.82	1.64	Building Energy Simulation Tool
Grocery	Ventilation	Insulation - Wall Cavity	sqft wall	Existing	0.08	45	\$0.78	15%	35%	\$0.04	3.39	3.63	Building Energy Simulation Tool
Grocery	Cooling	HVAC - Duct Repair and Sealing	tonCool	Existing	2.10	18	\$0.57	15%	25%	\$0.02	0.21	0.20	Building Energy Simulation Tool
Grocery	Heating	HVAC - Duct Repair and Sealing	tonCool	Existing	0.24	18	\$0.57	15%	25%	\$0.02	0.00	0.00	Building Energy Simulation Tool
Grocery	Ventilation	HVAC - Duct Repair and Sealing	tonCool	Existing	0.07	18	\$0.57	15%	25%	\$0.02	0.01	0.01	Building Energy Simulation Tool

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Grocery	Cooling	Windows - High Efficiency Glazing	sqft window	Existing	3.41	30	\$35.93	48%	48%	\$0.20	0.00	0.00	7th Power Plan
Grocery	Heating	Windows - High Efficiency Glazing	sqft window	Existing	9.31	30	\$35.93	48%	48%	\$0.20	0.00	0.00	7th Power Plan
Grocery	Ventilation	Windows - High Efficiency Glazing	sqft window	Existing	1.64	30	\$35.93	48%	48%	\$0.20	0.00	0.00	7th Power Plan
Grocery	Cooling	Chiller - Chilled Water Reset	ChillCtrl	Existing	4,865.77	10	\$884.85	15%	75%	\$0.02	0.18	0.16	AEG-BEST
Grocery	Cooling	Chiller - Chilled Water Variable-Flow System	HP cool	Existing	455.53	15	\$332.55	15%	75%	\$0.07	2.34	2.15	AEG-BEST
Grocery	Cooling	Chiller - Variable Speed Fans	HP fan	Existing	1,162.57	15	\$208.36	15%	75%	\$0.02	0.61	0.54	New Jersey TRM
Grocery	Cooling	Water-Cooled Chiller - Condenser Water Reset	ChillCtrl	Existing	37,920.90	10	\$884.85	15%	75%	\$0.00	0.54	0.49	AEG-BEST
Grocery	Cooling	HVAC - Economizer	HP cool	Existing	167.06	10	\$168.42	18%	75%	\$0.13	76.26	69.54	AEG-BEST
Grocery	Heating	Space Heating - Heat Recovery Ventilator	CFM	Existing	4.47	14	\$5.08	3%	75%	\$0.13	24.09	20.77	7th Power Plan
Grocery	Ventilation	Ventilation - ECM on VAV Boxes	sqft	Existing	0.39	18	\$0.25	15%	20%	\$0.05	6.94	7.45	7th Power Plan
Grocery	Ventilation	Ventilation - Variable Speed Control	sqft	Existing	0.05	15	\$181.39	13%	50%	\$315.69	6.58	7.68	AEG-BEST
Grocery	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.02	15	\$0.25	15%	75%	\$1.02	4.77	5.40	7th Power Plan
Grocery	Cooling	Destratification Fans (HVLS)	Strat Fan	Existing	5,920.02	15	\$7,270.90	15%	15%	\$0.04	0.00	0.00	AEG Research
Grocery	Heating	Destratification Fans (HVLS)	Strat Fan	Existing	14,973.22	15	\$7,270.90	15%	15%	\$0.04	0.00	0.00	AEG Research
Grocery	Cooling	RTU - Maintenance	tonCool	Existing	75.37	3	\$35.00	15%	45%	\$0.14	21.42	21.57	AEG Research
Grocery	Cooling	RTU - Advanced Controls	sqft	Existing	0.20	15	\$0.07	15%	45%	\$0.04	16.21	14.90	7th Power Plan
Grocery	Cooling	RTU - Evaporative Precooler	tonCool	Existing	156.26	15	\$681.62	15%	75%	\$0.43	80.82	77.86	AEG Research
Grocery	Cooling	Ductless Mini Split Heat Pump	tonCool	Existing	341.19	15	\$3,359.26	15%	25%	\$0.40	0.91	0.94	7th Power Plan
Grocery	Heating	Ductless Mini Split Heat Pump	tonCool	Existing	487.00	15	\$3,359.26	15%	25%	\$0.40	1.08	0.98	7th Power Plan
Grocery	Cooling	Thermostat - WiFi/Interactive	sqft	Existing	0.71	5	\$0.66	30%	40%	\$0.07	20.40	20.29	7th Power Plan
Grocery	Heating	Thermostat - WiFi/Interactive	sqft	Existing	0.95	5	\$0.66	30%	40%	\$0.07	5.34	4.93	7th Power Plan

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Grocery	Ventilation	Thermostat - WiFi/Interactive	sqft	Existing	0.29	5	\$0.66	30%	40%	\$0.07	10.27	11.22	7th Power Plan
Grocery	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	Existing	88.82	10	\$8.35	25%	65%	\$0.01	3.89	6.15	Illinois TRM
Grocery	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	Existing	92.02	10	\$11.64	25%	65%	-\$0.10	2.01	3.20	7th Power Plan
Grocery	Water Heating	Water Heater - High Efficiency Circulation Pump	WHUnits	Existing	63.64	15	\$36.75	0%	0%	\$0.03	0.00	0.00	Hawaii TRM
Grocery	Water Heating	Water Heater - Pipe Insulation	PipeFeet	Existing	400.33	15	\$14.88	16%	75%	\$0.00	11.00	16.10	AEG-BEST
Grocery	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	Existing	60.79	4	\$144.04	25%	65%	-\$0.32	2.60	4.14	7th Power Plan
Grocery	Water Heating	Water Heater - Thermostat Setback	WHUnits	Existing	63.76	2	\$5.00	15%	75%	\$0.02	5.27	8.30	Illinois TRM
Grocery	Water Heating	Water Heater - Solar System	PipeFeet	Existing	1,377.27	20	\$215.28	1%	30%	\$0.01	18.33	27.44	AEG-BEST
Grocery	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.85	15	\$0.35	3%	23%	\$0.03	72.66	84.38	7th Power Plan
Grocery	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	1.17	15	\$0.58	3%	23%	\$0.04	97.88	116.12	7th Power Plan
Grocery	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	Existing	480.56	15	\$54.41	1%	3%	\$0.01	2.04	2.60	7th Power Plan
Grocery	Interior Lighting	Interior Lighting - Timeclocks and Timers	occ sens	Existing	0.00	8	\$111.67	7%	15%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Grocery	Interior Lighting	Interior Lighting - Skylights	1000 sqft	Existing	0.00	15	\$1,006.35	15%	30%	\$0.00	0.00	0.00	AEG Research
Grocery	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	1000 sqft	Existing	671.30	16	\$1,807.69	5%	15%	\$0.19	22.30	30.26	7th Power Plan
Grocery	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	Existing	7,083.57	11	\$30.80	15%	50%	\$0.00	87.57	107.13	Illinois TRM
Grocery	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	ELtg Watts	Existing	0.92	8	\$0.63	15%	25%	\$0.07	29.15	38.12	7th Power Plan
Grocery	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	Existing	67.98	8	\$55.10	15%	25%	\$0.09	14.74	19.85	Pacific Gas and Electric Research
Grocery	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	Existing	81.00	7	\$3,400.00	15%	30%	\$4.66	25.88	36.23	AEG Research
Grocery	Refrigeration	Refrigeration - Anti-Sweat Heater	Fridge Feet	Existing	219.64	8	\$48.18	33%	75%	\$0.03	84.60	115.00	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Grocery	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	Existing	71.68	4	\$10.44	27%	35%	\$0.03	12.11	15.55	Michigan Energy Measures Database
Grocery	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	Existing	255.63	16	\$165.20	33%	75%	\$0.06	43.36	44.88	7th Power Plan
Grocery	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	Existing	682.45	15	\$335.85	23%	75%	\$0.05	1,402.53	1,405.88	7th Power Plan
Grocery	Refrigeration	Refrigeration - Strip Curtain	Walkin Door	Existing	106.09	2	\$10.41	33%	75%	\$0.04	12.72	15.40	7th Power Plan
Grocery	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	Existing	9.03	15	\$45.43	16%	38%	\$0.43	204.82	236.52	Annual Energy Outlook, 2015
Grocery	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	Existing	197.93	15	\$313.82	16%	38%	\$0.14	379.66	421.34	Annual Energy Outlook, 2015
Grocery	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	Existing	156.47	10	\$506.05	33%	75%	\$0.34	25.91	28.63	Vermont TRM
Grocery	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	Existing	55.64	6	\$45.41	20%	75%	\$0.13	170.87	192.14	7th Power Plan
Grocery	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	Existing	10.40	8	\$3.72	20%	75%	\$0.05	12.11	13.21	7th Power Plan
Grocery	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	Existing	2,909.67	5	\$45.85	20%	75%	\$0.00	450.37	420.66	Illinois TRM
Grocery	Refrigeration	Grocery - ECMs for Display Cases	Fridge Case	Existing	242.38	16	\$165.20	33%	75%	\$0.06	72.50	78.69	7th Power Plan
Grocery	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	Existing	1,189.89	5	\$187.94	25%	75%	\$0.03	24.38	24.35	Illinois TRM
Grocery	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	Existing	4,178.68	18	\$8,526.67	25%	50%	\$0.16	15.09	16.29	7th Power Plan
Grocery	Office Equipment	Office Equipment - Smart Power Strips	Smart Strip	Existing	15.20	4	\$41.63	10%	50%	\$0.62	5.40	4.35	7th Power Plan
Grocery	Cooling	Lodging - Guest Room Controls	LodgUnit	Existing	309.97	15	\$260.00	0%	0%	\$0.43	0.00	0.00	AEG-BEST
Grocery	Heating	Lodging - Guest Room Controls	LodgUnit	Existing	-253.34	15	\$260.00	0%	0%	\$0.43	0.00	0.00	AEG-BEST
Grocery	Office Equipment	Data Center - Best Practice Measures	sqft	Existing	0.02	5	\$0.00	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Grocery	Cooling	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.02	0%	0%	\$0.03	0.00	0.00	com-datacenters-7p_v5p.xlsx
Grocery	Ventilation	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.02	0%	0%	\$0.03	0.00	0.00	com-datacenters-7p_v5p.xlsx

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Grocery	Interior Lighting	Data Center - Commercially Available Measures	sqft	Existing	0.06	8	\$0.02	0%	0%	\$0.03	0.00	0.00	com-datacenters-7p_v5p.xlsx
Grocery	Office Equipment	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.02	0%	0%	\$0.03	0.00	0.00	com-datacenters-7p_v5p.xlsx
Grocery	Cooling	Data Center - Cutting Edge Measures	sqft	Existing	0.07	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Grocery	Office Equipment	Data Center - Cutting Edge Measures	sqft	Existing	0.00	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Grocery	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	Existing	2,195.95	18	\$4,092.80	0%	0%	\$0.15	0.00	0.00	7th Power Plan
Grocery	Miscellaneous	Pool Pump - Timer	perBldg	Existing	0.00	10	\$85.22	15%	75%	\$0.00	0.00	0.00	Ontario Power TRM
Grocery	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	Existing	10,629.75	6	\$35.93	1%	3%	\$0.00	0.00	13.18	7th Power Plan
Grocery	Cooling	Advanced New Construction Designs	sqft	Existing	1.51	25	\$4.11	0%	0%	\$0.05	0.00	0.00	AEG Research
Grocery	Heating	Advanced New Construction Designs	sqft	Existing	1.88	25	\$4.11	0%	0%	\$0.05	0.00	0.00	AEG Research
Grocery	Ventilation	Advanced New Construction Designs	sqft	Existing	0.57	25	\$4.11	0%	0%	\$0.05	0.00	0.00	AEG Research
Grocery	Water Heating	Advanced New Construction Designs	sqft	Existing	0.45	25	\$4.11	0%	0%	\$0.05	0.00	0.00	AEG Research
Grocery	Interior Lighting	Advanced New Construction Designs	sqft	Existing	1.64	25	\$4.11	0%	0%	\$0.05	0.00	0.00	AEG Research
Grocery	Exterior Lighting	Advanced New Construction Designs	sqft	Existing	0.51	25	\$4.11	0%	0%	\$0.05	0.00	0.00	AEG Research
Grocery	Cooling	Strategic Energy Management	sqft	Existing	0.21	3	\$0.93	4%	27%	\$0.12	14.69	15.22	AEG Research
Grocery	Heating	Strategic Energy Management	sqft	Existing	0.28	3	\$0.93	4%	27%	\$0.12	3.90	3.60	AEG Research
Grocery	Ventilation	Strategic Energy Management	sqft	Existing	0.09	3	\$0.93	4%	27%	\$0.12	7.47	8.67	AEG Research
Grocery	Water Heating	Strategic Energy Management	sqft	Existing	0.07	3	\$0.93	4%	27%	\$0.12	2.76	4.46	AEG Research
Grocery	Interior Lighting	Strategic Energy Management	sqft	Existing	0.25	3	\$0.93	4%	27%	\$0.12	18.52	25.99	AEG Research
Grocery	Exterior Lighting	Strategic Energy Management	sqft	Existing	0.08	3	\$0.93	4%	27%	\$0.12	5.96	8.28	AEG Research

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Grocery	Refrigeration	Strategic Energy Management	sqft	Existing	0.94	3	\$0.93	4%	27%	\$0.12	78.00	88.72	AEG Research
Grocery	Office Equipment	Strategic Energy Management	sqft	Existing	0.02	3	\$0.93	4%	27%	\$0.12	2.03	1.67	AEG Research
Grocery	Cooling	Commissioning	sqft	Existing	0.29	3	\$1.07	0%	0%	\$0.08	0.00	0.00	AEG Research
Grocery	Heating	Commissioning	sqft	Existing	0.39	3	\$1.07	0%	0%	\$0.08	0.00	0.00	AEG Research
Grocery	Ventilation	Commissioning	sqft	Existing	0.12	3	\$1.07	0%	0%	\$0.08	0.00	0.00	AEG Research
Grocery	Water Heating	Commissioning	sqft	Existing	0.03	3	\$1.07	0%	0%	\$0.08	0.00	0.00	AEG Research
Grocery	Interior Lighting	Commissioning	sqft	Existing	0.28	3	\$1.07	0%	0%	\$0.08	0.00	0.00	AEG Research
Grocery	Exterior Lighting	Commissioning	sqft	Existing	0.09	3	\$1.07	0%	0%	\$0.08	0.00	0.00	AEG Research
Grocery	Refrigeration	Commissioning	sqft	Existing	2.16	3	\$1.07	0%	0%	\$0.08	0.00	0.00	AEG Research
Grocery	Cooling	Retrocommissioning	sqft	Existing	0.29	3	\$0.68	10%	61%	\$0.05	46.67	47.43	AEG Research
Grocery	Heating	Retrocommissioning	sqft	Existing	0.40	3	\$0.68	10%	61%	\$0.05	12.38	11.20	AEG Research
Grocery	Ventilation	Retrocommissioning	sqft	Existing	0.12	3	\$0.68	10%	61%	\$0.05	23.72	27.00	AEG Research
Grocery	Water Heating	Retrocommissioning	sqft	Existing	0.03	3	\$0.68	10%	61%	\$0.05	2.86	4.59	AEG Research
Grocery	Interior Lighting	Retrocommissioning	sqft	Existing	0.29	3	\$0.68	10%	61%	\$0.05	48.77	67.30	AEG Research
Grocery	Exterior Lighting	Retrocommissioning	sqft	Existing	0.09	3	\$0.68	10%	61%	\$0.05	15.68	21.45	AEG Research
Grocery	Refrigeration	Retrocommissioning	sqft	Existing	2.26	3	\$0.68	10%	61%	\$0.05	423.05	464.86	AEG Research
Grocery	Interior Lighting	Fruit Storage - Lighting Controls	sqft	Existing	0.20	10	\$0.09	0%	0%	\$0.04	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Grocery	Refrigeration	Fruit Storage Refrigeration Retrofit	sqft	Existing	8.78	10	\$1.09	0%	0%	\$0.02	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Grocery	Refrigeration	Fruit Storage Refrigeration Tuneup	sqft	Existing	1.89	3	\$0.23	0%	0%	\$0.03	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Grocery	Refrigeration	Fruit Storage Retrofit - CO2 Scrub	sqft	Existing	3.54	10	\$3.13	0%	0%	\$0.10	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Grocery	Refrigeration	Fruit Storage Retrofit - Membrane	sqft	Existing	0.71	10	\$0.68	0%	0%	\$0.10	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Grocery	Cooling	Insulation - Ceiling	sqft roof	New	0.08	45	\$1.28	15%	50%	\$0.87	4.93	4.65	Building Energy Simulation Tool

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Grocery	Heating	Insulation - Ceiling	sqft roof	New	0.02	45	\$1.28	15%	50%	\$0.87	0.22	0.21	Building Energy Simulation Tool
Grocery	Ventilation	Insulation - Ceiling	sqft roof	New	0.00	45	\$1.28	15%	50%	\$0.87	0.35	0.35	Building Energy Simulation Tool
Grocery	Cooling	Insulation - Ducting	sqft duct	New	0.00	20	\$0.84	15%	25%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Grocery	Heating	Insulation - Ducting	sqft duct	New	0.00	20	\$0.84	15%	25%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Grocery	Ventilation	Insulation - Ducting	sqft duct	New	0.00	20	\$0.84	15%	25%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Grocery	Cooling	Building Shell - Cool Roofs	sqft roof	New	0.58	20	\$0.78	45%	50%	\$0.15	5.02	4.68	Building Energy Simulation Tool
Grocery	Heating	Building Shell - Cool Roofs	sqft roof	New	-0.08	20	\$0.78	45%	50%	\$0.15	-0.13	-0.12	Building Energy Simulation Tool
Grocery	Ventilation	Building Shell - Cool Roofs	sqft roof	New	-0.02	20	\$0.78	45%	50%	\$0.15	-0.20	-0.20	Building Energy Simulation Tool
Grocery	Cooling	Insulation - Wall Cavity	sqft wall	New	0.09	45	\$0.78	15%	50%	\$0.54	4.01	3.78	Building Energy Simulation Tool
Grocery	Heating	Insulation - Wall Cavity	sqft wall	New	0.01	45	\$0.78	15%	50%	\$0.54	0.10	0.09	Building Energy Simulation Tool
Grocery	Ventilation	Insulation - Wall Cavity	sqft wall	New	0.00	45	\$0.78	15%	50%	\$0.54	0.16	0.16	Building Energy Simulation Tool
Grocery	Cooling	HVAC - Duct Repair and Sealing	tonCool	New	-5.52	18	\$0.57	15%	25%	\$10.00	-0.29	-0.27	Building Energy Simulation Tool
Grocery	Heating	HVAC - Duct Repair and Sealing	tonCool	New	0.50	18	\$0.57	15%	25%	\$10.00	0.00	0.00	Building Energy Simulation Tool
Grocery	Ventilation	HVAC - Duct Repair and Sealing	tonCool	New	0.11	18	\$0.57	15%	25%	\$10.00	0.01	0.01	Building Energy Simulation Tool
Grocery	Cooling	Windows - High Efficiency Glazing	sqft window	New	2.84	30	\$35.93	66%	66%	\$0.28	0.00	0.00	7th Power Plan
Grocery	Heating	Windows - High Efficiency Glazing	sqft window	New	6.74	30	\$35.93	66%	66%	\$0.28	0.00	0.00	7th Power Plan
Grocery	Ventilation	Windows - High Efficiency Glazing	sqft window	New	0.82	30	\$35.93	66%	66%	\$0.28	0.00	0.00	7th Power Plan
Grocery	Cooling	Chiller - Chilled Water Reset	ChillCtrl	New	4,086.34	10	\$884.85	15%	75%	\$0.03	0.04	0.04	AEG-BEST
Grocery	Cooling	Chiller - Chilled Water Variable-Flow System	HP cool	New	387.29	15	\$332.55	15%	75%	\$0.09	0.69	0.61	AEG-BEST

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Grocery	Cooling	Chiller - Variable Speed Fans	HP fan	New	974.17	15	\$208.36	15%	75%	\$0.02	0.17	0.15	New Jersey TRM
Grocery	Cooling	Water-Cooled Chiller - Condenser Water Reset	ChillCtrl	New	31,723.16	10	\$884.85	15%	75%	\$0.00	0.13	0.11	AEG-BEST
Grocery	Cooling	HVAC - Economizer	HP cool	New	181.84	10	\$168.42	18%	75%	\$0.12	23.04	20.36	AEG-BEST
Grocery	Heating	Space Heating - Heat Recovery Ventilator	CFM	New	4.18	14	\$5.08	6%	75%	\$0.14	7.12	6.18	7th Power Plan
Grocery	Ventilation	Ventilation - ECM on VAV Boxes	sqft	New	0.34	18	\$0.25	15%	20%	\$0.05	3.71	3.72	7th Power Plan
Grocery	Ventilation	Ventilation - Variable Speed Control	sqft	New	0.04	15	\$181.39	19%	50%	\$317.53	2.04	2.06	AEG-BEST
Grocery	Ventilation	Ventilation - Demand Controlled	sqft	New	0.02	15	\$0.25	15%	75%	\$1.03	1.70	1.71	7th Power Plan
Grocery	Cooling	Destratification Fans (HVLS)	Strat Fan	New	6,359.25	15	\$7,270.90	15%	15%	\$0.04	0.00	0.00	AEG Research
Grocery	Heating	Destratification Fans (HVLS)	Strat Fan	New	14,021.41	15	\$7,270.90	15%	15%	\$0.04	0.00	0.00	AEG Research
Grocery	Cooling	RTU - Maintenance	tonCool	New	85.74	3	\$35.00	15%	45%	\$0.13	2.49	2.22	AEG Research
Grocery	Cooling	RTU - Advanced Controls	sqft	New	0.21	15	\$0.07	15%	45%	\$0.03	9.07	8.29	7th Power Plan
Grocery	Cooling	RTU - Evaporative Precooler	tonCool	New	175.71	15	\$681.62	15%	75%	\$0.39	57.35	53.30	AEG Research
Grocery	Cooling	Ductless Mini Split Heat Pump	tonCool	New	302.86	15	\$3,359.26	15%	25%	\$0.44	0.36	0.33	7th Power Plan
Grocery	Heating	Ductless Mini Split Heat Pump	tonCool	New	468.46	15	\$3,359.26	15%	25%	\$0.44	0.44	0.39	7th Power Plan
Grocery	Cooling	Thermostat - WiFi/Interactive	sqft	New	0.78	5	\$0.66	30%	40%	\$0.07	1.64	1.47	7th Power Plan
Grocery	Heating	Thermostat - WiFi/Interactive	sqft	New	0.91	5	\$0.66	30%	40%	\$0.07	0.35	0.30	7th Power Plan
Grocery	Ventilation	Thermostat - WiFi/Interactive	sqft	New	0.19	5	\$0.66	30%	40%	\$0.07	0.55	0.55	7th Power Plan
Grocery	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	New	80.95	10	\$8.35	25%	65%	\$0.01	1.00	1.41	Illinois TRM
Grocery	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	New	84.36	10	\$11.64	25%	65%	-\$0.10	0.52	0.74	7th Power Plan
Grocery	Water Heating	Water Heater - High Efficiency Circulation Pump	WHUnits	New	58.52	15	\$36.75	0%	0%	\$0.03	0.00	0.00	Hawaii TRM
Grocery	Water Heating	Water Heater - Pipe Insulation	PipeFeet	New	353.81	15	\$14.88	1%	75%	\$0.00	4.59	6.16	AEG-BEST

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Grocery	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	New	56.31	4	\$144.04	25%	65%	-\$0.32	0.28	0.42	7th Power Plan
Grocery	Water Heating	Water Heater - Thermostat Setback	WHUnits	New	58.38	2	\$5.00	15%	75%	\$0.02	0.23	0.36	Illinois TRM
Grocery	Water Heating	Water Heater - Solar System	PipeFeet	New	1,228.24	20	\$215.28	1%	30%	\$0.01	6.41	8.57	AEG-BEST
Grocery	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.83	15	\$0.35	11%	23%	\$0.03	38.86	42.60	7th Power Plan
Grocery	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	1.14	15	\$0.58	11%	23%	\$0.04	53.42	58.89	7th Power Plan
Grocery	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	New	465.62	15	\$54.41	1%	3%	\$0.01	0.63	0.73	7th Power Plan
Grocery	Interior Lighting	Interior Lighting - Timeclocks and Timers	occ sens	New	0.00	8	\$111.67	7%	15%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Grocery	Interior Lighting	Interior Lighting - Skylights	1000 sqft	New	0.00	15	\$1,006.35	18%	33%	\$0.00	0.00	0.00	AEG Research
Grocery	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	1000 sqft	New	648.01	16	\$1,807.69	5%	15%	\$0.19	8.39	9.84	7th Power Plan
Grocery	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	New	6,683.75	11	\$30.80	15%	50%	\$0.00	25.77	29.74	Illinois TRM
Grocery	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	ELtg Watts	New	0.83	8	\$0.63	15%	25%	\$0.07	6.45	8.40	7th Power Plan
Grocery	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	New	62.11	8	\$55.10	15%	25%	\$0.08	3.37	4.40	Pacific Gas and Electric Research
Grocery	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	New	76.47	7	\$3,400.00	15%	30%	\$4.60	5.52	7.25	AEG Research
Grocery	Refrigeration	Refrigeration - Anti-Sweat Heater	Fridge Feet	New	191.21	8	\$48.18	41%	75%	\$0.04	15.45	16.78	7th Power Plan
Grocery	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	New	65.21	4	\$10.44	35%	35%	\$0.04	0.00	0.00	Michigan Energy Measures Database
Grocery	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	New	247.96	16	\$165.20	41%	75%	\$0.06	13.30	11.16	7th Power Plan
Grocery	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	New	648.91	15	\$335.85	11%	75%	\$0.06	581.40	531.61	7th Power Plan
Grocery	Refrigeration	Refrigeration - Strip Curtain	Walkin Door	New	107.36	2	\$10.41	41%	75%	\$0.04	0.44	0.46	7th Power Plan
Grocery	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBtuh	New	9.46	15	\$45.43	21%	38%	\$0.46	65.68	59.48	Annual Energy Outlook, 2015

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Grocery	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	New	200.50	15	\$313.82	21%	38%	\$0.15	115.24	104.71	Annual Energy Outlook, 2015
Grocery	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	New	160.59	10	\$506.05	41%	75%	\$0.37	6.79	5.61	Vermont TRM
Grocery	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	New	57.60	6	\$45.41	20%	75%	\$0.14	33.61	30.35	7th Power Plan
Grocery	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	New	10.49	8	\$3.72	20%	75%	\$0.05	3.08	2.76	7th Power Plan
Grocery	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	New	2,741.85	5	\$45.85	20%	75%	\$0.00	58.32	50.90	Illinois TRM
Grocery	Refrigeration	Grocery - ECMs for Display Cases	Fridge Case	New	243.37	16	\$165.20	41%	75%	\$0.06	22.13	19.95	7th Power Plan
Grocery	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	New	1,277.37	5	\$187.94	25%	75%	\$0.03	3.72	3.14	Illinois TRM
Grocery	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	New	3,738.31	18	\$8,526.67	25%	50%	\$0.16	8.09	8.14	7th Power Plan
Grocery	Office Equipment	Office Equipment - Smart Power Strips	Smart Strip	New	14.76	4	\$41.63	10%	50%	\$0.65	0.52	0.41	7th Power Plan
Grocery	Cooling	Lodging - Guest Room Controls	LodgUnit	New	259.72	15	\$260.00	0%	0%	\$0.88	0.00	0.00	AEG-BEST
Grocery	Heating	Lodging - Guest Room Controls	LodgUnit	New	-236.70	15	\$260.00	0%	0%	\$0.88	0.00	0.00	AEG-BEST
Grocery	Office Equipment	Data Center - Best Practice Measures	sqft	New	0.02	5	\$0.00	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Grocery	Cooling	Data Center - Commercially Available Measures	sqft	New	0.02	8	\$0.02	0%	0%	\$0.03	0.00	0.00	com-datacenters-7p_v5p.xlsx
Grocery	Ventilation	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.02	0%	0%	\$0.03	0.00	0.00	com-datacenters-7p_v5p.xlsx
Grocery	Interior Lighting	Data Center - Commercially Available Measures	sqft	New	0.06	8	\$0.02	0%	0%	\$0.03	0.00	0.00	com-datacenters-7p_v5p.xlsx
Grocery	Office Equipment	Data Center - Commercially Available Measures	sqft	New	0.01	8	\$0.02	0%	0%	\$0.03	0.00	0.00	com-datacenters-7p_v5p.xlsx
Grocery	Cooling	Data Center - Cutting Edge Measures	sqft	New	0.07	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Grocery	Office Equipment	Data Center - Cutting Edge Measures	sqft	New	0.00	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Grocery	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	New	1,964.53	18	\$4,092.80	0%	0%	\$0.15	0.00	0.00	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Grocery	Miscellaneous	Pool Pump - Timer	perBldg	New	0.00	10	\$85.22	15%	75%	\$0.00	0.00	0.00	Ontario Power TRM
Grocery	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	New	10,629.75	6	\$35.93	1%	3%	\$0.00	0.00	1.22	7th Power Plan
Grocery	Cooling	Advanced New Construction Designs	sqft	New	1.62	25	\$4.11	10%	15%	\$0.05	15.42	14.40	AEG Research
Grocery	Heating	Advanced New Construction Designs	sqft	New	1.81	25	\$4.11	10%	15%	\$0.05	3.19	2.94	AEG Research
Grocery	Ventilation	Advanced New Construction Designs	sqft	New	0.38	25	\$4.11	10%	15%	\$0.05	4.91	4.98	AEG Research
Grocery	Water Heating	Advanced New Construction Designs	sqft	New	0.42	25	\$4.11	10%	15%	\$0.05	2.47	2.85	AEG Research
Grocery	Interior Lighting	Advanced New Construction Designs	sqft	New	1.60	25	\$4.11	10%	15%	\$0.05	16.89	18.49	AEG Research
Grocery	Exterior Lighting	Advanced New Construction Designs	sqft	New	0.47	25	\$4.11	10%	15%	\$0.05	5.01	5.50	AEG Research
Grocery	Cooling	Strategic Energy Management	sqft	New	0.24	3	\$0.88	4%	27%	\$0.12	1.25	1.11	AEG Research
Grocery	Heating	Strategic Energy Management	sqft	New	0.28	3	\$0.88	4%	27%	\$0.12	0.27	0.23	AEG Research
Grocery	Ventilation	Strategic Energy Management	sqft	New	0.06	3	\$0.88	4%	27%	\$0.12	0.42	0.41	AEG Research
Grocery	Water Heating	Strategic Energy Management	sqft	New	0.06	3	\$0.88	4%	27%	\$0.12	0.21	0.32	AEG Research
Grocery	Interior Lighting	Strategic Energy Management	sqft	New	0.24	3	\$0.88	4%	27%	\$0.12	1.44	1.87	AEG Research
Grocery	Exterior Lighting	Strategic Energy Management	sqft	New	0.07	3	\$0.88	4%	27%	\$0.12	0.43	0.60	AEG Research
Grocery	Refrigeration	Strategic Energy Management	sqft	New	1.02	3	\$0.88	4%	27%	\$0.12	6.70	5.92	AEG Research
Grocery	Office Equipment	Strategic Energy Management	sqft	New	0.02	3	\$0.88	4%	27%	\$0.12	0.14	0.11	AEG Research
Grocery	Cooling	Commissioning	sqft	New	0.33	3	\$1.04	10%	61%	\$0.08	3.84	3.43	AEG Research
Grocery	Heating	Commissioning	sqft	New	0.38	3	\$1.04	10%	61%	\$0.08	0.83	0.70	AEG Research
Grocery	Ventilation	Commissioning	sqft	New	0.08	3	\$1.04	10%	61%	\$0.08	1.28	1.28	AEG Research
Grocery	Water Heating	Commissioning	sqft	New	0.03	3	\$1.04	10%	61%	\$0.08	0.22	0.33	AEG Research
Grocery	Interior Lighting	Commissioning	sqft	New	0.28	3	\$1.04	10%	61%	\$0.08	3.68	4.80	AEG Research

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Grocery	Exterior Lighting	Commissioning	sqft	New	0.08	3	\$1.04	10%	61%	\$0.08	1.09	1.55	AEG Research
Grocery	Refrigeration	Commissioning	sqft	New	2.38	3	\$1.04	10%	61%	\$0.08	34.39	30.56	AEG Research
Grocery	Cooling	Retrocommissioning	sqft	New	0.33	3	\$0.66	0%	0%	\$0.05	0.00	0.00	AEG Research
Grocery	Heating	Retrocommissioning	sqft	New	0.38	3	\$0.66	0%	0%	\$0.05	0.00	0.00	AEG Research
Grocery	Ventilation	Retrocommissioning	sqft	New	0.08	3	\$0.66	0%	0%	\$0.05	0.00	0.00	AEG Research
Grocery	Water Heating	Retrocommissioning	sqft	New	0.03	3	\$0.66	0%	0%	\$0.05	0.00	0.00	AEG Research
Grocery	Interior Lighting	Retrocommissioning	sqft	New	0.28	3	\$0.66	0%	0%	\$0.05	0.00	0.00	AEG Research
Grocery	Exterior Lighting	Retrocommissioning	sqft	New	0.08	3	\$0.66	0%	0%	\$0.05	0.00	0.00	AEG Research
Grocery	Refrigeration	Retrocommissioning	sqft	New	2.38	3	\$0.66	0%	0%	\$0.05	0.00	0.00	AEG Research
Grocery	Interior Lighting	Fruit Storage - Lighting Controls	sqft	New	0.20	10	\$0.09	0%	0%	\$0.04	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Grocery	Refrigeration	Fruit Storage Refrigeration Retrofit	sqft	New	8.23	10	\$1.09	0%	0%	\$0.02	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Grocery	Refrigeration	Fruit Storage Refrigeration Tuneup	sqft	New	1.93	3	\$0.23	0%	0%	\$0.04	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Grocery	Refrigeration	Fruit Storage Retrofit - CO2 Scrub	sqft	New	3.62	10	\$3.13	0%	0%	\$0.10	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Grocery	Refrigeration	Fruit Storage Retrofit - Membrane	sqft	New	0.72	10	\$0.68	0%	0%	\$0.11	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Health	Cooling	Insulation - Ceiling	sqft roof	Existing	0.20	45	\$1.28	15%	35%	\$0.07	8.71	10.28	Building Energy Simulation Tool
Health	Heating	Insulation - Ceiling	sqft roof	Existing	0.85	45	\$1.28	15%	35%	\$0.07	2.39	2.18	Building Energy Simulation Tool
Health	Ventilation	Insulation - Ceiling	sqft roof	Existing	0.19	45	\$1.28	15%	35%	\$0.07	9.39	10.40	Building Energy Simulation Tool
Health	Cooling	Insulation - Ducting	sqft duct	Existing	0.51	20	\$0.84	15%	35%	\$0.00	22.71	26.90	Building Energy Simulation Tool
Health	Heating	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.84	15%	35%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Health	Ventilation	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.84	15%	35%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Health	Cooling	Building Shell - Cool Roofs	sqft roof	Existing	0.58	20	\$0.78	45%	50%	\$0.21	6.98	7.28	Building Energy Simulation Tool

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Health	Heating	Building Shell - Cool Roofs	sqft roof	Existing	-0.25	20	\$0.78	45%	50%	\$0.21	-0.18	-0.16	Building Energy Simulation Tool
Health	Ventilation	Building Shell - Cool Roofs	sqft roof	Existing	-0.06	20	\$0.78	45%	50%	\$0.21	-0.71	-0.77	Building Energy Simulation Tool
Health	Cooling	Insulation - Wall Cavity	sqft wall	Existing	-0.05	45	\$0.78	15%	35%	\$0.02	-2.24	-2.34	Building Energy Simulation Tool
Health	Heating	Insulation - Wall Cavity	sqft wall	Existing	2.45	45	\$0.78	15%	35%	\$0.02	6.04	5.48	Building Energy Simulation Tool
Health	Ventilation	Insulation - Wall Cavity	sqft wall	Existing	0.56	45	\$0.78	15%	35%	\$0.02	24.05	26.24	Building Energy Simulation Tool
Health	Cooling	HVAC - Duct Repair and Sealing	tonCool	Existing	18.79	18	\$0.57	15%	50%	\$10.00	10.22	12.79	Building Energy Simulation Tool
Health	Heating	HVAC - Duct Repair and Sealing	tonCool	Existing	-40.42	18	\$0.57	15%	50%	\$10.00	-1.40	-1.34	Building Energy Simulation Tool
Health	Ventilation	HVAC - Duct Repair and Sealing	tonCool	Existing	-9.46	18	\$0.57	15%	50%	\$10.00	-5.66	-6.55	Building Energy Simulation Tool
Health	Cooling	Windows - High Efficiency Glazing	sqft window	Existing	9.89	30	\$35.93	48%	48%	\$0.04	0.00	0.00	7th Power Plan
Health	Heating	Windows - High Efficiency Glazing	sqft window	Existing	60.13	30	\$35.93	48%	48%	\$0.04	0.00	0.00	7th Power Plan
Health	Ventilation	Windows - High Efficiency Glazing	sqft window	Existing	7.87	30	\$35.93	48%	48%	\$0.04	0.00	0.00	7th Power Plan
Health	Cooling	Chiller - Chilled Water Reset	ChillCtrl	Existing	20,050.66	10	\$884.85	15%	75%	\$0.00	104.87	115.67	AEG-BEST
Health	Cooling	Chiller - Chilled Water Variable-Flow System	HP cool	Existing	507.25	15	\$332.55	15%	75%	\$0.05	362.12	418.36	AEG-BEST
Health	Cooling	Chiller - Variable Speed Fans	HP fan	Existing	1,114.84	15	\$208.36	15%	75%	\$0.02	80.28	90.81	New Jersey TRM
Health	Cooling	Water-Cooled Chiller - Condenser Water Reset	ChillCtrl	Existing	41,715.27	10	\$884.85	15%	75%	\$0.00	176.87	188.10	AEG-BEST
Health	Cooling	HVAC - Economizer	HP cool	Existing	123.13	10	\$168.42	18%	75%	\$0.12	92.27	119.57	AEG-BEST
Health	Heating	Space Heating - Heat Recovery Ventilator	CFM	Existing	4.40	14	\$5.08	3%	75%	\$0.13	24.33	21.42	7th Power Plan
Health	Ventilation	Ventilation - ECM on VAV Boxes	sqft	Existing	0.62	18	\$0.25	15%	20%	\$0.03	15.01	16.52	7th Power Plan
Health	Ventilation	Ventilation - Variable Speed Control	sqft	Existing	0.08	15	\$181.39	13%	50%	\$213.45	14.25	17.49	AEG-BEST

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Health	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.03	15	\$0.25	15%	75%	\$0.69	10.26	12.26	7th Power Plan
Health	Cooling	Destratification Fans (HVLS)	Strat Fan	Existing	5,485.29	15	\$7,270.90	15%	15%	\$0.02	0.00	0.00	AEG Research
Health	Heating	Destratification Fans (HVLS)	Strat Fan	Existing	30,850.00	15	\$7,270.90	15%	15%	\$0.02	0.00	0.00	AEG Research
Health	Cooling	RTU - Maintenance	tonCool	Existing	51.36	3	\$35.00	15%	45%	\$0.15	3.06	4.19	AEG Research
Health	Cooling	RTU - Advanced Controls	sqft	Existing	0.16	15	\$0.07	15%	45%	\$0.03	2.54	2.77	7th Power Plan
Health	Cooling	RTU - Evaporative Precooler	tonCool	Existing	103.01	15	\$681.62	15%	75%	\$0.45	10.77	12.39	AEG Research
Health	Cooling	Ductless Mini Split Heat Pump	tonCool	Existing	236.07	15	\$3,359.26	15%	25%	\$0.26	0.15	0.20	7th Power Plan
Health	Heating	Ductless Mini Split Heat Pump	tonCool	Existing	964.18	15	\$3,359.26	15%	25%	\$0.26	0.11	0.10	7th Power Plan
Health	Cooling	Thermostat - WiFi/Interactive	sqft	Existing	0.59	5	\$0.66	30%	40%	\$0.04	25.90	31.49	7th Power Plan
Health	Heating	Thermostat - WiFi/Interactive	sqft	Existing	1.94	5	\$0.66	30%	40%	\$0.04	5.37	5.03	7th Power Plan
Health	Ventilation	Thermostat - WiFi/Interactive	sqft	Existing	0.46	5	\$0.66	30%	40%	\$0.04	22.04	24.79	7th Power Plan
Health	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	Existing	209.00	10	\$8.35	25%	65%	\$0.00	4.31	6.85	Illinois TRM
Health	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	Existing	216.53	10	\$11.64	25%	65%	-\$0.04	2.23	3.57	7th Power Plan
Health	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	Existing	63.40	15	\$36.75	15%	50%	\$0.03	3.11	4.33	Hawaii TRM
Health	Water Heating	Water Heater - Pipe Insulation	PipeFeet	Existing	942.54	15	\$14.88	16%	75%	\$0.00	12.20	17.92	AEG-BEST
Health	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	Existing	142.29	4	\$144.04	25%	65%	-\$0.13	2.84	4.59	7th Power Plan
Health	Water Heating	Water Heater - Thermostat Setback	WHunits	Existing	63.19	2	\$5.00	15%	75%	\$0.02	5.77	9.21	Illinois TRM
Health	Water Heating	Water Heater - Solar System	PipeFeet	Existing	3,241.50	20	\$215.28	1%	30%	\$0.00	20.32	30.54	AEG-BEST
Health	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.82	15	\$0.35	3%	23%	\$0.03	105.62	119.02	7th Power Plan
Health	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	1.13	15	\$0.58	3%	23%	\$0.04	142.43	163.86	7th Power Plan
Health	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	Existing	361.04	15	\$54.41	1%	3%	\$0.01	3.07	3.80	7th Power Plan

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Health	Interior Lighting	Interior Lighting - Timeclocks and Timers	occ sens	Existing	0.00	8	\$111.67	7%	15%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Health	Interior Lighting	Interior Lighting - Skylights	1000 sqft	Existing	0.00	15	\$1,006.35	15%	25%	\$0.00	0.00	0.00	AEG Research
Health	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	1000 sqft	Existing	538.03	16	\$1,807.69	5%	15%	\$0.24	26.83	35.44	7th Power Plan
Health	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	Existing	5,634.58	11	\$30.80	15%	50%	\$0.00	104.11	124.95	Illinois TRM
Health	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	ELtg Watts	Existing	1.37	8	\$0.63	15%	25%	\$0.05	13.64	18.25	7th Power Plan
Health	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	Existing	91.65	8	\$55.10	15%	25%	\$0.06	6.89	9.50	Pacific Gas and Electric Research
Health	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	Existing	109.67	7	\$3,400.00	15%	30%	\$3.42	12.16	17.38	AEG Research
Health	Refrigeration	Refrigeration - Anti-Sweat Heater	Fridge Feet	Existing	15.56	8	\$48.18	4%	25%	\$0.46	0.96	1.21	7th Power Plan
Health	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	Existing	30.04	4	\$10.44	4%	25%	\$0.09	1.81	1.99	Michigan Energy Measures Database
Health	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	Existing	265.24	16	\$165.20	4%	25%	\$0.06	2.68	2.84	7th Power Plan
Health	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	Existing	27.72	15	\$335.85	0%	0%	\$1.24	0.00	0.00	7th Power Plan
Health	Refrigeration	Refrigeration - Strip Curtain	Walkln Door	Existing	23.00	2	\$10.41	4%	25%	\$0.21	0.87	0.95	7th Power Plan
Health	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBtuh	Existing	0.42	15	\$45.43	2%	13%	\$10.37	4.45	4.67	Annual Energy Outlook, 2015
Health	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	Existing	9.29	15	\$313.82	2%	13%	\$3.45	8.34	8.36	Annual Energy Outlook, 2015
Health	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	Existing	171.96	10	\$506.05	4%	25%	\$0.38	1.72	1.87	Vermont TRM
Health	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	Existing	9.33	6	\$45.41	0%	0%	\$0.89	0.00	0.00	7th Power Plan
Health	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	Existing	0.75	8	\$3.72	0%	0%	\$0.74	0.00	0.00	7th Power Plan
Health	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	Existing	178.48	5	\$45.85	0%	0%	\$0.05	0.00	0.00	Illinois TRM
Health	Refrigeration	Grocery - ECMs for Display Cases	Fridge Case	Existing	39.06	16	\$165.20	4%	25%	\$0.42	0.84	0.84	7th Power Plan

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Health	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	Existing	1,408.23	5	\$187.94	25%	75%	\$0.03	11.43	10.20	Illinois TRM
Health	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	Existing	6,641.63	18	\$8,526.67	25%	50%	\$0.11	32.37	35.98	7th Power Plan
Health	Office Equipment	Office Equipment - Smart Power Strips	Smart Strip	Existing	26.47	4	\$41.63	10%	50%	\$0.36	13.37	11.12	7th Power Plan
Health	Cooling	Lodging - Guest Room Controls	LodgUnit	Existing	201.60	15	\$260.00	0%	0%	\$10.00	0.00	0.00	AEG-BEST
Health	Heating	Lodging - Guest Room Controls	LodgUnit	Existing	-500.19	15	\$260.00	0%	0%	\$10.00	0.00	0.00	AEG-BEST
Health	Office Equipment	Data Center - Best Practice Measures	sqft	Existing	0.01	5	\$0.00	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Health	Cooling	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.02	0%	0%	\$0.03	0.00	0.00	com-datacenters-7p_v5p.xlsx
Health	Ventilation	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.02	0%	0%	\$0.03	0.00	0.00	com-datacenters-7p_v5p.xlsx
Health	Interior Lighting	Data Center - Commercially Available Measures	sqft	Existing	0.06	8	\$0.02	0%	0%	\$0.03	0.00	0.00	com-datacenters-7p_v5p.xlsx
Health	Office Equipment	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.02	0%	0%	\$0.03	0.00	0.00	com-datacenters-7p_v5p.xlsx
Health	Cooling	Data Center - Cutting Edge Measures	sqft	Existing	0.06	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Health	Office Equipment	Data Center - Cutting Edge Measures	sqft	Existing	0.00	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Health	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	Existing	5,260.30	18	\$4,092.80	0%	5%	\$0.07	4.26	4.72	7th Power Plan
Health	Miscellaneous	Pool Pump - Timer	perBldg	Existing	0.00	10	\$85.22	15%	75%	\$0.00	0.00	0.00	Ontario Power TRM
Health	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	Existing	16,195.02	6	\$35.93	1%	3%	\$0.00	0.00	19.59	7th Power Plan
Health	Cooling	Advanced New Construction Designs	sqft	Existing	1.22	25	\$4.11	0%	0%	\$0.03	0.00	0.00	AEG Research
Health	Heating	Advanced New Construction Designs	sqft	Existing	4.06	25	\$4.11	0%	0%	\$0.03	0.00	0.00	AEG Research
Health	Ventilation	Advanced New Construction Designs	sqft	Existing	0.91	25	\$4.11	0%	0%	\$0.03	0.00	0.00	AEG Research
Health	Water Heating	Advanced New Construction Designs	sqft	Existing	0.71	25	\$4.11	0%	0%	\$0.03	0.00	0.00	AEG Research

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Health	Interior Lighting	Advanced New Construction Designs	sqft	Existing	1.64	25	\$4.11	0%	0%	\$0.03	0.00	0.00	AEG Research
Health	Exterior Lighting	Advanced New Construction Designs	sqft	Existing	0.16	25	\$4.11	0%	0%	\$0.03	0.00	0.00	AEG Research
Health	Cooling	Strategic Energy Management	sqft	Existing	0.18	3	\$0.62	4%	28%	\$0.12	20.37	27.69	AEG Research
Health	Heating	Strategic Energy Management	sqft	Existing	0.59	3	\$0.62	4%	28%	\$0.12	4.26	3.93	AEG Research
Health	Ventilation	Strategic Energy Management	sqft	Existing	0.14	3	\$0.62	4%	28%	\$0.12	17.35	20.82	AEG Research
Health	Water Heating	Strategic Energy Management	sqft	Existing	0.11	3	\$0.62	4%	28%	\$0.12	3.19	5.19	AEG Research
Health	Interior Lighting	Strategic Energy Management	sqft	Existing	0.25	3	\$0.62	4%	28%	\$0.12	30.19	40.18	AEG Research
Health	Exterior Lighting	Strategic Energy Management	sqft	Existing	0.03	3	\$0.62	4%	28%	\$0.12	2.99	4.19	AEG Research
Health	Refrigeration	Strategic Energy Management	sqft	Existing	0.03	3	\$0.62	4%	28%	\$0.12	4.12	3.89	AEG Research
Health	Office Equipment	Strategic Energy Management	sqft	Existing	0.03	3	\$0.62	4%	28%	\$0.12	5.26	4.44	AEG Research
Health	Cooling	Commissioning	sqft	Existing	0.24	3	\$1.45	0%	0%	\$0.23	0.00	0.00	AEG Research
Health	Heating	Commissioning	sqft	Existing	0.79	3	\$1.45	0%	0%	\$0.23	0.00	0.00	AEG Research
Health	Ventilation	Commissioning	sqft	Existing	0.19	3	\$1.45	0%	0%	\$0.23	0.00	0.00	AEG Research
Health	Water Heating	Commissioning	sqft	Existing	0.05	3	\$1.45	0%	0%	\$0.23	0.00	0.00	AEG Research
Health	Interior Lighting	Commissioning	sqft	Existing	0.28	3	\$1.45	0%	0%	\$0.23	0.00	0.00	AEG Research
Health	Exterior Lighting	Commissioning	sqft	Existing	0.03	3	\$1.45	0%	0%	\$0.23	0.00	0.00	AEG Research
Health	Refrigeration	Commissioning	sqft	Existing	0.07	3	\$1.45	0%	0%	\$0.23	0.00	0.00	AEG Research
Health	Cooling	Retrocommissioning	sqft	Existing	0.25	3	\$0.92	12%	52%	\$0.14	46.45	63.59	AEG Research
Health	Heating	Retrocommissioning	sqft	Existing	0.81	3	\$0.92	12%	52%	\$0.14	9.71	9.03	AEG Research
Health	Ventilation	Retrocommissioning	sqft	Existing	0.19	3	\$0.92	12%	52%	\$0.14	39.57	47.81	AEG Research
Health	Water Heating	Retrocommissioning	sqft	Existing	0.05	3	\$0.92	12%	52%	\$0.14	2.43	3.98	AEG Research
Health	Interior Lighting	Retrocommissioning	sqft	Existing	0.29	3	\$0.92	12%	52%	\$0.14	57.39	76.90	AEG Research

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Health	Exterior Lighting	Retrocommissioning	sqft	Existing	0.03	3	\$0.92	12%	52%	\$0.14	5.68	8.01	AEG Research
Health	Refrigeration	Retrocommissioning	sqft	Existing	0.07	3	\$0.92	12%	52%	\$0.14	15.66	14.88	AEG Research
Health	Interior Lighting	Fruit Storage - Lighting Controls	sqft	Existing	0.21	10	\$0.09	0%	0%	\$0.04	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Health	Refrigeration	Fruit Storage Refrigeration Retrofit	sqft	Existing	0.22	10	\$1.09	0%	0%	\$0.64	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Health	Refrigeration	Fruit Storage Refrigeration Tuneup	sqft	Existing	0.05	3	\$0.23	0%	0%	\$1.31	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Health	Refrigeration	Fruit Storage Retrofit - CO2 Scrub	sqft	Existing	0.10	10	\$3.13	0%	0%	\$3.78	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Health	Refrigeration	Fruit Storage Retrofit - Membrane	sqft	Existing	0.02	10	\$0.68	0%	0%	\$4.10	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Health	Cooling	Insulation - Ceiling	sqft roof	New	0.02	45	\$1.28	15%	50%	\$0.18	1.02	0.99	Building Energy Simulation Tool
Health	Heating	Insulation - Ceiling	sqft roof	New	0.42	45	\$1.28	15%	50%	\$0.18	1.17	1.10	Building Energy Simulation Tool
Health	Ventilation	Insulation - Ceiling	sqft roof	New	0.07	45	\$1.28	15%	50%	\$0.18	4.46	4.56	Building Energy Simulation Tool
Health	Cooling	Insulation - Ducting	sqft duct	New	0.30	20	\$0.84	15%	50%	\$0.00	16.38	15.98	Building Energy Simulation Tool
Health	Heating	Insulation - Ducting	sqft duct	New	0.00	20	\$0.84	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Health	Ventilation	Insulation - Ducting	sqft duct	New	0.00	20	\$0.84	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Health	Cooling	Building Shell - Cool Roofs	sqft roof	New	0.11	20	\$0.78	45%	50%	\$10.00	0.83	0.81	Building Energy Simulation Tool
Health	Heating	Building Shell - Cool Roofs	sqft roof	New	-0.21	20	\$0.78	45%	50%	\$10.00	-0.08	-0.08	Building Energy Simulation Tool
Health	Ventilation	Building Shell - Cool Roofs	sqft roof	New	-0.04	20	\$0.78	45%	50%	\$10.00	-0.32	-0.32	Building Energy Simulation Tool
Health	Cooling	Insulation - Wall Cavity	sqft wall	New	0.00	45	\$0.78	15%	50%	\$0.09	0.22	0.21	Building Energy Simulation Tool
Health	Heating	Insulation - Wall Cavity	sqft wall	New	0.53	45	\$0.78	15%	50%	\$0.09	1.30	1.21	Building Energy Simulation Tool
Health	Ventilation	Insulation - Wall Cavity	sqft wall	New	0.09	45	\$0.78	15%	50%	\$0.09	4.90	4.95	Building Energy Simulation Tool

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Health	Cooling	HVAC - Duct Repair and Sealing	tonCool	New	15.88	18	\$0.57	15%	35%	\$0.00	3.31	3.24	Building Energy Simulation Tool
Health	Heating	HVAC - Duct Repair and Sealing	tonCool	New	191.10	18	\$0.57	15%	35%	\$0.00	2.07	1.91	Building Energy Simulation Tool
Health	Ventilation	HVAC - Duct Repair and Sealing	tonCool	New	33.62	18	\$0.57	15%	35%	\$0.00	7.85	7.90	Building Energy Simulation Tool
Health	Cooling	Windows - High Efficiency Glazing	sqft window	New	7.21	30	\$35.93	66%	66%	\$0.04	0.00	0.00	7th Power Plan
Health	Heating	Windows - High Efficiency Glazing	sqft window	New	54.20	30	\$35.93	66%	66%	\$0.04	0.00	0.00	7th Power Plan
Health	Ventilation	Windows - High Efficiency Glazing	sqft window	New	5.48	30	\$35.93	66%	66%	\$0.04	0.00	0.00	7th Power Plan
Health	Cooling	Chiller - Chilled Water Reset	ChillCtrl	New	13,401.30	10	\$884.85	15%	75%	\$0.01	22.60	22.03	AEG-BEST
Health	Cooling	Chiller - Chilled Water Variable-Flow System	HP cool	New	350.34	15	\$332.55	15%	75%	\$0.07	102.08	99.08	AEG-BEST
Health	Cooling	Chiller - Variable Speed Fans	HP fan	New	759.40	15	\$208.36	15%	75%	\$0.02	22.08	21.43	New Jersey TRM
Health	Cooling	Water-Cooled Chiller - Condenser Water Reset	ChillCtrl	New	27,028.02	10	\$884.85	15%	75%	\$0.00	36.22	35.43	AEG-BEST
Health	Cooling	HVAC - Economizer	HP cool	New	94.61	10	\$168.42	18%	75%	\$0.16	24.48	24.54	AEG-BEST
Health	Heating	Space Heating - Heat Recovery Ventilator	CFM	New	3.91	14	\$5.08	6%	75%	\$0.14	6.95	6.21	7th Power Plan
Health	Ventilation	Ventilation - ECM on VAV Boxes	sqft	New	0.42	18	\$0.25	15%	20%	\$0.04	6.74	6.80	7th Power Plan
Health	Ventilation	Ventilation - Variable Speed Control	sqft	New	0.05	15	\$181.39	19%	50%	\$260.03	3.65	3.76	AEG-BEST
Health	Ventilation	Ventilation - Demand Controlled	sqft	New	0.02	15	\$0.25	15%	75%	\$0.84	3.03	3.12	7th Power Plan
Health	Cooling	Destratification Fans (HVLS)	Strat Fan	New	3,996.64	15	\$7,270.90	15%	15%	\$0.02	0.00	0.00	AEG Research
Health	Heating	Destratification Fans (HVLS)	Strat Fan	New	27,806.03	15	\$7,270.90	15%	15%	\$0.02	0.00	0.00	AEG Research
Health	Cooling	RTU - Maintenance	tonCool	New	57.37	3	\$35.00	15%	45%	\$0.13	0.42	0.46	AEG Research
Health	Cooling	RTU - Advanced Controls	sqft	New	0.16	15	\$0.07	15%	45%	\$0.03	1.60	1.53	7th Power Plan
Health	Cooling	RTU - Evaporative Precooler	tonCool	New	115.39	15	\$681.62	15%	75%	\$0.41	9.45	9.05	AEG Research
Health	Cooling	Ductless Mini Split Heat Pump	tonCool	New	201.78	15	\$3,359.26	15%	25%	\$0.28	0.07	0.07	7th Power Plan

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Health	Heating	Ductless Mini Split Heat Pump	tonCool	New	919.97	15	\$3,359.26	15%	25%	\$0.28	0.04	0.04	7th Power Plan
Health	Cooling	Thermostat - WiFi/Interactive	sqft	New	0.47	5	\$0.66	30%	40%	\$0.05	1.80	1.88	7th Power Plan
Health	Heating	Thermostat - WiFi/Interactive	sqft	New	1.77	5	\$0.66	30%	40%	\$0.05	0.35	0.30	7th Power Plan
Health	Ventilation	Thermostat - WiFi/Interactive	sqft	New	0.32	5	\$0.66	30%	40%	\$0.05	1.32	1.36	7th Power Plan
Health	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	New	95.52	10	\$8.35	25%	65%	\$0.01	1.13	1.60	Illinois TRM
Health	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	New	99.55	10	\$11.64	25%	65%	-\$0.08	0.59	0.83	7th Power Plan
Health	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	New	58.48	15	\$36.75	15%	50%	\$0.03	1.45	1.77	Hawaii TRM
Health	Water Heating	Water Heater - Pipe Insulation	PipeFeet	New	835.26	15	\$14.88	1%	75%	\$0.00	5.21	7.00	AEG-BEST
Health	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	New	65.65	4	\$144.04	25%	65%	-\$0.27	0.31	0.48	7th Power Plan
Health	Water Heating	Water Heater - Thermostat Setback	WHunits	New	57.63	2	\$5.00	15%	75%	\$0.02	0.26	0.41	Illinois TRM
Health	Water Heating	Water Heater - Solar System	PipeFeet	New	2,898.85	20	\$215.28	1%	30%	\$0.00	7.28	9.73	AEG-BEST
Health	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.81	15	\$0.35	11%	23%	\$0.03	57.66	62.10	7th Power Plan
Health	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	1.12	15	\$0.58	11%	23%	\$0.04	79.31	85.88	7th Power Plan
Health	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	New	353.93	15	\$54.41	1%	3%	\$0.01	0.96	1.11	7th Power Plan
Health	Interior Lighting	Interior Lighting - Timeclocks and Timers	occ sens	New	0.00	8	\$111.67	7%	15%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Health	Interior Lighting	Interior Lighting - Skylights	1000 sqft	New	0.00	15	\$1,006.35	18%	25%	\$0.00	0.00	0.00	AEG Research
Health	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	1000 sqft	New	510.33	16	\$1,807.69	5%	15%	\$0.24	9.99	11.61	7th Power Plan
Health	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	New	5,289.69	11	\$30.80	15%	50%	\$0.00	31.09	35.11	Illinois TRM
Health	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	ELtg Watts	New	1.21	8	\$0.63	15%	25%	\$0.05	3.05	4.04	7th Power Plan

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Health	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	New	82.04	8	\$55.10	15%	25%	\$0.06	1.60	2.12	Pacific Gas and Electric Research
Health	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	New	100.20	7	\$3,400.00	15%	30%	\$3.40	2.56	3.50	AEG Research
Health	Refrigeration	Refrigeration - Anti-Sweat Heater	Fridge Feet	New	12.92	8	\$48.18	4%	25%	\$0.57	0.20	0.22	7th Power Plan
Health	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	New	26.54	4	\$10.44	4%	25%	\$0.10	0.17	0.17	Michigan Energy Measures Database
Health	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	New	234.84	16	\$165.20	4%	25%	\$0.07	0.90	0.87	7th Power Plan
Health	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	New	26.63	15	\$335.85	0%	0%	\$1.32	0.00	0.00	7th Power Plan
Health	Refrigeration	Refrigeration - Strip Curtain	Walkin Door	New	21.31	2	\$10.41	4%	25%	\$0.23	0.03	0.03	7th Power Plan
Health	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	New	0.42	15	\$45.43	2%	13%	\$11.04	1.66	1.51	Annual Energy Outlook, 2015
Health	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	New	8.94	15	\$313.82	2%	13%	\$3.68	2.91	2.65	Annual Energy Outlook, 2015
Health	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	New	155.74	10	\$506.05	4%	25%	\$0.43	0.47	0.45	Vermont TRM
Health	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	New	8.86	6	\$45.41	0%	0%	\$0.96	0.00	0.00	7th Power Plan
Health	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	New	0.71	8	\$3.72	0%	0%	\$0.80	0.00	0.00	7th Power Plan
Health	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	New	170.87	5	\$45.85	0%	0%	\$0.06	0.00	0.00	Illinois TRM
Health	Refrigeration	Grocery - ECMs for Display Cases	Fridge Case	New	36.87	16	\$165.20	4%	25%	\$0.46	0.29	0.27	7th Power Plan
Health	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	New	1,384.78	5	\$187.94	25%	75%	\$0.03	1.53	1.29	Illinois TRM
Health	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	New	4,562.55	18	\$8,526.67	25%	50%	\$0.13	14.67	14.83	7th Power Plan
Health	Office Equipment	Office Equipment - Smart Power Strips	Smart Strip	New	26.13	4	\$41.63	10%	50%	\$0.37	1.36	1.09	7th Power Plan
Health	Cooling	Lodging - Guest Room Controls	LodgUnit	New	176.78	15	\$260.00	0%	0%	\$10.00	0.00	0.00	AEG-BEST
Health	Heating	Lodging - Guest Room Controls	LodgUnit	New	-487.98	15	\$260.00	0%	0%	\$10.00	0.00	0.00	AEG-BEST

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Health	Office Equipment	Data Center - Best Practice Measures	sqft	New	0.01	5	\$0.00	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Health	Cooling	Data Center - Commercially Available Measures	sqft	New	0.01	8	\$0.02	0%	0%	\$0.03	0.00	0.00	com-datacenters-7p_v5p.xlsx
Health	Ventilation	Data Center - Commercially Available Measures	sqft	New	0.01	8	\$0.02	0%	0%	\$0.03	0.00	0.00	com-datacenters-7p_v5p.xlsx
Health	Interior Lighting	Data Center - Commercially Available Measures	sqft	New	0.06	8	\$0.02	0%	0%	\$0.03	0.00	0.00	com-datacenters-7p_v5p.xlsx
Health	Office Equipment	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.02	0%	0%	\$0.03	0.00	0.00	com-datacenters-7p_v5p.xlsx
Health	Cooling	Data Center - Cutting Edge Measures	sqft	New	0.04	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Health	Office Equipment	Data Center - Cutting Edge Measures	sqft	New	0.00	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Health	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	New	3,607.40	18	\$4,092.80	0%	5%	\$0.08	1.92	1.94	7th Power Plan
Health	Miscellaneous	Pool Pump - Timer	perBldg	New	0.00	10	\$85.22	15%	75%	\$0.00	0.00	0.00	Ontario Power TRM
Health	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	New	8,097.51	6	\$35.93	1%	3%	\$0.00	0.00	1.86	7th Power Plan
Health	Cooling	Advanced New Construction Designs	sqft	New	0.96	25	\$4.11	10%	25%	\$0.04	50.60	48.22	AEG Research
Health	Heating	Advanced New Construction Designs	sqft	New	3.66	25	\$4.11	10%	25%	\$0.04	9.76	9.08	AEG Research
Health	Ventilation	Advanced New Construction Designs	sqft	New	0.64	25	\$4.11	10%	25%	\$0.04	36.37	37.00	AEG Research
Health	Water Heating	Advanced New Construction Designs	sqft	New	0.65	25	\$4.11	10%	25%	\$0.04	8.36	9.68	AEG Research
Health	Interior Lighting	Advanced New Construction Designs	sqft	New	1.63	25	\$4.11	10%	25%	\$0.04	77.93	83.68	AEG Research
Health	Exterior Lighting	Advanced New Construction Designs	sqft	New	0.15	25	\$4.11	10%	25%	\$0.04	7.05	7.82	AEG Research
Health	Cooling	Strategic Energy Management	sqft	New	0.14	3	\$0.56	4%	28%	\$0.12	1.44	1.56	AEG Research
Health	Heating	Strategic Energy Management	sqft	New	0.54	3	\$0.56	4%	28%	\$0.12	0.28	0.24	AEG Research
Health	Ventilation	Strategic Energy Management	sqft	New	0.10	3	\$0.56	4%	28%	\$0.12	1.06	1.09	AEG Research

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Health	Water Heating	Strategic Energy Management	sqft	New	0.10	3	\$0.56	4%	28%	\$0.12	0.24	0.38	AEG Research
Health	Interior Lighting	Strategic Energy Management	sqft	New	0.25	3	\$0.56	4%	28%	\$0.12	2.27	3.00	AEG Research
Health	Exterior Lighting	Strategic Energy Management	sqft	New	0.02	3	\$0.56	4%	28%	\$0.12	0.21	0.30	AEG Research
Health	Refrigeration	Strategic Energy Management	sqft	New	0.03	3	\$0.56	4%	28%	\$0.12	0.29	0.24	AEG Research
Health	Office Equipment	Strategic Energy Management	sqft	New	0.04	3	\$0.56	4%	28%	\$0.12	0.38	0.30	AEG Research
Health	Cooling	Commissioning	sqft	New	0.20	3	\$1.29	12%	52%	\$0.22	3.32	3.59	AEG Research
Health	Heating	Commissioning	sqft	New	0.75	3	\$1.29	12%	52%	\$0.22	0.64	0.56	AEG Research
Health	Ventilation	Commissioning	sqft	New	0.13	3	\$1.29	12%	52%	\$0.22	2.44	2.51	AEG Research
Health	Water Heating	Commissioning	sqft	New	0.05	3	\$1.29	12%	52%	\$0.22	0.19	0.29	AEG Research
Health	Interior Lighting	Commissioning	sqft	New	0.28	3	\$1.29	12%	52%	\$0.22	4.36	5.75	AEG Research
Health	Exterior Lighting	Commissioning	sqft	New	0.03	3	\$1.29	12%	52%	\$0.22	0.39	0.58	AEG Research
Health	Refrigeration	Commissioning	sqft	New	0.07	3	\$1.29	12%	52%	\$0.22	1.11	0.94	AEG Research
Health	Cooling	Retrocommissioning	sqft	New	0.20	3	\$0.82	0%	0%	\$0.14	0.00	0.00	AEG Research
Health	Heating	Retrocommissioning	sqft	New	0.75	3	\$0.82	0%	0%	\$0.14	0.00	0.00	AEG Research
Health	Ventilation	Retrocommissioning	sqft	New	0.13	3	\$0.82	0%	0%	\$0.14	0.00	0.00	AEG Research
Health	Water Heating	Retrocommissioning	sqft	New	0.05	3	\$0.82	0%	0%	\$0.14	0.00	0.00	AEG Research
Health	Interior Lighting	Retrocommissioning	sqft	New	0.28	3	\$0.82	0%	0%	\$0.14	0.00	0.00	AEG Research
Health	Exterior Lighting	Retrocommissioning	sqft	New	0.03	3	\$0.82	0%	0%	\$0.14	0.00	0.00	AEG Research
Health	Refrigeration	Retrocommissioning	sqft	New	0.07	3	\$0.82	0%	0%	\$0.14	0.00	0.00	AEG Research
Health	Interior Lighting	Fruit Storage - Lighting Controls	sqft	New	0.20	10	\$0.09	0%	0%	\$0.04	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Health	Refrigeration	Fruit Storage Refrigeration Retrofit	sqft	New	0.21	10	\$1.09	0%	0%	\$0.69	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Health	Refrigeration	Fruit Storage Refrigeration Tuneup	sqft	New	0.05	3	\$0.23	0%	0%	\$1.41	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Health	Refrigeration	Fruit Storage Retrofit - CO2 Scrub	sqft	New	0.10	10	\$3.13	0%	0%	\$4.09	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Health	Refrigeration	Fruit Storage Retrofit - Membrane	sqft	New	0.02	10	\$0.68	0%	0%	\$4.43	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
College	Cooling	Insulation - Ceiling	sqft roof	Existing	0.02	45	\$1.28	15%	35%	\$0.10	11.55	11.66	Building Energy Simulation Tool
College	Heating	Insulation - Ceiling	sqft roof	Existing	0.80	45	\$1.28	15%	35%	\$0.10	116.48	106.53	Building Energy Simulation Tool
College	Ventilation	Insulation - Ceiling	sqft roof	Existing	0.11	45	\$1.28	15%	35%	\$0.10	66.23	71.32	Building Energy Simulation Tool
College	Cooling	Insulation - Ducting	sqft duct	Existing	0.46	20	\$0.84	15%	35%	\$0.00	117.51	118.67	Building Energy Simulation Tool
College	Heating	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.84	15%	35%	\$0.00	0.00	0.00	Building Energy Simulation Tool
College	Ventilation	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.84	15%	35%	\$0.00	0.00	0.00	Building Energy Simulation Tool
College	Cooling	Building Shell - Cool Roofs	sqft roof	Existing	0.38	20	\$0.78	45%	50%	\$1.62	50.19	47.98	Building Energy Simulation Tool
College	Heating	Building Shell - Cool Roofs	sqft roof	Existing	-0.31	20	\$0.78	45%	50%	\$1.62	-11.23	-10.17	Building Energy Simulation Tool
College	Ventilation	Building Shell - Cool Roofs	sqft roof	Existing	-0.04	20	\$0.78	45%	50%	\$1.62	-6.31	-6.74	Building Energy Simulation Tool
College	Cooling	Insulation - Wall Cavity	sqft wall	Existing	-0.34	45	\$0.78	15%	35%	\$0.07	-56.89	-54.80	Building Energy Simulation Tool
College	Heating	Insulation - Wall Cavity	sqft wall	Existing	1.04	45	\$0.78	15%	35%	\$0.07	47.44	42.93	Building Energy Simulation Tool
College	Ventilation	Insulation - Wall Cavity	sqft wall	Existing	0.14	45	\$0.78	15%	35%	\$0.07	26.67	28.47	Building Energy Simulation Tool
College	Cooling	HVAC - Duct Repair and Sealing	tonCool	Existing	23.05	18	\$0.57	15%	50%	\$0.01	85.92	82.37	Building Energy Simulation Tool
College	Heating	HVAC - Duct Repair and Sealing	tonCool	Existing	-16.59	18	\$0.57	15%	50%	\$0.01	-17.00	-15.42	Building Energy Simulation Tool
College	Ventilation	HVAC - Duct Repair and Sealing	tonCool	Existing	-2.26	18	\$0.57	15%	50%	\$0.01	-9.56	-10.23	Building Energy Simulation Tool
College	Cooling	Windows - High Efficiency Glazing	sqft window	Existing	8.68	30	\$35.93	48%	48%	\$0.04	0.00	0.00	7th Power Plan
College	Heating	Windows - High Efficiency Glazing	sqft window	Existing	56.92	30	\$35.93	48%	48%	\$0.04	0.00	0.00	7th Power Plan

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College	Ventilation	Windows - High Efficiency Glazing	sqft window	Existing	4.51	30	\$35.93	48%	48%	\$0.04	0.00	0.00	7th Power Plan
College	Cooling	Chiller - Chilled Water Reset	ChillCtrl	Existing	14,502.15	10	\$884.85	15%	75%	\$0.01	185.77	174.76	AEG-BEST
College	Cooling	Chiller - Chilled Water Variable-Flow System	HP cool	Existing	399.92	15	\$332.55	15%	75%	\$0.08	703.77	683.62	AEG-BEST
College	Cooling	Chiller - Variable Speed Fans	HP fan	Existing	945.65	15	\$208.36	15%	75%	\$0.02	167.78	159.62	New Jersey TRM
College	Cooling	Water-Cooled Chiller - Condenser Water Reset	ChillCtrl	Existing	0.00	10	\$884.85	15%	75%	\$0.00	0.00	0.00	AEG-BEST
College	Cooling	HVAC - Economizer	HP cool	Existing	87.05	10	\$168.42	18%	75%	\$0.22	404.68	417.11	AEG-BEST
College	Heating	Space Heating - Heat Recovery Ventilator	CFM	Existing	1.55	14	\$5.08	3%	75%	\$0.36	488.48	435.10	7th Power Plan
College	Ventilation	Ventilation - ECM on VAV Boxes	sqft	Existing	0.29	18	\$0.25	15%	20%	\$0.07	43.66	46.77	7th Power Plan
College	Ventilation	Ventilation - Variable Speed Control	sqft	Existing	0.04	15	\$181.39	13%	50%	\$417.74	41.29	48.49	AEG-BEST
College	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.02	15	\$0.25	15%	75%	\$1.35	29.69	33.97	7th Power Plan
College	Cooling	Destratification Fans (HVLS)	Strat Fan	Existing	3,981.71	15	\$7,270.90	15%	25%	\$0.03	99.40	95.66	AEG Research
College	Heating	Destratification Fans (HVLS)	Strat Fan	Existing	24,364.91	15	\$7,270.90	15%	25%	\$0.03	168.56	146.69	AEG Research
College	Cooling	RTU - Maintenance	tonCool	Existing	32.81	3	\$35.00	15%	45%	\$0.28	60.56	67.24	AEG Research
College	Cooling	RTU - Advanced Controls	sqft	Existing	0.11	15	\$0.07	15%	45%	\$0.06	46.72	45.52	7th Power Plan
College	Cooling	RTU - Evaporative Precooler	tonCool	Existing	66.51	15	\$681.62	15%	75%	\$0.87	216.33	222.08	AEG Research
College	Cooling	Ductless Mini Split Heat Pump	tonCool	Existing	152.64	15	\$3,359.26	15%	25%	\$0.40	5.80	6.29	7th Power Plan
College	Heating	Ductless Mini Split Heat Pump	tonCool	Existing	642.70	15	\$3,359.26	15%	25%	\$0.40	144.66	134.06	7th Power Plan
College	Cooling	Thermostat - WiFi/Interactive	sqft	Existing	0.45	5	\$0.66	30%	40%	\$0.06	115.14	119.40	7th Power Plan
College	Heating	Thermostat - WiFi/Interactive	sqft	Existing	1.50	5	\$0.66	30%	40%	\$0.06	107.22	101.14	7th Power Plan
College	Ventilation	Thermostat - WiFi/Interactive	sqft	Existing	0.21	5	\$0.66	30%	40%	\$0.06	63.49	69.85	7th Power Plan
College	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	Existing	128.28	10	\$8.35	25%	65%	\$0.00	22.10	35.38	Illinois TRM

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College	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	Existing	132.89	10	\$11.64	25%	65%	-\$0.07	11.40	18.42	7th Power Plan
College	Water Heating	Water Heater - High Efficiency Circulation Pump	WHUnits	Existing	63.00	15	\$36.75	15%	25%	\$0.03	4.52	6.34	Hawaii TRM
College	Water Heating	Water Heater - Pipe Insulation	PipeFeet	Existing	578.60	15	\$14.88	16%	75%	\$0.00	62.53	92.43	AEG-BEST
College	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	Existing	87.65	4	\$144.04	25%	65%	-\$0.22	14.65	23.74	7th Power Plan
College	Water Heating	Water Heater - Thermostat Setback	WHUnits	Existing	63.03	2	\$5.00	15%	75%	\$0.02	29.75	47.59	Illinois TRM
College	Water Heating	Water Heater - Solar System	PipeFeet	Existing	1,989.41	20	\$215.28	1%	30%	\$0.01	104.10	157.47	AEG-BEST
College	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.43	15	\$0.35	3%	23%	\$0.06	305.52	354.00	7th Power Plan
College	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.59	15	\$0.58	3%	23%	\$0.07	411.02	487.00	7th Power Plan
College	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	Existing	357.98	15	\$54.41	1%	3%	\$0.01	8.53	10.80	7th Power Plan
College	Interior Lighting	Interior Lighting - Timeclocks and Timers	occ sens	Existing	0.00	8	\$111.67	7%	15%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
College	Interior Lighting	Interior Lighting - Skylights	1000 sqft	Existing	0.00	15	\$1,006.35	15%	30%	\$0.00	0.00	0.00	AEG Research
College	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	1000 sqft	Existing	284.30	16	\$1,807.69	5%	15%	\$0.46	78.72	108.17	7th Power Plan
College	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	Existing	2,988.26	11	\$30.80	15%	50%	\$0.00	308.22	382.04	Illinois TRM
College	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	ELtg Watts	Existing	0.42	8	\$0.63	15%	25%	\$0.17	100.75	136.29	7th Power Plan
College	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fxt	Existing	39.02	8	\$55.10	15%	25%	\$0.16	55.01	73.24	Pacific Gas and Electric Research
College	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fxt	Existing	44.98	7	\$3,400.00	15%	30%	\$8.72	92.27	131.27	AEG Research
College	Refrigeration	Refrigeration - Anti-Sweat Heater	Fridge Feet	Existing	12.49	8	\$48.18	4%	25%	\$0.58	1.38	1.72	7th Power Plan
College	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	Existing	28.28	4	\$10.44	4%	25%	\$0.09	3.17	3.27	Michigan Energy Measures Database
College	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	Existing	257.80	16	\$165.20	4%	25%	\$0.07	4.71	4.93	7th Power Plan

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College	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	Existing	22.79	15	\$335.85	0%	0%	\$1.52	0.00	0.00	7th Power Plan
College	Refrigeration	Refrigeration - Strip Curtain	Walkin Door	Existing	18.02	2	\$10.41	4%	25%	\$0.27	1.23	1.31	7th Power Plan
College	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	Existing	0.35	15	\$45.43	2%	13%	\$12.65	6.59	6.90	Annual Energy Outlook, 2015
College	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	Existing	7.64	15	\$313.82	2%	13%	\$4.21	12.28	12.32	Annual Energy Outlook, 2015
College	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	Existing	167.29	10	\$506.05	4%	25%	\$0.39	3.03	3.24	Vermont TRM
College	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	Existing	7.49	6	\$45.41	0%	0%	\$1.11	0.00	0.00	7th Power Plan
College	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	Existing	0.60	8	\$3.72	0%	0%	\$0.92	0.00	0.00	7th Power Plan
College	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	Existing	143.29	5	\$45.85	0%	0%	\$0.07	0.00	0.00	Illinois TRM
College	Refrigeration	Grocery - ECMs for Display Cases	Fridge Case	Existing	31.35	16	\$165.20	4%	25%	\$0.53	1.21	1.19	7th Power Plan
College	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	Existing	1,410.34	5	\$187.94	25%	75%	\$0.03	16.85	15.03	Illinois TRM
College	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	Existing	3,106.51	18	\$8,526.67	25%	50%	\$0.22	93.27	101.42	7th Power Plan
College	Office Equipment	Office Equipment - Smart Power Strips	Smart Strip	Existing	30.22	4	\$41.63	10%	50%	\$0.32	87.33	72.08	7th Power Plan
College	Cooling	Lodging - Guest Room Controls	LodgUnit	Existing	141.11	15	\$260.00	0%	0%	\$10.00	0.00	0.00	AEG-BEST
College	Heating	Lodging - Guest Room Controls	LodgUnit	Existing	-361.12	15	\$260.00	0%	0%	\$10.00	0.00	0.00	AEG-BEST
College	Office Equipment	Data Center - Best Practice Measures	sqft	Existing	0.01	5	\$0.00	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
College	Cooling	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.01	0%	0%	\$0.03	0.00	0.00	com-datacenters-7p_v5p.xlsx
College	Ventilation	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.01	0%	0%	\$0.03	0.00	0.00	com-datacenters-7p_v5p.xlsx
College	Interior Lighting	Data Center - Commercially Available Measures	sqft	Existing	0.03	8	\$0.01	0%	0%	\$0.03	0.00	0.00	com-datacenters-7p_v5p.xlsx
College	Office Equipment	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.01	0%	0%	\$0.03	0.00	0.00	com-datacenters-7p_v5p.xlsx

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College	Cooling	Data Center - Cutting Edge Measures	sqft	Existing	0.04	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
College	Office Equipment	Data Center - Cutting Edge Measures	sqft	Existing	0.00	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
College	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	Existing	2,452.39	18	\$4,092.80	0%	5%	\$0.13	12.21	13.26	7th Power Plan
College	Miscellaneous	Pool Pump - Timer	perBldg	Existing	545.09	10	\$85.22	15%	75%	\$0.02	30.44	27.50	Ontario Power TRM
College	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	Existing	4,171.64	6	\$35.93	1%	3%	\$0.00	31.49	28.76	7th Power Plan
College	Cooling	Advanced New Construction Designs	sqft	Existing	0.94	25	\$4.11	0%	0%	\$0.05	0.00	0.00	AEG Research
College	Heating	Advanced New Construction Designs	sqft	Existing	3.13	25	\$4.11	0%	0%	\$0.05	0.00	0.00	AEG Research
College	Ventilation	Advanced New Construction Designs	sqft	Existing	0.43	25	\$4.11	0%	0%	\$0.05	0.00	0.00	AEG Research
College	Water Heating	Advanced New Construction Designs	sqft	Existing	0.43	25	\$4.11	0%	0%	\$0.05	0.00	0.00	AEG Research
College	Interior Lighting	Advanced New Construction Designs	sqft	Existing	0.81	25	\$4.11	0%	0%	\$0.05	0.00	0.00	AEG Research
College	Exterior Lighting	Advanced New Construction Designs	sqft	Existing	0.23	25	\$4.11	0%	0%	\$0.05	0.00	0.00	AEG Research
College	Cooling	Strategic Energy Management	sqft	Existing	0.14	3	\$0.41	3%	29%	\$0.12	95.74	106.01	AEG Research
College	Heating	Strategic Energy Management	sqft	Existing	0.45	3	\$0.41	3%	29%	\$0.12	90.67	85.99	AEG Research
College	Ventilation	Strategic Energy Management	sqft	Existing	0.07	3	\$0.41	3%	29%	\$0.12	54.41	62.50	AEG Research
College	Water Heating	Strategic Energy Management	sqft	Existing	0.07	3	\$0.41	3%	29%	\$0.12	17.83	29.07	AEG Research
College	Interior Lighting	Strategic Energy Management	sqft	Existing	0.12	3	\$0.41	3%	29%	\$0.12	90.06	123.72	AEG Research
College	Exterior Lighting	Strategic Energy Management	sqft	Existing	0.03	3	\$0.41	3%	29%	\$0.12	24.55	34.24	AEG Research
College	Refrigeration	Strategic Energy Management	sqft	Existing	0.01	3	\$0.41	3%	29%	\$0.12	7.60	6.21	AEG Research
College	Office Equipment	Strategic Energy Management	sqft	Existing	0.04	3	\$0.41	3%	29%	\$0.12	37.17	31.21	AEG Research
College	Cooling	Commissioning	sqft	Existing	0.18	3	\$0.95	0%	0%	\$0.23	0.00	0.00	AEG Research

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College	Heating	Commissioning	sqft	Existing	0.60	3	\$0.95	0%	0%	\$0.23	0.00	0.00	AEG Research
College	Ventilation	Commissioning	sqft	Existing	0.09	3	\$0.95	0%	0%	\$0.23	0.00	0.00	AEG Research
College	Water Heating	Commissioning	sqft	Existing	0.03	3	\$0.95	0%	0%	\$0.23	0.00	0.00	AEG Research
College	Interior Lighting	Commissioning	sqft	Existing	0.14	3	\$0.95	0%	0%	\$0.23	0.00	0.00	AEG Research
College	Exterior Lighting	Commissioning	sqft	Existing	0.04	3	\$0.95	0%	0%	\$0.23	0.00	0.00	AEG Research
College	Refrigeration	Commissioning	sqft	Existing	0.02	3	\$0.95	0%	0%	\$0.23	0.00	0.00	AEG Research
College	Cooling	Retrocommissioning	sqft	Existing	0.19	3	\$0.60	10%	46%	\$0.15	181.19	202.16	AEG Research
College	Heating	Retrocommissioning	sqft	Existing	0.62	3	\$0.60	10%	46%	\$0.15	171.61	163.96	AEG Research
College	Ventilation	Retrocommissioning	sqft	Existing	0.09	3	\$0.60	10%	46%	\$0.15	102.97	119.17	AEG Research
College	Water Heating	Retrocommissioning	sqft	Existing	0.03	3	\$0.60	10%	46%	\$0.15	11.25	18.48	AEG Research
College	Interior Lighting	Retrocommissioning	sqft	Existing	0.14	3	\$0.60	10%	46%	\$0.15	142.04	196.63	AEG Research
College	Exterior Lighting	Retrocommissioning	sqft	Existing	0.04	3	\$0.60	10%	46%	\$0.15	38.72	54.41	AEG Research
College	Refrigeration	Retrocommissioning	sqft	Existing	0.02	3	\$0.60	10%	46%	\$0.15	23.98	19.74	AEG Research
College	Interior Lighting	Fruit Storage - Lighting Controls	sqft	Existing	0.10	10	\$0.09	0%	0%	\$0.08	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
College	Refrigeration	Fruit Storage Refrigeration Retrofit	sqft	Existing	0.06	10	\$1.09	0%	0%	\$2.34	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
College	Refrigeration	Fruit Storage Refrigeration Tuneup	sqft	Existing	0.01	3	\$0.23	0%	0%	\$4.80	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
College	Refrigeration	Fruit Storage Retrofit - CO2 Scrub	sqft	Existing	0.03	10	\$3.13	0%	0%	\$13.89	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
College	Refrigeration	Fruit Storage Retrofit - Membrane	sqft	Existing	0.01	10	\$0.68	0%	0%	\$15.07	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
College	Cooling	Insulation - Ceiling	sqft roof	New	0.00	45	\$1.28	15%	50%	\$0.56	0.00	0.00	Building Energy Simulation Tool
College	Heating	Insulation - Ceiling	sqft roof	New	0.15	45	\$1.28	15%	50%	\$0.56	22.50	21.07	Building Energy Simulation Tool
College	Ventilation	Insulation - Ceiling	sqft roof	New	0.02	45	\$1.28	15%	50%	\$0.56	13.43	14.15	Building Energy Simulation Tool
College	Cooling	Insulation - Ducting	sqft duct	New	0.40	20	\$0.84	15%	50%	\$0.00	114.77	109.54	Building Energy Simulation Tool

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College	Heating	Insulation - Ducting	sqft duct	New	0.00	20	\$0.84	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
College	Ventilation	Insulation - Ducting	sqft duct	New	0.00	20	\$0.84	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
College	Cooling	Building Shell - Cool Roofs	sqft roof	New	0.14	20	\$0.78	45%	50%	\$0.93	11.20	10.74	Building Energy Simulation Tool
College	Heating	Building Shell - Cool Roofs	sqft roof	New	-0.07	20	\$0.78	45%	50%	\$0.93	-1.43	-1.33	Building Energy Simulation Tool
College	Ventilation	Building Shell - Cool Roofs	sqft roof	New	-0.01	20	\$0.78	45%	50%	\$0.93	-0.86	-0.89	Building Energy Simulation Tool
College	Cooling	Insulation - Wall Cavity	sqft wall	New	-0.03	45	\$0.78	15%	50%	\$0.82	-5.33	-5.11	Building Energy Simulation Tool
College	Heating	Insulation - Wall Cavity	sqft wall	New	0.09	45	\$0.78	15%	50%	\$0.82	4.40	4.08	Building Energy Simulation Tool
College	Ventilation	Insulation - Wall Cavity	sqft wall	New	0.01	45	\$0.78	15%	50%	\$0.82	2.65	2.75	Building Energy Simulation Tool
College	Cooling	HVAC - Duct Repair and Sealing	tonCool	New	19.45	18	\$0.57	15%	35%	\$0.06	23.51	22.46	Building Energy Simulation Tool
College	Heating	HVAC - Duct Repair and Sealing	tonCool	New	-17.85	18	\$0.57	15%	35%	\$0.06	-5.74	-5.30	Building Energy Simulation Tool
College	Ventilation	HVAC - Duct Repair and Sealing	tonCool	New	-2.18	18	\$0.57	15%	35%	\$0.06	-3.46	-3.60	Building Energy Simulation Tool
College	Cooling	Windows - High Efficiency Glazing	sqft window	New	7.75	30	\$35.93	66%	66%	\$0.05	0.00	0.00	7th Power Plan
College	Heating	Windows - High Efficiency Glazing	sqft window	New	53.19	30	\$35.93	66%	66%	\$0.05	0.00	0.00	7th Power Plan
College	Ventilation	Windows - High Efficiency Glazing	sqft window	New	3.76	30	\$35.93	66%	66%	\$0.05	0.00	0.00	7th Power Plan
College	Cooling	Chiller - Chilled Water Reset	ChillCtrl	New	13,118.57	10	\$884.85	15%	75%	\$0.01	50.27	46.50	AEG-BEST
College	Cooling	Chiller - Chilled Water Variable-Flow System	HP cool	New	369.39	15	\$332.55	15%	75%	\$0.08	243.95	227.07	AEG-BEST
College	Cooling	Chiller - Variable Speed Fans	HP fan	New	862.62	15	\$208.36	15%	75%	\$0.02	56.86	52.88	New Jersey TRM
College	Cooling	Water-Cooled Chiller - Condenser Water Reset	ChillCtrl	New	0.00	10	\$884.85	15%	75%	\$0.00	0.00	0.00	AEG-BEST
College	Cooling	HVAC - Economizer	HP cool	New	79.18	10	\$168.42	18%	75%	\$0.23	112.79	108.43	AEG-BEST

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College	Heating	Space Heating - Heat Recovery Ventilator	CFM	New	1.43	14	\$5.08	6%	75%	\$0.39	150.41	134.28	7th Power Plan
College	Ventilation	Ventilation - ECM on VAV Boxes	sqft	New	0.24	18	\$0.25	15%	20%	\$0.07	23.52	24.43	7th Power Plan
College	Ventilation	Ventilation - Variable Speed Control	sqft	New	0.03	15	\$181.39	19%	50%	\$414.91	12.69	13.70	AEG-BEST
College	Ventilation	Ventilation - Demand Controlled	sqft	New	0.01	15	\$0.25	15%	75%	\$1.34	10.52	11.39	7th Power Plan
College	Cooling	Destratification Fans (HVLS)	Strat Fan	New	3,541.35	15	\$7,270.90	15%	25%	\$0.03	33.03	30.71	AEG Research
College	Heating	Destratification Fans (HVLS)	Strat Fan	New	22,570.17	15	\$7,270.90	15%	25%	\$0.03	55.92	48.70	AEG Research
College	Cooling	RTU - Maintenance	tonCool	New	29.90	3	\$35.00	15%	45%	\$0.31	6.12	6.12	AEG Research
College	Cooling	RTU - Advanced Controls	sqft	New	0.09	15	\$0.07	15%	45%	\$0.07	23.32	21.98	7th Power Plan
College	Cooling	RTU - Evaporative Precooler	tonCool	New	60.36	15	\$681.62	15%	75%	\$0.96	138.78	132.89	AEG Research
College	Cooling	Ductless Mini Split Heat Pump	tonCool	New	130.52	15	\$3,359.26	15%	25%	\$0.44	2.40	2.28	7th Power Plan
College	Heating	Ductless Mini Split Heat Pump	tonCool	New	618.49	15	\$3,359.26	15%	25%	\$0.44	61.77	55.55	7th Power Plan
College	Cooling	Thermostat - WiFi/Interactive	sqft	New	0.42	5	\$0.66	30%	40%	\$0.06	8.40	8.15	7th Power Plan
College	Heating	Thermostat - WiFi/Interactive	sqft	New	1.42	5	\$0.66	30%	40%	\$0.06	7.55	6.59	7th Power Plan
College	Ventilation	Thermostat - WiFi/Interactive	sqft	New	0.18	5	\$0.66	30%	40%	\$0.06	4.59	5.02	7th Power Plan
College	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	New	117.87	10	\$8.35	25%	65%	\$0.00	6.04	8.53	Illinois TRM
College	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	New	122.84	10	\$11.64	25%	65%	-\$0.07	3.15	4.45	7th Power Plan
College	Water Heating	Water Heater - High Efficiency Circulation Pump	WHUnits	New	58.42	15	\$36.75	15%	25%	\$0.03	2.22	2.69	Hawaii TRM
College	Water Heating	Water Heater - Pipe Insulation	PipeFeet	New	515.20	15	\$14.88	1%	75%	\$0.00	27.78	37.28	AEG-BEST
College	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	New	80.83	4	\$144.04	25%	65%	-\$0.22	1.66	2.54	7th Power Plan
College	Water Heating	Water Heater - Thermostat Setback	WHUnits	New	57.45	2	\$5.00	15%	75%	\$0.02	1.37	2.17	Illinois TRM
College	Water Heating	Water Heater - Solar System	PipeFeet	New	1,787.86	20	\$215.28	1%	30%	\$0.01	38.80	51.84	AEG-BEST

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College	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.41	15	\$0.35	11%	23%	\$0.06	172.76	187.47	7th Power Plan
College	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.57	15	\$0.58	11%	23%	\$0.07	237.43	259.12	7th Power Plan
College	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	New	342.32	15	\$54.41	1%	3%	\$0.01	2.75	3.18	7th Power Plan
College	Interior Lighting	Interior Lighting - Timeclocks and Timers	occ sens	New	0.00	8	\$111.67	7%	15%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
College	Interior Lighting	Interior Lighting - Skylights	1000 sqft	New	0.00	15	\$1,006.35	18%	33%	\$0.00	0.00	0.00	AEG Research
College	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	1000 sqft	New	264.59	16	\$1,807.69	5%	15%	\$0.46	30.29	35.81	7th Power Plan
College	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	New	2,762.27	11	\$30.80	15%	50%	\$0.00	95.36	108.79	Illinois TRM
College	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	ELtg Watts	New	0.38	8	\$0.63	15%	25%	\$0.17	24.34	30.72	7th Power Plan
College	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	New	35.00	8	\$55.10	15%	25%	\$0.16	13.01	16.45	Pacific Gas and Electric Research
College	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	New	42.46	7	\$3,400.00	15%	30%	\$8.78	21.09	26.66	AEG Research
College	Refrigeration	Refrigeration - Anti-Sweat Heater	Fridge Feet	New	10.36	8	\$48.18	4%	25%	\$0.72	0.29	0.32	7th Power Plan
College	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	New	25.38	4	\$10.44	4%	25%	\$0.11	0.31	0.28	Michigan Energy Measures Database
College	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	New	229.22	16	\$165.20	4%	25%	\$0.07	1.72	1.61	7th Power Plan
College	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	New	21.79	15	\$335.85	0%	0%	\$1.63	0.00	0.00	7th Power Plan
College	Refrigeration	Refrigeration - Strip Curtain	Walkin Door	New	17.03	2	\$10.41	4%	25%	\$0.29	0.04	0.04	7th Power Plan
College	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	New	0.35	15	\$45.43	2%	13%	\$13.61	2.51	2.26	Annual Energy Outlook, 2015
College	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	New	7.32	15	\$313.82	2%	13%	\$4.53	4.38	3.96	Annual Energy Outlook, 2015
College	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	New	152.00	10	\$506.05	4%	25%	\$0.44	0.86	0.80	Vermont TRM
College	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	New	7.14	6	\$45.41	0%	0%	\$1.20	0.00	0.00	7th Power Plan

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College	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	New	0.58	8	\$3.72	0%	0%	\$0.99	0.00	0.00	7th Power Plan
College	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	New	137.84	5	\$45.85	0%	0%	\$0.07	0.00	0.00	Illinois TRM
College	Refrigeration	Grocery - ECMs for Display Cases	Fridge Case	New	29.72	16	\$165.20	4%	25%	\$0.57	0.43	0.39	7th Power Plan
College	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	New	1,395.95	5	\$187.94	25%	75%	\$0.03	2.20	1.84	Illinois TRM
College	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	New	2,573.18	18	\$8,526.67	25%	50%	\$0.21	51.33	53.41	7th Power Plan
College	Office Equipment	Office Equipment - Smart Power Strips	Smart Strip	New	29.78	4	\$41.63	10%	50%	\$0.32	9.18	7.27	7th Power Plan
College	Cooling	Lodging - Guest Room Controls	LodgUnit	New	124.48	15	\$260.00	0%	0%	\$10.00	0.00	0.00	AEG-BEST
College	Heating	Lodging - Guest Room Controls	LodgUnit	New	-358.08	15	\$260.00	0%	0%	\$10.00	0.00	0.00	AEG-BEST
College	Office Equipment	Data Center - Best Practice Measures	sqft	New	0.01	5	\$0.00	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
College	Cooling	Data Center - Commercially Available Measures	sqft	New	0.01	8	\$0.01	0%	0%	\$0.03	0.00	0.00	com-datacenters-7p_v5p.xlsx
College	Ventilation	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.01	0%	0%	\$0.03	0.00	0.00	com-datacenters-7p_v5p.xlsx
College	Interior Lighting	Data Center - Commercially Available Measures	sqft	New	0.03	8	\$0.01	0%	0%	\$0.03	0.00	0.00	com-datacenters-7p_v5p.xlsx
College	Office Equipment	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.01	0%	0%	\$0.03	0.00	0.00	com-datacenters-7p_v5p.xlsx
College	Cooling	Data Center - Cutting Edge Measures	sqft	New	0.04	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
College	Office Equipment	Data Center - Cutting Edge Measures	sqft	New	0.00	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
College	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	New	2,030.14	18	\$4,092.80	0%	5%	\$0.13	6.71	6.98	7th Power Plan
College	Miscellaneous	Pool Pump - Timer	perBldg	New	543.38	10	\$85.22	15%	75%	\$0.02	6.95	6.09	Ontario Power TRM
College	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	New	4,152.96	6	\$35.93	1%	3%	\$0.00	3.24	2.83	7th Power Plan
College	Cooling	Advanced New Construction Designs	sqft	New	0.86	25	\$4.11	10%	30%	\$0.05	313.87	299.23	AEG Research

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College	Heating	Advanced New Construction Designs	sqft	New	2.95	25	\$4.11	10%	30%	\$0.05	284.44	263.32	AEG Research
College	Ventilation	Advanced New Construction Designs	sqft	New	0.36	25	\$4.11	10%	30%	\$0.05	169.86	177.80	AEG Research
College	Water Heating	Advanced New Construction Designs	sqft	New	0.40	25	\$4.11	10%	30%	\$0.05	59.64	68.97	AEG Research
College	Interior Lighting	Advanced New Construction Designs	sqft	New	0.79	25	\$4.11	10%	30%	\$0.05	296.53	320.62	AEG Research
College	Exterior Lighting	Advanced New Construction Designs	sqft	New	0.21	25	\$4.11	10%	30%	\$0.05	79.40	88.40	AEG Research
College	Cooling	Strategic Energy Management	sqft	New	0.13	3	\$0.39	3%	29%	\$0.12	7.17	7.13	AEG Research
College	Heating	Strategic Energy Management	sqft	New	0.43	3	\$0.39	3%	29%	\$0.12	6.49	5.67	AEG Research
College	Ventilation	Strategic Energy Management	sqft	New	0.05	3	\$0.39	3%	29%	\$0.12	3.97	4.35	AEG Research
College	Water Heating	Strategic Energy Management	sqft	New	0.06	3	\$0.39	3%	29%	\$0.12	1.40	2.18	AEG Research
College	Interior Lighting	Strategic Energy Management	sqft	New	0.12	3	\$0.39	3%	29%	\$0.12	6.95	9.13	AEG Research
College	Exterior Lighting	Strategic Energy Management	sqft	New	0.03	3	\$0.39	3%	29%	\$0.12	1.84	2.44	AEG Research
College	Refrigeration	Strategic Energy Management	sqft	New	0.01	3	\$0.39	3%	29%	\$0.12	0.52	0.38	AEG Research
College	Office Equipment	Strategic Energy Management	sqft	New	0.04	3	\$0.39	3%	29%	\$0.12	2.75	2.18	AEG Research
College	Cooling	Commissioning	sqft	New	0.18	3	\$0.89	10%	46%	\$0.23	13.73	13.64	AEG Research
College	Heating	Commissioning	sqft	New	0.60	3	\$0.89	10%	46%	\$0.23	12.44	10.84	AEG Research
College	Ventilation	Commissioning	sqft	New	0.07	3	\$0.89	10%	46%	\$0.23	7.61	8.32	AEG Research
College	Water Heating	Commissioning	sqft	New	0.03	3	\$0.89	10%	46%	\$0.23	0.89	1.39	AEG Research
College	Interior Lighting	Commissioning	sqft	New	0.14	3	\$0.89	10%	46%	\$0.23	11.09	14.56	AEG Research
College	Exterior Lighting	Commissioning	sqft	New	0.04	3	\$0.89	10%	46%	\$0.23	2.93	3.90	AEG Research
College	Refrigeration	Commissioning	sqft	New	0.02	3	\$0.89	10%	46%	\$0.23	1.66	1.21	AEG Research
College	Cooling	Retrocommissioning	sqft	New	0.18	3	\$0.57	0%	0%	\$0.14	0.00	0.00	AEG Research
College	Heating	Retrocommissioning	sqft	New	0.60	3	\$0.57	0%	0%	\$0.14	0.00	0.00	AEG Research

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College	Ventilation	Retrocommissioning	sqft	New	0.07	3	\$0.57	0%	0%	\$0.14	0.00	0.00	AEG Research
College	Water Heating	Retrocommissioning	sqft	New	0.03	3	\$0.57	0%	0%	\$0.14	0.00	0.00	AEG Research
College	Interior Lighting	Retrocommissioning	sqft	New	0.14	3	\$0.57	0%	0%	\$0.14	0.00	0.00	AEG Research
College	Exterior Lighting	Retrocommissioning	sqft	New	0.04	3	\$0.57	0%	0%	\$0.14	0.00	0.00	AEG Research
College	Refrigeration	Retrocommissioning	sqft	New	0.02	3	\$0.57	0%	0%	\$0.14	0.00	0.00	AEG Research
College	Interior Lighting	Fruit Storage - Lighting Controls	sqft	New	0.10	10	\$0.09	0%	0%	\$0.08	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
College	Refrigeration	Fruit Storage Refrigeration Retrofit	sqft	New	0.05	10	\$1.09	0%	0%	\$2.64	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
College	Refrigeration	Fruit Storage Refrigeration Tuneup	sqft	New	0.01	3	\$0.23	0%	0%	\$5.42	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
College	Refrigeration	Fruit Storage Retrofit - CO2 Scrub	sqft	New	0.03	10	\$3.13	0%	0%	\$15.66	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
College	Refrigeration	Fruit Storage Retrofit - Membrane	sqft	New	0.01	10	\$0.68	0%	0%	\$16.99	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
School	Cooling	Insulation - Ceiling	sqft roof	Existing	0.01	45	\$1.28	15%	35%	\$0.19	3.25	3.26	Building Energy Simulation Tool
School	Heating	Insulation - Ceiling	sqft roof	Existing	0.46	45	\$1.28	15%	35%	\$0.19	37.64	34.39	Building Energy Simulation Tool
School	Ventilation	Insulation - Ceiling	sqft roof	Existing	0.06	45	\$1.28	15%	35%	\$0.19	22.74	24.42	Building Energy Simulation Tool
School	Cooling	Insulation - Ducting	sqft duct	Existing	0.24	20	\$0.84	15%	35%	\$0.00	33.02	33.16	Building Energy Simulation Tool
School	Heating	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.84	15%	35%	\$0.00	0.00	0.00	Building Energy Simulation Tool
School	Ventilation	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.84	15%	35%	\$0.00	0.00	0.00	Building Energy Simulation Tool
School	Cooling	Building Shell - Cool Roofs	sqft roof	Existing	0.19	20	\$0.78	45%	50%	\$23.74	13.79	13.25	Building Energy Simulation Tool
School	Heating	Building Shell - Cool Roofs	sqft roof	Existing	-0.17	20	\$0.78	45%	50%	\$23.74	-3.55	-3.24	Building Energy Simulation Tool
School	Ventilation	Building Shell - Cool Roofs	sqft roof	Existing	-0.02	20	\$0.78	45%	50%	\$23.74	-2.17	-2.31	Building Energy Simulation Tool
School	Cooling	Insulation - Wall Cavity	sqft wall	Existing	-0.18	45	\$0.78	15%	35%	\$0.13	-15.78	-15.19	Building Energy Simulation Tool

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School	Heating	Insulation - Wall Cavity	sqft wall	Existing	0.59	45	\$0.78	15%	35%	\$0.13	15.01	13.67	Building Energy Simulation Tool
School	Ventilation	Insulation - Wall Cavity	sqft wall	Existing	0.07	45	\$0.78	15%	35%	\$0.13	9.15	9.75	Building Energy Simulation Tool
School	Cooling	HVAC - Duct Repair and Sealing	tonCool	Existing	11.81	18	\$0.57	15%	50%	\$0.03	23.94	22.89	Building Energy Simulation Tool
School	Heating	HVAC - Duct Repair and Sealing	tonCool	Existing	-9.49	18	\$0.57	15%	50%	\$0.03	-5.39	-4.91	Building Energy Simulation Tool
School	Ventilation	HVAC - Duct Repair and Sealing	tonCool	Existing	-1.17	18	\$0.57	15%	50%	\$0.03	-3.28	-3.50	Building Energy Simulation Tool
School	Cooling	Windows - High Efficiency Glazing	sqft window	Existing	4.45	30	\$35.93	48%	48%	\$0.08	0.00	0.00	7th Power Plan
School	Heating	Windows - High Efficiency Glazing	sqft window	Existing	33.08	30	\$35.93	48%	48%	\$0.08	0.00	0.00	7th Power Plan
School	Ventilation	Windows - High Efficiency Glazing	sqft window	Existing	2.35	30	\$35.93	48%	48%	\$0.08	0.00	0.00	7th Power Plan
School	Cooling	Chiller - Chilled Water Reset	ChillCtrl	Existing	7,611.28	10	\$884.85	15%	75%	\$0.01	49.70	46.60	AEG-BEST
School	Cooling	Chiller - Chilled Water Variable-Flow System	HP cool	Existing	211.43	15	\$332.55	15%	75%	\$0.15	189.93	183.09	AEG-BEST
School	Cooling	Chiller - Variable Speed Fans	HP fan	Existing	496.64	15	\$208.36	15%	75%	\$0.04	44.93	42.58	New Jersey TRM
School	Cooling	Water-Cooled Chiller - Condenser Water Reset	ChillCtrl	Existing	0.00	10	\$884.85	15%	75%	\$0.00	0.00	0.00	AEG-BEST
School	Cooling	HVAC - Economizer	HP cool	Existing	45.98	10	\$168.42	18%	75%	\$0.41	115.69	118.28	AEG-BEST
School	Heating	Space Heating - Heat Recovery Ventilator	CFM	Existing	1.05	14	\$5.08	3%	75%	\$0.53	156.61	139.09	7th Power Plan
School	Ventilation	Ventilation - ECM on VAV Boxes	sqft	Existing	0.15	18	\$0.25	15%	20%	\$0.13	14.99	16.01	7th Power Plan
School	Ventilation	Ventilation - Variable Speed Control	sqft	Existing	0.02	15	\$181.39	13%	50%	\$810.31	14.16	16.49	AEG-BEST
School	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.01	15	\$0.25	15%	75%	\$2.62	10.15	11.54	7th Power Plan
School	Cooling	Destratification Fans (HVLS)	Strat Fan	Existing	2,025.45	15	\$7,270.90	15%	15%	\$0.05	0.00	0.00	AEG Research
School	Heating	Destratification Fans (HVLS)	Strat Fan	Existing	13,922.41	15	\$7,270.90	15%	15%	\$0.05	0.00	0.00	AEG Research
School	Cooling	RTU - Maintenance	tonCool	Existing	17.40	3	\$35.00	15%	45%	\$0.54	16.42	17.97	AEG Research
School	Cooling	RTU - Advanced Controls	sqft	Existing	0.10	15	\$0.07	15%	45%	\$0.06	23.90	23.12	7th Power Plan

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School	Cooling	RTU - Evaporative Precooler	tonCool	Existing	35.25	15	\$681.62	15%	75%	\$1.67	59.36	60.52	AEG Research
School	Cooling	Ductless Mini Split Heat Pump	tonCool	Existing	80.88	15	\$3,359.26	15%	25%	\$0.67	1.58	1.69	7th Power Plan
School	Heating	Ductless Mini Split Heat Pump	tonCool	Existing	409.64	15	\$3,359.26	15%	25%	\$0.67	38.83	35.58	7th Power Plan
School	Cooling	Thermostat - WiFi/Interactive	sqft	Existing	0.23	5	\$0.66	30%	40%	\$0.11	32.36	33.34	7th Power Plan
School	Heating	Thermostat - WiFi/Interactive	sqft	Existing	0.87	5	\$0.66	30%	40%	\$0.11	34.72	32.67	7th Power Plan
School	Ventilation	Thermostat - WiFi/Interactive	sqft	Existing	0.11	5	\$0.66	30%	40%	\$0.11	21.87	23.95	7th Power Plan
School	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	Existing	68.12	10	\$8.35	25%	65%	\$0.01	7.00	11.06	Illinois TRM
School	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	Existing	70.58	10	\$11.64	25%	65%	-\$0.13	3.61	5.76	7th Power Plan
School	Water Heating	Water Heater - High Efficiency Circulation Pump	WHUnits	Existing	63.64	15	\$36.75	15%	25%	\$0.03	1.45	2.00	Hawaii TRM
School	Water Heating	Water Heater - Pipe Insulation	PipeFeet	Existing	307.05	15	\$14.88	16%	75%	\$0.00	19.77	28.95	AEG-BEST
School	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	Existing	46.56	4	\$144.04	25%	65%	-\$0.41	4.65	7.44	7th Power Plan
School	Water Heating	Water Heater - Thermostat Setback	WHUnits	Existing	63.66	2	\$5.00	15%	75%	\$0.02	9.44	14.91	Illinois TRM
School	Water Heating	Water Heater - Solar System	PipeFeet	Existing	1,055.98	20	\$215.28	1%	30%	\$0.01	32.95	49.32	AEG-BEST
School	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.28	15	\$0.35	3%	23%	\$0.10	130.96	151.31	7th Power Plan
School	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.38	15	\$0.58	3%	23%	\$0.11	176.42	208.24	7th Power Plan
School	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	Existing	235.77	15	\$54.41	1%	3%	\$0.02	3.67	4.72	7th Power Plan
School	Interior Lighting	Interior Lighting - Timeclocks and Timers	occ sens	Existing	0.00	8	\$111.67	7%	15%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
School	Interior Lighting	Interior Lighting - Skylights	1000 sqft	Existing	0.00	15	\$1,006.35	15%	30%	\$0.00	0.00	0.00	AEG Research
School	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	1000 sqft	Existing	195.96	16	\$1,807.69	5%	15%	\$0.66	35.79	49.03	7th Power Plan

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School	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	Existing	2,059.38	11	\$30.80	15%	50%	\$0.00	139.80	173.23	Illinois TRM
School	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	ELtg Watts	Existing	0.37	8	\$0.63	15%	25%	\$0.19	48.43	66.53	7th Power Plan
School	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	Existing	35.58	8	\$55.10	15%	25%	\$0.18	26.43	35.75	Pacific Gas and Electric Research
School	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	Existing	41.13	7	\$3,400.00	15%	30%	\$9.54	44.56	64.15	AEG Research
School	Refrigeration	Refrigeration - Anti-Sweat Heater	Fridge Feet	Existing	14.19	8	\$48.18	4%	25%	\$0.51	2.43	3.04	7th Power Plan
School	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	Existing	30.84	4	\$10.44	4%	25%	\$0.09	4.90	5.31	Michigan Energy Measures Database
School	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	Existing	293.19	16	\$165.20	4%	25%	\$0.06	7.26	7.76	7th Power Plan
School	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	Existing	26.08	15	\$335.85	0%	0%	\$1.32	0.00	0.00	7th Power Plan
School	Refrigeration	Refrigeration - Strip Curtain	Walkin Door	Existing	20.89	2	\$10.41	4%	25%	\$0.23	1.85	2.00	7th Power Plan
School	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	Existing	0.40	15	\$45.43	2%	13%	\$11.04	11.41	11.91	Annual Energy Outlook, 2015
School	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	Existing	8.75	15	\$313.82	2%	13%	\$3.68	21.22	21.26	Annual Energy Outlook, 2015
School	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	Existing	190.13	10	\$506.05	4%	25%	\$0.34	4.67	5.11	Vermont TRM
School	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	Existing	8.51	6	\$45.41	0%	0%	\$0.98	0.00	0.00	7th Power Plan
School	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	Existing	0.69	8	\$3.72	0%	0%	\$0.81	0.00	0.00	7th Power Plan
School	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	Existing	162.82	5	\$45.85	0%	0%	\$0.06	0.00	0.00	Illinois TRM
School	Refrigeration	Grocery - ECMs for Display Cases	Fridge Case	Existing	35.62	16	\$165.20	4%	25%	\$0.46	2.13	2.11	7th Power Plan
School	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	Existing	1,410.29	5	\$187.94	25%	75%	\$0.03	28.91	25.78	Illinois TRM
School	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	Existing	1,608.91	18	\$8,526.67	25%	50%	\$0.42	32.12	34.78	7th Power Plan
School	Office Equipment	Office Equipment - Smart Power Strips	Smart Strip	Existing	21.90	4	\$41.63	10%	50%	\$0.44	42.23	34.14	7th Power Plan

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School	Cooling	Lodging - Guest Room Controls	LodgUnit	Existing	74.98	15	\$260.00	0%	0%	\$10.00	0.00	0.00	AEG-BEST
School	Heating	Lodging - Guest Room Controls	LodgUnit	Existing	-231.26	15	\$260.00	0%	0%	\$10.00	0.00	0.00	AEG-BEST
School	Office Equipment	Data Center - Best Practice Measures	sqft	Existing	0.02	5	\$0.00	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
School	Cooling	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.01	0%	0%	\$0.03	0.00	0.00	com-datacenters-7p_v5p.xlsx
School	Ventilation	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.01	0%	0%	\$0.03	0.00	0.00	com-datacenters-7p_v5p.xlsx
School	Interior Lighting	Data Center - Commercially Available Measures	sqft	Existing	0.02	8	\$0.01	0%	0%	\$0.03	0.00	0.00	com-datacenters-7p_v5p.xlsx
School	Office Equipment	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.01	0%	0%	\$0.03	0.00	0.00	com-datacenters-7p_v5p.xlsx
School	Cooling	Data Center - Cutting Edge Measures	sqft	Existing	0.02	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
School	Office Equipment	Data Center - Cutting Edge Measures	sqft	Existing	0.00	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
School	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	Existing	1,268.25	18	\$4,092.80	0%	0%	\$0.25	0.00	0.00	7th Power Plan
School	Miscellaneous	Pool Pump - Timer	perBldg	Existing	627.88	10	\$85.22	15%	75%	\$0.02	1.54	1.39	Ontario Power TRM
School	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	Existing	2,888.45	6	\$35.93	1%	3%	\$0.00	14.49	13.20	7th Power Plan
School	Cooling	Advanced New Construction Designs	sqft	Existing	0.48	25	\$4.11	0%	0%	\$0.09	0.00	0.00	AEG Research
School	Heating	Advanced New Construction Designs	sqft	Existing	1.82	25	\$4.11	0%	0%	\$0.09	0.00	0.00	AEG Research
School	Ventilation	Advanced New Construction Designs	sqft	Existing	0.22	25	\$4.11	0%	0%	\$0.09	0.00	0.00	AEG Research
School	Water Heating	Advanced New Construction Designs	sqft	Existing	0.23	25	\$4.11	0%	0%	\$0.09	0.00	0.00	AEG Research
School	Interior Lighting	Advanced New Construction Designs	sqft	Existing	0.54	25	\$4.11	0%	0%	\$0.09	0.00	0.00	AEG Research
School	Exterior Lighting	Advanced New Construction Designs	sqft	Existing	0.17	25	\$4.11	0%	0%	\$0.09	0.00	0.00	AEG Research
School	Cooling	Strategic Energy Management	sqft	Existing	0.07	3	\$0.25	2%	22%	\$0.12	20.57	22.54	AEG Research

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School	Heating	Strategic Energy Management	sqft	Existing	0.26	3	\$0.25	2%	22%	\$0.12	22.49	21.17	AEG Research
School	Ventilation	Strategic Energy Management	sqft	Existing	0.03	3	\$0.25	2%	22%	\$0.12	14.31	16.33	AEG Research
School	Water Heating	Strategic Energy Management	sqft	Existing	0.03	3	\$0.25	2%	22%	\$0.12	4.36	7.01	AEG Research
School	Interior Lighting	Strategic Energy Management	sqft	Existing	0.08	3	\$0.25	2%	22%	\$0.12	29.98	41.49	AEG Research
School	Exterior Lighting	Strategic Energy Management	sqft	Existing	0.03	3	\$0.25	2%	22%	\$0.12	9.09	12.86	AEG Research
School	Refrigeration	Strategic Energy Management	sqft	Existing	0.02	3	\$0.25	2%	22%	\$0.12	8.98	8.24	AEG Research
School	Office Equipment	Strategic Energy Management	sqft	Existing	0.03	3	\$0.25	2%	22%	\$0.12	13.84	11.37	AEG Research
School	Cooling	Commissioning	sqft	Existing	0.09	3	\$0.56	0%	0%	\$0.22	0.00	0.00	AEG Research
School	Heating	Commissioning	sqft	Existing	0.35	3	\$0.56	0%	0%	\$0.22	0.00	0.00	AEG Research
School	Ventilation	Commissioning	sqft	Existing	0.05	3	\$0.56	0%	0%	\$0.22	0.00	0.00	AEG Research
School	Water Heating	Commissioning	sqft	Existing	0.02	3	\$0.56	0%	0%	\$0.22	0.00	0.00	AEG Research
School	Interior Lighting	Commissioning	sqft	Existing	0.09	3	\$0.56	0%	0%	\$0.22	0.00	0.00	AEG Research
School	Exterior Lighting	Commissioning	sqft	Existing	0.03	3	\$0.56	0%	0%	\$0.22	0.00	0.00	AEG Research
School	Refrigeration	Commissioning	sqft	Existing	0.05	3	\$0.56	0%	0%	\$0.22	0.00	0.00	AEG Research
School	Cooling	Retrocommissioning	sqft	Existing	0.10	3	\$0.35	10%	47%	\$0.14	52.19	57.50	AEG Research
School	Heating	Retrocommissioning	sqft	Existing	0.36	3	\$0.35	10%	47%	\$0.14	57.06	54.00	AEG Research
School	Ventilation	Retrocommissioning	sqft	Existing	0.05	3	\$0.35	10%	47%	\$0.14	36.30	41.67	AEG Research
School	Water Heating	Retrocommissioning	sqft	Existing	0.02	3	\$0.35	10%	47%	\$0.14	3.68	5.96	AEG Research
School	Interior Lighting	Retrocommissioning	sqft	Existing	0.09	3	\$0.35	10%	47%	\$0.14	63.37	88.21	AEG Research
School	Exterior Lighting	Retrocommissioning	sqft	Existing	0.03	3	\$0.35	10%	47%	\$0.14	19.22	27.34	AEG Research
School	Refrigeration	Retrocommissioning	sqft	Existing	0.05	3	\$0.35	10%	47%	\$0.14	37.97	35.04	AEG Research
School	Interior Lighting	Fruit Storage - Lighting Controls	sqft	Existing	0.07	10	\$0.09	0%	0%	\$0.12	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx

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School	Refrigeration	Fruit Storage Refrigeration Retrofit	sqft	Existing	0.15	10	\$1.09	0%	0%	\$0.93	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
School	Refrigeration	Fruit Storage Refrigeration Tuneup	sqft	Existing	0.04	3	\$0.23	0%	0%	\$1.92	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
School	Refrigeration	Fruit Storage Retrofit - CO2 Scrub	sqft	Existing	0.07	10	\$3.13	0%	0%	\$5.54	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
School	Refrigeration	Fruit Storage Retrofit - Membrane	sqft	Existing	0.01	10	\$0.68	0%	0%	\$6.01	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
School	Cooling	Insulation - Ceiling	sqft roof	New	0.00	45	\$1.28	15%	50%	\$0.98	0.00	0.00	Building Energy Simulation Tool
School	Heating	Insulation - Ceiling	sqft roof	New	0.09	45	\$1.28	15%	50%	\$0.98	6.83	6.40	Building Energy Simulation Tool
School	Ventilation	Insulation - Ceiling	sqft roof	New	0.01	45	\$1.28	15%	50%	\$0.98	4.37	4.59	Building Energy Simulation Tool
School	Cooling	Insulation - Ducting	sqft duct	New	0.20	20	\$0.84	15%	50%	\$0.00	30.17	28.80	Building Energy Simulation Tool
School	Heating	Insulation - Ducting	sqft duct	New	0.00	20	\$0.84	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
School	Ventilation	Insulation - Ducting	sqft duct	New	0.00	20	\$0.84	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
School	Cooling	Building Shell - Cool Roofs	sqft roof	New	0.07	20	\$0.78	45%	50%	\$2.03	2.94	2.82	Building Energy Simulation Tool
School	Heating	Building Shell - Cool Roofs	sqft roof	New	-0.04	20	\$0.78	45%	50%	\$2.03	-0.43	-0.40	Building Energy Simulation Tool
School	Ventilation	Building Shell - Cool Roofs	sqft roof	New	0.00	20	\$0.78	45%	50%	\$2.03	-0.28	-0.29	Building Energy Simulation Tool
School	Cooling	Insulation - Wall Cavity	sqft wall	New	-0.02	45	\$0.78	15%	50%	\$1.38	-1.40	-1.34	Building Energy Simulation Tool
School	Heating	Insulation - Wall Cavity	sqft wall	New	0.05	45	\$0.78	15%	50%	\$1.38	1.32	1.22	Building Energy Simulation Tool
School	Ventilation	Insulation - Wall Cavity	sqft wall	New	0.01	45	\$0.78	15%	50%	\$1.38	0.85	0.88	Building Energy Simulation Tool
School	Cooling	HVAC - Duct Repair and Sealing	tonCool	New	8.92	18	\$0.57	15%	35%	\$10.00	5.52	5.32	Building Energy Simulation Tool
School	Heating	HVAC - Duct Repair and Sealing	tonCool	New	-9.60	18	\$0.57	15%	35%	\$10.00	-1.63	-1.51	Building Energy Simulation Tool
School	Ventilation	HVAC - Duct Repair and Sealing	tonCool	New	-1.08	18	\$0.57	15%	35%	\$10.00	-1.06	-1.12	Building Energy Simulation Tool

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
School	Cooling	Windows - High Efficiency Glazing	sqft window	New	3.97	30	\$35.93	66%	66%	\$0.08	0.00	0.00	7th Power Plan
School	Heating	Windows - High Efficiency Glazing	sqft window	New	30.49	30	\$35.93	66%	66%	\$0.08	0.00	0.00	7th Power Plan
School	Ventilation	Windows - High Efficiency Glazing	sqft window	New	1.94	30	\$35.93	66%	66%	\$0.08	0.00	0.00	7th Power Plan
School	Cooling	Chiller - Chilled Water Reset	ChillCtrl	New	6,874.09	10	\$884.85	15%	75%	\$0.02	12.75	11.77	AEG-BEST
School	Cooling	Chiller - Chilled Water Variable-Flow System	HP cool	New	194.15	15	\$332.55	15%	75%	\$0.16	61.97	57.68	AEG-BEST
School	Cooling	Chiller - Variable Speed Fans	HP fan	New	452.11	15	\$208.36	15%	75%	\$0.04	14.42	13.39	New Jersey TRM
School	Cooling	Water-Cooled Chiller - Condenser Water Reset	ChillCtrl	New	0.00	10	\$884.85	15%	75%	\$0.00	0.00	0.00	AEG-BEST
School	Cooling	HVAC - Economizer	HP cool	New	41.87	10	\$168.42	18%	75%	\$0.44	30.67	29.25	AEG-BEST
School	Heating	Space Heating - Heat Recovery Ventilator	CFM	New	0.96	14	\$5.08	6%	75%	\$0.57	45.63	40.65	7th Power Plan
School	Ventilation	Ventilation - ECM on VAV Boxes	sqft	New	0.12	18	\$0.25	15%	20%	\$0.13	7.57	7.87	7th Power Plan
School	Ventilation	Ventilation - Variable Speed Control	sqft	New	0.02	15	\$181.39	19%	50%	\$804.82	4.12	4.42	AEG-BEST
School	Ventilation	Ventilation - Demand Controlled	sqft	New	0.01	15	\$0.25	15%	75%	\$2.60	3.42	3.68	7th Power Plan
School	Cooling	Destratification Fans (HVLS)	Strat Fan	New	1,806.61	15	\$7,270.90	15%	15%	\$0.05	0.00	0.00	AEG Research
School	Heating	Destratification Fans (HVLS)	Strat Fan	New	12,830.83	15	\$7,270.90	15%	15%	\$0.05	0.00	0.00	AEG Research
School	Cooling	RTU - Maintenance	tonCool	New	15.81	3	\$35.00	15%	45%	\$0.59	1.57	1.55	AEG Research
School	Cooling	RTU - Advanced Controls	sqft	New	0.09	15	\$0.07	15%	45%	\$0.07	11.11	10.47	7th Power Plan
School	Cooling	RTU - Evaporative Precooler	tonCool	New	31.91	15	\$681.62	15%	75%	\$1.84	35.59	33.99	AEG Research
School	Cooling	Ductless Mini Split Heat Pump	tonCool	New	68.99	15	\$3,359.26	15%	25%	\$0.73	0.61	0.58	7th Power Plan
School	Heating	Ductless Mini Split Heat Pump	tonCool	New	388.56	15	\$3,359.26	15%	25%	\$0.73	15.45	13.88	7th Power Plan
School	Cooling	Thermostat - WiFi/Interactive	sqft	New	0.22	5	\$0.66	30%	40%	\$0.11	2.22	2.14	7th Power Plan
School	Heating	Thermostat - WiFi/Interactive	sqft	New	0.82	5	\$0.66	30%	40%	\$0.11	2.29	1.99	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
School	Ventilation	Thermostat - WiFi/Interactive	sqft	New	0.09	5	\$0.66	30%	40%	\$0.11	1.49	1.62	7th Power Plan
School	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	New	62.08	10	\$8.35	25%	65%	\$0.01	1.79	2.54	Illinois TRM
School	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	New	64.71	10	\$11.64	25%	65%	-\$0.13	0.94	1.32	7th Power Plan
School	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	New	58.52	15	\$36.75	15%	25%	\$0.03	0.66	0.80	Hawaii TRM
School	Water Heating	Water Heater - Pipe Insulation	PipeFeet	New	271.37	15	\$14.88	1%	75%	\$0.00	8.25	11.08	AEG-BEST
School	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	New	42.77	4	\$144.04	25%	65%	-\$0.41	0.50	0.76	7th Power Plan
School	Water Heating	Water Heater - Thermostat Setback	WHunits	New	58.58	2	\$5.00	15%	75%	\$0.02	0.42	0.65	Illinois TRM
School	Water Heating	Water Heater - Solar System	PipeFeet	New	941.73	20	\$215.28	1%	30%	\$0.01	11.52	15.40	AEG-BEST
School	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.27	15	\$0.35	11%	23%	\$0.10	69.50	75.57	7th Power Plan
School	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.37	15	\$0.58	11%	23%	\$0.11	95.54	104.48	7th Power Plan
School	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	New	224.62	15	\$54.41	1%	3%	\$0.02	1.12	1.30	7th Power Plan
School	Interior Lighting	Interior Lighting - Timeclocks and Timers	occ sens	New	0.00	8	\$111.67	7%	15%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
School	Interior Lighting	Interior Lighting - Skylights	1000 sqft	New	0.00	15	\$1,006.35	18%	33%	\$0.00	0.00	0.00	AEG Research
School	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	1000 sqft	New	182.93	16	\$1,807.69	5%	15%	\$0.66	13.09	15.41	7th Power Plan
School	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	New	1,900.86	11	\$30.80	15%	50%	\$0.00	40.85	46.73	Illinois TRM
School	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	ELtg Watts	New	0.34	8	\$0.63	15%	25%	\$0.19	11.21	14.20	7th Power Plan
School	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fxt	New	32.03	8	\$55.10	15%	25%	\$0.18	5.99	7.61	Pacific Gas and Electric Research
School	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fxt	New	38.87	7	\$3,400.00	15%	30%	\$9.63	9.72	12.33	AEG Research
School	Refrigeration	Refrigeration - Anti-Sweat Heater	Fridge Feet	New	11.85	8	\$48.18	4%	25%	\$0.63	0.50	0.55	7th Power Plan

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School	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	New	27.23	4	\$10.44	4%	25%	\$0.10	0.45	0.44	Michigan Energy Measures Database
School	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	New	257.56	16	\$165.20	4%	25%	\$0.07	2.41	2.31	7th Power Plan
School	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	New	24.88	15	\$335.85	0%	0%	\$1.43	0.00	0.00	7th Power Plan
School	Refrigeration	Refrigeration - Strip Curtain	Walkin Door	New	19.51	2	\$10.41	4%	25%	\$0.25	0.07	0.07	7th Power Plan
School	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	New	0.40	15	\$45.43	2%	13%	\$11.92	4.13	3.72	Annual Energy Outlook, 2015
School	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	New	8.36	15	\$313.82	2%	13%	\$3.97	7.21	6.52	Annual Energy Outlook, 2015
School	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	New	170.78	10	\$506.05	4%	25%	\$0.39	1.24	1.19	Vermont TRM
School	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	New	8.13	6	\$45.41	0%	0%	\$1.05	0.00	0.00	7th Power Plan
School	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	New	0.66	8	\$3.72	0%	0%	\$0.87	0.00	0.00	7th Power Plan
School	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	New	156.82	5	\$45.85	0%	0%	\$0.06	0.00	0.00	Illinois TRM
School	Refrigeration	Grocery - ECMs for Display Cases	Fridge Case	New	33.83	16	\$165.20	4%	25%	\$0.50	0.73	0.66	7th Power Plan
School	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	New	1,396.17	5	\$187.94	25%	75%	\$0.03	3.77	3.16	Illinois TRM
School	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	New	1,310.30	18	\$8,526.67	25%	50%	\$0.41	16.13	16.95	7th Power Plan
School	Office Equipment	Office Equipment - Smart Power Strips	Smart Strip	New	21.43	4	\$41.63	10%	50%	\$0.45	4.16	3.25	7th Power Plan
School	Cooling	Lodging - Guest Room Controls	LodgUnit	New	65.85	15	\$260.00	0%	0%	\$10.00	0.00	0.00	AEG-BEST
School	Heating	Lodging - Guest Room Controls	LodgUnit	New	-225.37	15	\$260.00	0%	0%	\$10.00	0.00	0.00	AEG-BEST
School	Office Equipment	Data Center - Best Practice Measures	sqft	New	0.02	5	\$0.00	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
School	Cooling	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.01	0%	0%	\$0.03	0.00	0.00	com-datacenters-7p_v5p.xlsx
School	Ventilation	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.01	0%	0%	\$0.03	0.00	0.00	com-datacenters-7p_v5p.xlsx

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School	Interior Lighting	Data Center - Commercially Available Measures	sqft	New	0.02	8	\$0.01	0%	0%	\$0.03	0.00	0.00	com-datacenters-7p_v5p.xlsx
School	Office Equipment	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.01	0%	0%	\$0.03	0.00	0.00	com-datacenters-7p_v5p.xlsx
School	Cooling	Data Center - Cutting Edge Measures	sqft	New	0.02	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
School	Office Equipment	Data Center - Cutting Edge Measures	sqft	New	0.00	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
School	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	New	1,047.66	18	\$4,092.80	0%	0%	\$0.25	0.00	0.00	7th Power Plan
School	Miscellaneous	Pool Pump - Timer	perBldg	New	628.53	10	\$85.22	15%	75%	\$0.02	0.33	0.29	Ontario Power TRM
School	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	New	2,887.45	6	\$35.93	1%	3%	\$0.00	1.41	1.22	7th Power Plan
School	Cooling	Advanced New Construction Designs	sqft	New	0.44	25	\$4.11	10%	25%	\$0.09	61.86	59.01	AEG Research
School	Heating	Advanced New Construction Designs	sqft	New	1.69	25	\$4.11	10%	25%	\$0.09	64.19	59.64	AEG Research
School	Ventilation	Advanced New Construction Designs	sqft	New	0.19	25	\$4.11	10%	25%	\$0.09	41.45	43.28	AEG Research
School	Water Heating	Advanced New Construction Designs	sqft	New	0.21	25	\$4.11	10%	25%	\$0.09	13.27	15.35	AEG Research
School	Interior Lighting	Advanced New Construction Designs	sqft	New	0.52	25	\$4.11	10%	25%	\$0.09	90.77	98.44	AEG Research
School	Exterior Lighting	Advanced New Construction Designs	sqft	New	0.16	25	\$4.11	10%	25%	\$0.09	27.21	30.80	AEG Research
School	Cooling	Strategic Energy Management	sqft	New	0.07	3	\$0.23	2%	22%	\$0.12	1.46	1.44	AEG Research
School	Heating	Strategic Energy Management	sqft	New	0.25	3	\$0.23	2%	22%	\$0.12	1.52	1.32	AEG Research
School	Ventilation	Strategic Energy Management	sqft	New	0.03	3	\$0.23	2%	22%	\$0.12	0.99	1.08	AEG Research
School	Water Heating	Strategic Energy Management	sqft	New	0.03	3	\$0.23	2%	22%	\$0.12	0.32	0.50	AEG Research
School	Interior Lighting	Strategic Energy Management	sqft	New	0.08	3	\$0.23	2%	22%	\$0.12	2.20	2.90	AEG Research
School	Exterior Lighting	Strategic Energy Management	sqft	New	0.02	3	\$0.23	2%	22%	\$0.12	0.65	0.87	AEG Research

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School	Refrigeration	Strategic Energy Management	sqft	New	0.02	3	\$0.23	2%	22%	\$0.12	0.61	0.50	AEG Research
School	Office Equipment	Strategic Energy Management	sqft	New	0.03	3	\$0.23	2%	22%	\$0.12	0.96	0.75	AEG Research
School	Cooling	Commissioning	sqft	New	0.09	3	\$0.52	10%	47%	\$0.22	3.75	3.68	AEG Research
School	Heating	Commissioning	sqft	New	0.34	3	\$0.52	10%	47%	\$0.22	3.89	3.37	AEG Research
School	Ventilation	Commissioning	sqft	New	0.04	3	\$0.52	10%	47%	\$0.22	2.55	2.76	AEG Research
School	Water Heating	Commissioning	sqft	New	0.01	3	\$0.52	10%	47%	\$0.22	0.28	0.42	AEG Research
School	Interior Lighting	Commissioning	sqft	New	0.09	3	\$0.52	10%	47%	\$0.22	4.70	6.18	AEG Research
School	Exterior Lighting	Commissioning	sqft	New	0.03	3	\$0.52	10%	47%	\$0.22	1.39	1.85	AEG Research
School	Refrigeration	Commissioning	sqft	New	0.04	3	\$0.52	10%	47%	\$0.22	2.59	2.11	AEG Research
School	Cooling	Retrocommissioning	sqft	New	0.09	3	\$0.33	0%	0%	\$0.14	0.00	0.00	AEG Research
School	Heating	Retrocommissioning	sqft	New	0.34	3	\$0.33	0%	0%	\$0.14	0.00	0.00	AEG Research
School	Ventilation	Retrocommissioning	sqft	New	0.04	3	\$0.33	0%	0%	\$0.14	0.00	0.00	AEG Research
School	Water Heating	Retrocommissioning	sqft	New	0.01	3	\$0.33	0%	0%	\$0.14	0.00	0.00	AEG Research
School	Interior Lighting	Retrocommissioning	sqft	New	0.09	3	\$0.33	0%	0%	\$0.14	0.00	0.00	AEG Research
School	Exterior Lighting	Retrocommissioning	sqft	New	0.03	3	\$0.33	0%	0%	\$0.14	0.00	0.00	AEG Research
School	Refrigeration	Retrocommissioning	sqft	New	0.04	3	\$0.33	0%	0%	\$0.14	0.00	0.00	AEG Research
School	Interior Lighting	Fruit Storage - Lighting Controls	sqft	New	0.06	10	\$0.09	0%	0%	\$0.12	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
School	Refrigeration	Fruit Storage Refrigeration Retrofit	sqft	New	0.14	10	\$1.09	0%	0%	\$1.03	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
School	Refrigeration	Fruit Storage Refrigeration Tuneup	sqft	New	0.04	3	\$0.23	0%	0%	\$2.11	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
School	Refrigeration	Fruit Storage Retrofit - CO2 Scrub	sqft	New	0.07	10	\$3.13	0%	0%	\$6.10	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
School	Refrigeration	Fruit Storage Retrofit - Membrane	sqft	New	0.01	10	\$0.68	0%	0%	\$6.62	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Lodging	Cooling	Insulation - Ceiling	sqft roof	Existing	0.00	45	\$1.28	15%	35%	\$0.27	0.00	0.00	Building Energy Simulation Tool

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Lodging	Heating	Insulation - Ceiling	sqft roof	Existing	0.28	45	\$1.28	15%	35%	\$0.27	12.44	11.23	Building Energy Simulation Tool
Lodging	Ventilation	Insulation - Ceiling	sqft roof	Existing	0.08	45	\$1.28	15%	35%	\$0.27	5.73	5.68	Building Energy Simulation Tool
Lodging	Cooling	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.84	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Lodging	Heating	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.84	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Lodging	Ventilation	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.84	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Lodging	Cooling	Building Shell - Cool Roofs	sqft roof	Existing	0.16	20	\$0.78	45%	50%	\$10.00	2.26	2.38	Building Energy Simulation Tool
Lodging	Heating	Building Shell - Cool Roofs	sqft roof	Existing	-0.16	20	\$0.78	45%	50%	\$10.00	-1.62	-1.61	Building Energy Simulation Tool
Lodging	Ventilation	Building Shell - Cool Roofs	sqft roof	Existing	-0.05	20	\$0.78	45%	50%	\$10.00	-0.85	-0.88	Building Energy Simulation Tool
Lodging	Cooling	Insulation - Wall Cavity	sqft wall	Existing	0.00	45	\$0.78	15%	35%	\$0.36	-0.09	-0.09	Building Energy Simulation Tool
Lodging	Heating	Insulation - Wall Cavity	sqft wall	Existing	0.14	45	\$0.78	15%	35%	\$0.36	2.34	2.09	Building Energy Simulation Tool
Lodging	Ventilation	Insulation - Wall Cavity	sqft wall	Existing	0.04	45	\$0.78	15%	35%	\$0.36	1.06	1.04	Building Energy Simulation Tool
Lodging	Cooling	HVAC - Duct Repair and Sealing	tonCool	Existing	0.00	18	\$0.57	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Lodging	Heating	HVAC - Duct Repair and Sealing	tonCool	Existing	0.00	18	\$0.57	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Lodging	Ventilation	HVAC - Duct Repair and Sealing	tonCool	Existing	0.00	18	\$0.57	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Lodging	Cooling	Windows - High Efficiency Glazing	sqft window	Existing	2.25	30	\$35.93	48%	48%	\$0.22	0.00	0.00	7th Power Plan
Lodging	Heating	Windows - High Efficiency Glazing	sqft window	Existing	9.53	30	\$35.93	48%	48%	\$0.22	0.00	0.00	7th Power Plan
Lodging	Ventilation	Windows - High Efficiency Glazing	sqft window	Existing	1.61	30	\$35.93	48%	48%	\$0.22	0.00	0.00	7th Power Plan
Lodging	Cooling	Chiller - Chilled Water Reset	ChillCtrl	Existing	4,180.23	10	\$884.85	15%	75%	\$0.03	1.44	1.37	AEG-BEST
Lodging	Cooling	Chiller - Chilled Water Variable-Flow System	HP cool	Existing	87.13	15	\$332.55	15%	75%	\$0.37	4.14	4.02	AEG-BEST

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Lodging	Cooling	Chiller - Variable Speed Fans	HP fan	Existing	217.19	15	\$208.36	15%	75%	\$0.09	1.04	1.00	New Jersey TRM
Lodging	Cooling	Water-Cooled Chiller - Condenser Water Reset	ChillCtrl	Existing	7,431.84	10	\$884.85	15%	75%	\$0.01	1.99	1.92	AEG-BEST
Lodging	Cooling	HVAC - Economizer	HP cool	Existing	55.67	10	\$168.42	18%	75%	\$0.36	10.20	9.88	AEG-BEST
Lodging	Heating	Space Heating - Heat Recovery Ventilator	CFM	Existing	1.43	14	\$5.08	3%	75%	\$0.39	48.27	41.97	7th Power Plan
Lodging	Ventilation	Ventilation - ECM on VAV Boxes	sqft	Existing	0.21	18	\$0.25	15%	20%	\$0.11	3.57	3.52	7th Power Plan
Lodging	Ventilation	Ventilation - Variable Speed Control	sqft	Existing	0.07	15	\$181.39	13%	50%	\$233.62	9.10	9.54	AEG-BEST
Lodging	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.01	15	\$0.25	15%	75%	\$2.07	2.39	2.44	7th Power Plan
Lodging	Cooling	Destratification Fans (HVLS)	Strat Fan	Existing	2,057.11	15	\$7,270.90	15%	30%	\$0.08	8.35	8.09	AEG Research
Lodging	Heating	Destratification Fans (HVLS)	Strat Fan	Existing	8,252.28	15	\$7,270.90	15%	30%	\$0.08	25.20	21.32	AEG Research
Lodging	Cooling	RTU - Maintenance	tonCool	Existing	32.82	3	\$35.00	15%	45%	\$0.29	1.74	1.82	AEG Research
Lodging	Cooling	RTU - Advanced Controls	sqft	Existing	0.13	15	\$0.07	15%	45%	\$0.05	2.47	2.35	7th Power Plan
Lodging	Cooling	RTU - Evaporative Precooler	tonCool	Existing	70.59	15	\$681.62	15%	75%	\$0.91	6.94	6.71	AEG Research
Lodging	Cooling	Ductless Mini Split Heat Pump	tonCool	Existing	157.39	15	\$3,359.26	15%	75%	\$0.72	39.47	40.09	7th Power Plan
Lodging	Heating	Ductless Mini Split Heat Pump	tonCool	Existing	297.20	15	\$3,359.26	15%	75%	\$0.72	84.03	76.49	7th Power Plan
Lodging	Cooling	Thermostat - WiFi/Interactive	sqft	Existing	0.25	5	\$0.66	30%	40%	\$0.14	7.33	7.29	7th Power Plan
Lodging	Heating	Thermostat - WiFi/Interactive	sqft	Existing	0.51	5	\$0.66	30%	40%	\$0.14	10.87	10.08	7th Power Plan
Lodging	Ventilation	Thermostat - WiFi/Interactive	sqft	Existing	0.16	5	\$0.66	30%	40%	\$0.14	5.21	5.26	7th Power Plan
Lodging	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	Existing	345.25	10	\$8.35	25%	65%	\$0.00	5.34	8.29	Illinois TRM
Lodging	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	Existing	357.77	10	\$11.64	25%	65%	-\$0.03	2.76	4.32	7th Power Plan
Lodging	Water Heating	Water Heater - High Efficiency Circulation Pump	WHUnits	Existing	64.57	15	\$36.75	15%	25%	\$0.03	1.12	1.53	Hawaii TRM
Lodging	Water Heating	Water Heater - Pipe Insulation	PipeFeet	Existing	1,554.74	15	\$14.88	16%	75%	\$0.00	15.07	21.75	AEG-BEST

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Lodging	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	Existing	236.06	4	\$144.04	25%	65%	-\$0.08	3.57	5.59	7th Power Plan
Lodging	Water Heating	Water Heater - Thermostat Setback	WHUnits	Existing	64.59	2	\$5.00	15%	75%	\$0.02	7.23	11.20	Illinois TRM
Lodging	Water Heating	Water Heater - Solar System	PipeFeet	Existing	5,349.58	20	\$215.28	1%	30%	\$0.00	25.15	37.06	AEG-BEST
Lodging	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.25	15	\$0.35	3%	23%	\$0.11	23.01	23.25	7th Power Plan
Lodging	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.34	15	\$0.58	3%	23%	\$0.13	31.31	32.11	7th Power Plan
Lodging	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	Existing	481.77	15	\$54.41	1%	3%	\$0.01	0.83	0.96	7th Power Plan
Lodging	Interior Lighting	Interior Lighting - Timeclocks and Timers	occ sens	Existing	0.00	8	\$111.67	7%	15%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Lodging	Interior Lighting	Interior Lighting - Skylights	1000 sqft	Existing	0.00	15	\$1,006.35	15%	25%	\$0.00	0.00	0.00	AEG Research
Lodging	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	1000 sqft	Existing	58.92	16	\$1,807.69	5%	15%	\$2.22	1.98	2.41	7th Power Plan
Lodging	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	Existing	599.34	11	\$30.80	15%	50%	\$0.00	7.33	8.38	Illinois TRM
Lodging	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	ELtg Watts	Existing	5.02	8	\$0.63	15%	25%	\$0.01	19.56	26.27	7th Power Plan
Lodging	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	Existing	155.92	8	\$55.10	15%	25%	\$0.04	9.91	13.68	Pacific Gas and Electric Research
Lodging	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	Existing	191.35	7	\$3,400.00	15%	30%	\$1.99	18.13	25.38	AEG Research
Lodging	Refrigeration	Refrigeration - Anti-Sweat Heater	Fridge Feet	Existing	52.03	8	\$48.18	0%	0%	\$0.14	0.00	0.00	7th Power Plan
Lodging	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	Existing	74.44	4	\$10.44	0%	0%	\$0.04	0.00	0.00	Michigan Energy Measures Database
Lodging	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	Existing	659.72	16	\$165.20	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Lodging	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	Existing	81.19	15	\$335.85	0%	0%	\$0.43	0.00	0.00	7th Power Plan
Lodging	Refrigeration	Refrigeration - Strip Curtain	Walkin Door	Existing	72.98	2	\$10.41	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Lodging	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBtuh	Existing	1.32	15	\$45.43	0%	0%	\$3.59	0.00	0.00	Annual Energy Outlook, 2015

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Lodging	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	Existing	27.27	15	\$313.82	0%	0%	\$1.20	0.00	0.00	Annual Energy Outlook, 2015
Lodging	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	Existing	430.27	10	\$506.05	0%	0%	\$0.15	0.00	0.00	Vermont TRM
Lodging	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	Existing	31.35	6	\$45.41	0%	0%	\$0.27	0.00	0.00	7th Power Plan
Lodging	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	Existing	2.53	8	\$3.72	0%	0%	\$0.22	0.00	0.00	7th Power Plan
Lodging	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	Existing	608.59	5	\$45.85	0%	0%	\$0.02	0.00	0.00	Illinois TRM
Lodging	Refrigeration	Grocery - ECMs for Display Cases	Fridge Case	Existing	129.88	16	\$165.20	0%	0%	\$0.13	0.00	0.00	7th Power Plan
Lodging	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	Existing	1,417.48	5	\$187.94	25%	75%	\$0.03	9.55	8.50	Illinois TRM
Lodging	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	Existing	2,251.19	18	\$8,526.67	25%	50%	\$0.33	7.64	7.64	7th Power Plan
Lodging	Office Equipment	Office Equipment - Smart Power Strips	Smart Strip	Existing	8.02	4	\$41.63	10%	50%	\$1.20	2.65	2.08	7th Power Plan
Lodging	Cooling	Lodging - Guest Room Controls	LodgUnit	Existing	114.73	15	\$260.00	15%	75%	\$10.00	21.58	20.51	AEG-BEST
Lodging	Heating	Lodging - Guest Room Controls	LodgUnit	Existing	-129.04	15	\$260.00	15%	75%	\$10.00	-27.00	-23.53	AEG-BEST
Lodging	Office Equipment	Data Center - Best Practice Measures	sqft	Existing	0.01	5	\$0.00	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Lodging	Cooling	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.01	0%	0%	\$0.03	0.00	0.00	com-datacenters-7p_v5p.xlsx
Lodging	Ventilation	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.01	0%	0%	\$0.03	0.00	0.00	com-datacenters-7p_v5p.xlsx
Lodging	Interior Lighting	Data Center - Commercially Available Measures	sqft	Existing	0.03	8	\$0.01	0%	0%	\$0.03	0.00	0.00	com-datacenters-7p_v5p.xlsx
Lodging	Office Equipment	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.01	0%	0%	\$0.03	0.00	0.00	com-datacenters-7p_v5p.xlsx
Lodging	Cooling	Data Center - Cutting Edge Measures	sqft	Existing	0.02	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Lodging	Office Equipment	Data Center - Cutting Edge Measures	sqft	Existing	0.00	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Lodging	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	Existing	2,983.15	18	\$4,092.80	0%	0%	\$0.12	0.00	0.00	7th Power Plan

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Lodging	Miscellaneous	Pool Pump - Timer	perBldg	Existing	487.39	10	\$85.22	15%	75%	\$0.02	1.54	1.39	Ontario Power TRM
Lodging	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	Existing	6,035.80	6	\$35.93	1%	3%	\$0.00	3.09	2.82	7th Power Plan
Lodging	Cooling	Advanced New Construction Designs	sqft	Existing	0.52	25	\$4.11	0%	0%	\$0.08	0.00	0.00	AEG Research
Lodging	Heating	Advanced New Construction Designs	sqft	Existing	1.05	25	\$4.11	0%	0%	\$0.08	0.00	0.00	AEG Research
Lodging	Ventilation	Advanced New Construction Designs	sqft	Existing	0.31	25	\$4.11	0%	0%	\$0.08	0.00	0.00	AEG Research
Lodging	Water Heating	Advanced New Construction Designs	sqft	Existing	0.69	25	\$4.11	0%	0%	\$0.08	0.00	0.00	AEG Research
Lodging	Interior Lighting	Advanced New Construction Designs	sqft	Existing	0.66	25	\$4.11	0%	0%	\$0.08	0.00	0.00	AEG Research
Lodging	Exterior Lighting	Advanced New Construction Designs	sqft	Existing	0.37	25	\$4.11	0%	0%	\$0.08	0.00	0.00	AEG Research
Lodging	Cooling	Strategic Energy Management	sqft	Existing	0.07	3	\$0.27	0%	0%	\$0.12	0.00	0.00	AEG Research
Lodging	Heating	Strategic Energy Management	sqft	Existing	0.14	3	\$0.27	0%	0%	\$0.12	0.00	0.00	AEG Research
Lodging	Ventilation	Strategic Energy Management	sqft	Existing	0.05	3	\$0.27	0%	0%	\$0.12	0.00	0.00	AEG Research
Lodging	Water Heating	Strategic Energy Management	sqft	Existing	0.11	3	\$0.27	0%	0%	\$0.12	0.00	0.00	AEG Research
Lodging	Interior Lighting	Strategic Energy Management	sqft	Existing	0.10	3	\$0.27	0%	0%	\$0.12	0.00	0.00	AEG Research
Lodging	Exterior Lighting	Strategic Energy Management	sqft	Existing	0.05	3	\$0.27	0%	0%	\$0.12	0.00	0.00	AEG Research
Lodging	Refrigeration	Strategic Energy Management	sqft	Existing	0.03	3	\$0.27	0%	0%	\$0.12	0.00	0.00	AEG Research
Lodging	Office Equipment	Strategic Energy Management	sqft	Existing	0.01	3	\$0.27	0%	0%	\$0.12	0.00	0.00	AEG Research
Lodging	Cooling	Commissioning	sqft	Existing	0.10	3	\$0.54	0%	0%	\$0.21	0.00	0.00	AEG Research
Lodging	Heating	Commissioning	sqft	Existing	0.19	3	\$0.54	0%	0%	\$0.21	0.00	0.00	AEG Research
Lodging	Ventilation	Commissioning	sqft	Existing	0.06	3	\$0.54	0%	0%	\$0.21	0.00	0.00	AEG Research
Lodging	Water Heating	Commissioning	sqft	Existing	0.05	3	\$0.54	0%	0%	\$0.21	0.00	0.00	AEG Research
Lodging	Interior Lighting	Commissioning	sqft	Existing	0.12	3	\$0.54	0%	0%	\$0.21	0.00	0.00	AEG Research

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Lodging	Exterior Lighting	Commissioning	sqft	Existing	0.06	3	\$0.54	0%	0%	\$0.21	0.00	0.00	AEG Research
Lodging	Refrigeration	Commissioning	sqft	Existing	0.07	3	\$0.54	0%	0%	\$0.21	0.00	0.00	AEG Research
Lodging	Cooling	Retrocommissioning	sqft	Existing	0.10	3	\$0.34	15%	76%	\$0.13	18.53	19.87	AEG Research
Lodging	Heating	Retrocommissioning	sqft	Existing	0.20	3	\$0.34	15%	76%	\$0.13	26.58	26.12	AEG Research
Lodging	Ventilation	Retrocommissioning	sqft	Existing	0.07	3	\$0.34	15%	76%	\$0.13	14.21	14.56	AEG Research
Lodging	Water Heating	Retrocommissioning	sqft	Existing	0.05	3	\$0.34	15%	76%	\$0.13	4.70	7.41	AEG Research
Lodging	Interior Lighting	Retrocommissioning	sqft	Existing	0.12	3	\$0.34	15%	76%	\$0.13	24.70	29.78	AEG Research
Lodging	Exterior Lighting	Retrocommissioning	sqft	Existing	0.06	3	\$0.34	15%	76%	\$0.13	12.04	17.32	AEG Research
Lodging	Refrigeration	Retrocommissioning	sqft	Existing	0.08	3	\$0.34	15%	76%	\$0.13	17.24	15.01	AEG Research
Lodging	Interior Lighting	Fruit Storage - Lighting Controls	sqft	Existing	0.08	10	\$0.09	0%	0%	\$0.10	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Lodging	Refrigeration	Fruit Storage Refrigeration Retrofit	sqft	Existing	0.23	10	\$1.09	0%	0%	\$0.61	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Lodging	Refrigeration	Fruit Storage Refrigeration Tuneup	sqft	Existing	0.06	3	\$0.23	0%	0%	\$1.24	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Lodging	Refrigeration	Fruit Storage Retrofit - CO2 Scrub	sqft	Existing	0.11	10	\$3.13	0%	0%	\$3.60	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Lodging	Refrigeration	Fruit Storage Retrofit - Membrane	sqft	Existing	0.02	10	\$0.68	0%	0%	\$3.90	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Lodging	Cooling	Insulation - Ceiling	sqft roof	New	0.00	45	\$1.28	15%	50%	\$1.24	0.00	0.00	Building Energy Simulation Tool
Lodging	Heating	Insulation - Ceiling	sqft roof	New	0.06	45	\$1.28	15%	50%	\$1.24	2.25	2.10	Building Energy Simulation Tool
Lodging	Ventilation	Insulation - Ceiling	sqft roof	New	0.02	45	\$1.28	15%	50%	\$1.24	1.07	1.05	Building Energy Simulation Tool
Lodging	Cooling	Insulation - Ducting	sqft duct	New	0.00	20	\$0.84	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Lodging	Heating	Insulation - Ducting	sqft duct	New	0.00	20	\$0.84	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Lodging	Ventilation	Insulation - Ducting	sqft duct	New	0.00	20	\$0.84	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Lodging	Cooling	Building Shell - Cool Roofs	sqft roof	New	0.06	20	\$0.78	45%	50%	\$10.00	0.44	0.41	Building Energy Simulation Tool

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Lodging	Heating	Building Shell - Cool Roofs	sqft roof	New	-0.06	20	\$0.78	45%	50%	\$10.00	-0.36	-0.33	Building Energy Simulation Tool
Lodging	Ventilation	Building Shell - Cool Roofs	sqft roof	New	-0.02	20	\$0.78	45%	50%	\$10.00	-0.17	-0.17	Building Energy Simulation Tool
Lodging	Cooling	Insulation - Wall Cavity	sqft wall	New	0.00	45	\$0.78	15%	50%	\$4.12	0.00	0.00	Building Energy Simulation Tool
Lodging	Heating	Insulation - Wall Cavity	sqft wall	New	0.01	45	\$0.78	15%	50%	\$4.12	0.15	0.14	Building Energy Simulation Tool
Lodging	Ventilation	Insulation - Wall Cavity	sqft wall	New	0.00	45	\$0.78	15%	50%	\$4.12	0.08	0.07	Building Energy Simulation Tool
Lodging	Cooling	HVAC - Duct Repair and Sealing	tonCool	New	0.00	18	\$0.57	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Lodging	Heating	HVAC - Duct Repair and Sealing	tonCool	New	0.00	18	\$0.57	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Lodging	Ventilation	HVAC - Duct Repair and Sealing	tonCool	New	0.00	18	\$0.57	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Lodging	Cooling	Windows - High Efficiency Glazing	sqft window	New	2.04	30	\$35.93	66%	66%	\$0.24	0.00	0.00	7th Power Plan
Lodging	Heating	Windows - High Efficiency Glazing	sqft window	New	8.61	30	\$35.93	66%	66%	\$0.24	0.00	0.00	7th Power Plan
Lodging	Ventilation	Windows - High Efficiency Glazing	sqft window	New	1.38	30	\$35.93	66%	66%	\$0.24	0.00	0.00	7th Power Plan
Lodging	Cooling	Chiller - Chilled Water Reset	ChillCtrl	New	3,687.61	10	\$884.85	15%	75%	\$0.03	0.33	0.30	AEG-BEST
Lodging	Cooling	Chiller - Chilled Water Variable-Flow System	HP cool	New	76.36	15	\$332.55	15%	75%	\$0.41	1.17	1.09	AEG-BEST
Lodging	Cooling	Chiller - Variable Speed Fans	HP fan	New	191.95	15	\$208.36	15%	75%	\$0.11	0.30	0.27	New Jersey TRM
Lodging	Cooling	Water-Cooled Chiller - Condenser Water Reset	ChillCtrl	New	6,500.45	10	\$884.85	15%	75%	\$0.02	0.46	0.42	AEG-BEST
Lodging	Cooling	HVAC - Economizer	HP cool	New	55.64	10	\$168.42	18%	75%	\$0.36	2.65	2.45	AEG-BEST
Lodging	Heating	Space Heating - Heat Recovery Ventilator	CFM	New	1.29	14	\$5.08	6%	75%	\$0.43	12.61	11.17	7th Power Plan
Lodging	Ventilation	Ventilation - ECM on VAV Boxes	sqft	New	0.18	18	\$0.25	15%	20%	\$0.11	1.53	1.49	7th Power Plan
Lodging	Ventilation	Ventilation - Variable Speed Control	sqft	New	0.06	15	\$181.39	19%	50%	\$254.69	2.29	2.22	AEG-BEST

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Lodging	Ventilation	Ventilation - Demand Controlled	sqft	New	0.01	15	\$0.25	15%	75%	\$2.26	0.69	0.67	7th Power Plan
Lodging	Cooling	Destratification Fans (HVLS)	Strat Fan	New	1,886.57	15	\$7,270.90	15%	30%	\$0.08	2.50	2.28	AEG Research
Lodging	Heating	Destratification Fans (HVLS)	Strat Fan	New	7,408.73	15	\$7,270.90	15%	30%	\$0.08	6.97	6.08	AEG Research
Lodging	Cooling	RTU - Maintenance	tonCool	New	34.57	3	\$35.00	15%	45%	\$0.29	0.17	0.16	AEG Research
Lodging	Cooling	RTU - Advanced Controls	sqft	New	0.14	15	\$0.07	15%	45%	\$0.05	1.20	1.12	7th Power Plan
Lodging	Cooling	RTU - Evaporative Precooler	tonCool	New	71.83	15	\$681.62	15%	75%	\$0.89	4.00	3.79	AEG Research
Lodging	Cooling	Ductless Mini Split Heat Pump	tonCool	New	133.23	15	\$3,359.26	15%	75%	\$0.80	13.45	12.57	7th Power Plan
Lodging	Heating	Ductless Mini Split Heat Pump	tonCool	New	280.62	15	\$3,359.26	15%	75%	\$0.80	30.24	27.04	7th Power Plan
Lodging	Cooling	Thermostat - WiFi/Interactive	sqft	New	0.23	5	\$0.66	30%	40%	\$0.16	0.44	0.41	7th Power Plan
Lodging	Heating	Thermostat - WiFi/Interactive	sqft	New	0.47	5	\$0.66	30%	40%	\$0.16	0.63	0.55	7th Power Plan
Lodging	Ventilation	Thermostat - WiFi/Interactive	sqft	New	0.13	5	\$0.66	30%	40%	\$0.16	0.30	0.29	7th Power Plan
Lodging	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	New	311.23	10	\$8.35	25%	65%	\$0.00	1.24	1.75	Illinois TRM
Lodging	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	New	324.36	10	\$11.64	25%	65%	-\$0.03	0.65	0.91	7th Power Plan
Lodging	Water Heating	Water Heater - High Efficiency Circulation Pump	WHUnits	New	58.71	15	\$36.75	15%	25%	\$0.03	0.45	0.55	Hawaii TRM
Lodging	Water Heating	Water Heater - Pipe Insulation	PipeFeet	New	1,360.57	15	\$14.88	1%	75%	\$0.00	5.68	7.65	AEG-BEST
Lodging	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	New	214.40	4	\$144.04	25%	65%	-\$0.08	0.34	0.52	7th Power Plan
Lodging	Water Heating	Water Heater - Thermostat Setback	WHUnits	New	58.77	2	\$5.00	15%	75%	\$0.02	0.29	0.45	Illinois TRM
Lodging	Water Heating	Water Heater - Solar System	PipeFeet	New	4,721.91	20	\$215.28	1%	30%	\$0.00	7.93	10.63	AEG-BEST
Lodging	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.26	15	\$0.35	11%	23%	\$0.10	11.03	11.47	7th Power Plan
Lodging	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.37	15	\$0.58	11%	23%	\$0.11	15.23	15.91	7th Power Plan
Lodging	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	New	494.22	15	\$54.41	1%	3%	\$0.01	0.23	0.27	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Lodging	Interior Lighting	Interior Lighting - Timeclocks and Timers	occ sens	New	0.00	8	\$111.67	7%	15%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Lodging	Interior Lighting	Interior Lighting - Skylights	1000 sqft	New	0.00	15	\$1,006.35	18%	25%	\$0.00	0.00	0.00	AEG Research
Lodging	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	1000 sqft	New	54.60	16	\$1,807.69	5%	15%	\$2.24	0.63	0.70	7th Power Plan
Lodging	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	New	557.05	11	\$30.80	15%	50%	\$0.00	1.92	2.08	Illinois TRM
Lodging	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	ELtg Watts	New	4.31	8	\$0.63	15%	25%	\$0.01	3.82	5.28	7th Power Plan
Lodging	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	New	136.55	8	\$55.10	15%	25%	\$0.04	2.01	2.77	Pacific Gas and Electric Research
Lodging	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	New	167.17	7	\$3,400.00	15%	30%	\$1.96	3.22	4.58	AEG Research
Lodging	Refrigeration	Refrigeration - Anti-Sweat Heater	Fridge Feet	New	43.08	8	\$48.18	0%	0%	\$0.17	0.00	0.00	7th Power Plan
Lodging	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	New	65.38	4	\$10.44	0%	0%	\$0.04	0.00	0.00	Michigan Energy Measures Database
Lodging	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	New	593.69	16	\$165.20	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Lodging	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	New	77.67	15	\$335.85	0%	0%	\$0.46	0.00	0.00	7th Power Plan
Lodging	Refrigeration	Refrigeration - Strip Curtain	Walkin Door	New	69.77	2	\$10.41	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Lodging	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	New	1.26	15	\$45.43	0%	0%	\$3.82	0.00	0.00	Annual Energy Outlook, 2015
Lodging	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	New	26.09	15	\$313.82	0%	0%	\$1.27	0.00	0.00	Annual Energy Outlook, 2015
Lodging	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	New	394.91	10	\$506.05	0%	0%	\$0.17	0.00	0.00	Vermont TRM
Lodging	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	New	29.56	6	\$45.41	0%	0%	\$0.29	0.00	0.00	7th Power Plan
Lodging	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	New	2.38	8	\$3.72	0%	0%	\$0.24	0.00	0.00	7th Power Plan
Lodging	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	New	572.41	5	\$45.85	0%	0%	\$0.02	0.00	0.00	Illinois TRM
Lodging	Refrigeration	Grocery - ECMs for Display Cases	Fridge Case	New	122.46	16	\$165.20	0%	0%	\$0.14	0.00	0.00	7th Power Plan

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Lodging	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	New	1,391.75	5	\$187.94	25%	75%	\$0.03	1.13	0.95	Illinois TRM
Lodging	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	New	1,902.01	18	\$8,526.67	25%	50%	\$0.36	3.26	3.20	7th Power Plan
Lodging	Office Equipment	Office Equipment - Smart Power Strips	Smart Strip	New	7.74	4	\$41.63	10%	50%	\$1.25	0.23	0.18	7th Power Plan
Lodging	Cooling	Lodging - Guest Room Controls	LodgUnit	New	85.78	15	\$260.00	15%	75%	\$10.00	6.32	5.90	AEG-BEST
Lodging	Heating	Lodging - Guest Room Controls	LodgUnit	New	-107.51	15	\$260.00	15%	75%	\$10.00	-8.47	-7.57	AEG-BEST
Lodging	Office Equipment	Data Center - Best Practice Measures	sqft	New	0.01	5	\$0.00	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Lodging	Cooling	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.01	0%	0%	\$0.03	0.00	0.00	com-datacenters-7p_v5p.xlsx
Lodging	Ventilation	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.01	0%	0%	\$0.03	0.00	0.00	com-datacenters-7p_v5p.xlsx
Lodging	Interior Lighting	Data Center - Commercially Available Measures	sqft	New	0.03	8	\$0.01	0%	0%	\$0.03	0.00	0.00	com-datacenters-7p_v5p.xlsx
Lodging	Office Equipment	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.01	0%	0%	\$0.03	0.00	0.00	com-datacenters-7p_v5p.xlsx
Lodging	Cooling	Data Center - Cutting Edge Measures	sqft	New	0.02	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Lodging	Office Equipment	Data Center - Cutting Edge Measures	sqft	New	0.00	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Lodging	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	New	2,536.57	18	\$4,092.80	0%	0%	\$0.13	0.00	0.00	7th Power Plan
Lodging	Miscellaneous	Pool Pump - Timer	perBldg	New	486.91	10	\$85.22	15%	75%	\$0.02	0.30	0.26	Ontario Power TRM
Lodging	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	New	6,022.37	6	\$35.93	1%	3%	\$0.00	0.27	0.24	7th Power Plan
Lodging	Cooling	Advanced New Construction Designs	sqft	New	0.48	25	\$4.11	10%	25%	\$0.08	12.34	11.64	AEG Research
Lodging	Heating	Advanced New Construction Designs	sqft	New	0.97	25	\$4.11	10%	25%	\$0.08	17.68	16.36	AEG Research
Lodging	Ventilation	Advanced New Construction Designs	sqft	New	0.27	25	\$4.11	10%	25%	\$0.08	8.31	8.13	AEG Research
Lodging	Water Heating	Advanced New Construction Designs	sqft	New	0.64	25	\$4.11	10%	25%	\$0.08	9.13	10.57	AEG Research

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Lodging	Interior Lighting	Advanced New Construction Designs	sqft	New	0.69	25	\$4.11	10%	25%	\$0.08	18.76	19.41	AEG Research
Lodging	Exterior Lighting	Advanced New Construction Designs	sqft	New	0.33	25	\$4.11	10%	25%	\$0.08	8.85	10.03	AEG Research
Lodging	Cooling	Strategic Energy Management	sqft	New	0.07	3	\$0.27	0%	0%	\$0.12	0.00	0.00	AEG Research
Lodging	Heating	Strategic Energy Management	sqft	New	0.14	3	\$0.27	0%	0%	\$0.12	0.00	0.00	AEG Research
Lodging	Ventilation	Strategic Energy Management	sqft	New	0.04	3	\$0.27	0%	0%	\$0.12	0.00	0.00	AEG Research
Lodging	Water Heating	Strategic Energy Management	sqft	New	0.10	3	\$0.27	0%	0%	\$0.12	0.00	0.00	AEG Research
Lodging	Interior Lighting	Strategic Energy Management	sqft	New	0.10	3	\$0.27	0%	0%	\$0.12	0.00	0.00	AEG Research
Lodging	Exterior Lighting	Strategic Energy Management	sqft	New	0.05	3	\$0.27	0%	0%	\$0.12	0.00	0.00	AEG Research
Lodging	Refrigeration	Strategic Energy Management	sqft	New	0.03	3	\$0.27	0%	0%	\$0.12	0.00	0.00	AEG Research
Lodging	Office Equipment	Strategic Energy Management	sqft	New	0.01	3	\$0.27	0%	0%	\$0.12	0.00	0.00	AEG Research
Lodging	Cooling	Commissioning	sqft	New	0.10	3	\$0.55	15%	76%	\$0.22	1.22	1.15	AEG Research
Lodging	Heating	Commissioning	sqft	New	0.19	3	\$0.55	15%	76%	\$0.22	1.71	1.53	AEG Research
Lodging	Ventilation	Commissioning	sqft	New	0.06	3	\$0.55	15%	76%	\$0.22	0.84	0.81	AEG Research
Lodging	Water Heating	Commissioning	sqft	New	0.04	3	\$0.55	15%	76%	\$0.22	0.31	0.49	AEG Research
Lodging	Interior Lighting	Commissioning	sqft	New	0.12	3	\$0.55	15%	76%	\$0.22	1.61	2.24	AEG Research
Lodging	Exterior Lighting	Commissioning	sqft	New	0.06	3	\$0.55	15%	76%	\$0.22	0.75	1.15	AEG Research
Lodging	Refrigeration	Commissioning	sqft	New	0.07	3	\$0.55	15%	76%	\$0.22	1.04	0.83	AEG Research
Lodging	Cooling	Retrocommissioning	sqft	New	0.10	3	\$0.35	0%	0%	\$0.14	0.00	0.00	AEG Research
Lodging	Heating	Retrocommissioning	sqft	New	0.19	3	\$0.35	0%	0%	\$0.14	0.00	0.00	AEG Research
Lodging	Ventilation	Retrocommissioning	sqft	New	0.06	3	\$0.35	0%	0%	\$0.14	0.00	0.00	AEG Research
Lodging	Water Heating	Retrocommissioning	sqft	New	0.04	3	\$0.35	0%	0%	\$0.14	0.00	0.00	AEG Research
Lodging	Interior Lighting	Retrocommissioning	sqft	New	0.12	3	\$0.35	0%	0%	\$0.14	0.00	0.00	AEG Research

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Lodging	Exterior Lighting	Retrocommissioning	sqft	New	0.06	3	\$0.35	0%	0%	\$0.14	0.00	0.00	AEG Research
Lodging	Refrigeration	Retrocommissioning	sqft	New	0.07	3	\$0.35	0%	0%	\$0.14	0.00	0.00	AEG Research
Lodging	Interior Lighting	Fruit Storage - Lighting Controls	sqft	New	0.09	10	\$0.09	0%	0%	\$0.09	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Lodging	Refrigeration	Fruit Storage Refrigeration Retrofit	sqft	New	0.22	10	\$1.09	0%	0%	\$0.66	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Lodging	Refrigeration	Fruit Storage Refrigeration Tuneup	sqft	New	0.06	3	\$0.23	0%	0%	\$1.36	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Lodging	Refrigeration	Fruit Storage Retrofit - CO2 Scrub	sqft	New	0.11	10	\$3.13	0%	0%	\$3.92	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Lodging	Refrigeration	Fruit Storage Retrofit - Membrane	sqft	New	0.02	10	\$0.68	0%	0%	\$4.26	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse	Cooling	Insulation - Ceiling	sqft roof	Existing	0.12	45	\$1.28	15%	35%	\$0.14	15.95	15.10	Building Energy Simulation Tool
Warehouse	Heating	Insulation - Ceiling	sqft roof	Existing	0.48	45	\$1.28	15%	35%	\$0.14	64.15	62.41	Building Energy Simulation Tool
Warehouse	Ventilation	Insulation - Ceiling	sqft roof	Existing	0.01	45	\$1.28	15%	35%	\$0.14	10.13	10.91	Building Energy Simulation Tool
Warehouse	Cooling	Insulation - Ducting	sqft duct	Existing	0.04	20	\$0.84	15%	35%	\$1.02	5.41	5.47	Building Energy Simulation Tool
Warehouse	Heating	Insulation - Ducting	sqft duct	Existing	0.02	20	\$0.84	15%	35%	\$1.02	2.59	2.58	Building Energy Simulation Tool
Warehouse	Ventilation	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.84	15%	35%	\$1.02	0.40	0.45	Building Energy Simulation Tool
Warehouse	Cooling	Building Shell - Cool Roofs	sqft roof	Existing	0.14	20	\$0.78	45%	50%	\$10.00	4.40	4.53	Building Energy Simulation Tool
Warehouse	Heating	Building Shell - Cool Roofs	sqft roof	Existing	-0.30	20	\$0.78	45%	50%	\$10.00	-9.74	-9.86	Building Energy Simulation Tool
Warehouse	Ventilation	Building Shell - Cool Roofs	sqft roof	Existing	-0.01	20	\$0.78	45%	50%	\$10.00	-1.51	-1.71	Building Energy Simulation Tool
Warehouse	Cooling	Insulation - Wall Cavity	sqft wall	Existing	0.01	45	\$0.78	15%	35%	\$0.02	0.26	0.24	Building Energy Simulation Tool
Warehouse	Heating	Insulation - Wall Cavity	sqft wall	Existing	3.97	45	\$0.78	15%	35%	\$0.02	105.51	95.13	Building Energy Simulation Tool
Warehouse	Ventilation	Insulation - Wall Cavity	sqft wall	Existing	0.10	45	\$0.78	15%	35%	\$0.02	13.79	14.68	Building Energy Simulation Tool

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Warehouse	Cooling	HVAC - Duct Repair and Sealing	tonCool	Existing	8.23	18	\$0.57	15%	25%	\$0.00	1.08	0.99	Building Energy Simulation Tool
Warehouse	Heating	HVAC - Duct Repair and Sealing	tonCool	Existing	26.56	18	\$0.57	15%	25%	\$0.00	3.72	3.35	Building Energy Simulation Tool
Warehouse	Ventilation	HVAC - Duct Repair and Sealing	tonCool	Existing	0.70	18	\$0.57	15%	25%	\$0.00	0.49	0.52	Building Energy Simulation Tool
Warehouse	Cooling	Windows - High Efficiency Glazing	sqft window	Existing	3.26	30	\$35.93	48%	48%	\$0.09	0.00	0.00	7th Power Plan
Warehouse	Heating	Windows - High Efficiency Glazing	sqft window	Existing	26.43	30	\$35.93	48%	48%	\$0.09	0.00	0.00	7th Power Plan
Warehouse	Ventilation	Windows - High Efficiency Glazing	sqft window	Existing	0.47	30	\$35.93	48%	48%	\$0.09	0.00	0.00	7th Power Plan
Warehouse	Cooling	Chiller - Chilled Water Reset	ChillCtrl	Existing	0.00	10	\$884.85	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Warehouse	Cooling	Chiller - Chilled Water Variable-Flow System	HP cool	Existing	0.00	15	\$332.55	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Warehouse	Cooling	Chiller - Variable Speed Fans	HP fan	Existing	0.00	15	\$208.36	15%	75%	\$0.00	0.00	0.00	New Jersey TRM
Warehouse	Cooling	Water-Cooled Chiller - Condenser Water Reset	ChillCtrl	Existing	0.00	10	\$884.85	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Warehouse	Cooling	HVAC - Economizer	HP cool	Existing	83.11	10	\$168.42	18%	75%	\$0.25	46.91	44.02	AEG-BEST
Warehouse	Heating	Space Heating - Heat Recovery Ventilator	CFM	Existing	9.43	14	\$5.08	3%	75%	\$0.06	307.85	268.75	7th Power Plan
Warehouse	Ventilation	Ventilation - ECM on VAV Boxes	sqft	Existing	0.04	18	\$0.25	15%	20%	\$0.53	6.15	6.68	7th Power Plan
Warehouse	Ventilation	Ventilation - Variable Speed Control	sqft	Existing	0.00	15	\$181.39	13%	50%	\$3,213.05	5.83	6.87	AEG-BEST
Warehouse	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.25	15%	75%	\$10.38	4.02	4.73	7th Power Plan
Warehouse	Cooling	Destratification Fans (HVLS)	Strat Fan	Existing	1,911.88	15	\$7,270.90	15%	75%	\$0.04	70.24	62.52	AEG Research
Warehouse	Heating	Destratification Fans (HVLS)	Strat Fan	Existing	15,025.50	15	\$7,270.90	15%	75%	\$0.04	578.05	522.49	AEG Research
Warehouse	Cooling	RTU - Maintenance	tonCool	Existing	38.01	3	\$35.00	15%	45%	\$0.26	12.43	12.68	AEG Research
Warehouse	Cooling	RTU - Advanced Controls	sqft	Existing	0.06	15	\$0.07	15%	45%	\$0.11	9.15	8.57	7th Power Plan
Warehouse	Cooling	RTU - Evaporative Precooler	tonCool	Existing	78.51	15	\$681.62	15%	75%	\$0.82	46.89	45.28	AEG Research
Warehouse	Cooling	Ductless Mini Split Heat Pump	tonCool	Existing	180.11	15	\$3,359.26	15%	25%	\$0.34	1.25	1.24	7th Power Plan

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Warehouse	Heating	Ductless Mini Split Heat Pump	tonCool	Existing	711.15	15	\$3,359.26	15%	25%	\$0.34	73.00	71.07	7th Power Plan
Warehouse	Cooling	Thermostat - WiFi/Interactive	sqft	Existing	0.22	5	\$0.66	30%	40%	\$0.11	13.44	13.42	7th Power Plan
Warehouse	Heating	Thermostat - WiFi/Interactive	sqft	Existing	0.88	5	\$0.66	30%	40%	\$0.11	58.43	57.72	7th Power Plan
Warehouse	Ventilation	Thermostat - WiFi/Interactive	sqft	Existing	0.03	5	\$0.66	30%	40%	\$0.11	9.31	10.15	7th Power Plan
Warehouse	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	Existing	40.57	10	\$8.35	25%	65%	\$0.02	2.43	3.81	Illinois TRM
Warehouse	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	Existing	42.03	10	\$11.64	25%	65%	-\$0.22	1.25	1.98	7th Power Plan
Warehouse	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	Existing	63.96	15	\$36.75	15%	75%	\$0.03	3.03	4.17	Hawaii TRM
Warehouse	Water Heating	Water Heater - Pipe Insulation	PipeFeet	Existing	182.78	15	\$14.88	16%	75%	\$0.01	6.85	9.98	AEG-BEST
Warehouse	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	Existing	27.52	4	\$144.04	25%	65%	-\$0.70	1.59	2.55	7th Power Plan
Warehouse	Water Heating	Water Heater - Thermostat Setback	WHunits	Existing	63.51	2	\$5.00	15%	75%	\$0.02	3.23	5.12	Illinois TRM
Warehouse	Water Heating	Water Heater - Solar System	PipeFeet	Existing	628.89	20	\$215.28	1%	30%	\$0.02	11.42	17.01	AEG-BEST
Warehouse	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.25	15	\$0.35	3%	23%	\$0.12	206.93	225.98	7th Power Plan
Warehouse	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.34	15	\$0.58	3%	23%	\$0.14	278.79	310.90	7th Power Plan
Warehouse	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	Existing	694.15	15	\$54.41	1%	3%	\$0.01	5.78	6.79	7th Power Plan
Warehouse	Interior Lighting	Interior Lighting - Timeclocks and Timers	occ sens	Existing	0.00	8	\$111.67	7%	15%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Warehouse	Interior Lighting	Interior Lighting - Skylights	1000 sqft	Existing	0.00	15	\$1,006.35	15%	30%	\$0.00	0.00	0.00	AEG Research
Warehouse	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	1000 sqft	Existing	38.70	16	\$1,807.69	5%	15%	\$3.49	12.70	15.85	7th Power Plan
Warehouse	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	Existing	397.60	11	\$30.80	15%	50%	\$0.01	48.04	55.27	Illinois TRM
Warehouse	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	ELtg Watts	Existing	1.00	8	\$0.63	15%	25%	\$0.07	54.47	71.61	7th Power Plan

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Warehouse	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	Existing	82.09	8	\$55.10	15%	25%	\$0.07	27.56	37.28	Pacific Gas and Electric Research
Warehouse	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	Existing	97.92	7	\$3,400.00	15%	30%	\$3.86	48.49	68.08	AEG Research
Warehouse	Refrigeration	Refrigeration - Anti-Sweat Heater	Fridge Feet	Existing	93.95	8	\$48.18	0%	0%	\$0.08	0.00	0.00	7th Power Plan
Warehouse	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	Existing	184.65	4	\$10.44	0%	0%	\$0.01	0.00	0.00	Michigan Energy Measures Database
Warehouse	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	Existing	1,568.90	16	\$165.20	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Warehouse	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	Existing	138.79	15	\$335.85	0%	0%	\$0.25	0.00	0.00	7th Power Plan
Warehouse	Refrigeration	Refrigeration - Strip Curtain	Walkin Door	Existing	130.74	2	\$10.41	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Warehouse	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBtuh	Existing	2.25	15	\$45.43	0%	0%	\$2.13	0.00	0.00	Annual Energy Outlook, 2015
Warehouse	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	Existing	46.62	15	\$313.82	0%	0%	\$0.71	0.00	0.00	Annual Energy Outlook, 2015
Warehouse	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	Existing	1,053.79	10	\$506.05	0%	0%	\$0.06	0.00	0.00	Vermont TRM
Warehouse	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	Existing	57.19	6	\$45.41	0%	0%	\$0.15	0.00	0.00	7th Power Plan
Warehouse	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	Existing	4.61	8	\$3.72	0%	0%	\$0.12	0.00	0.00	7th Power Plan
Warehouse	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	Existing	1,093.95	5	\$45.85	0%	0%	\$0.01	0.00	0.00	Illinois TRM
Warehouse	Refrigeration	Grocery - ECMs for Display Cases	Fridge Case	Existing	240.02	16	\$165.20	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Warehouse	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	Existing	1,405.86	5	\$187.94	25%	75%	\$0.03	9.62	8.54	Illinois TRM
Warehouse	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	Existing	387.94	18	\$8,526.67	25%	50%	\$1.65	13.20	14.51	7th Power Plan
Warehouse	Office Equipment	Office Equipment - Smart Power Strips	Smart Strip	Existing	8.08	4	\$41.63	10%	50%	\$1.18	27.66	21.04	7th Power Plan
Warehouse	Cooling	Lodging - Guest Room Controls	LodgUnit	Existing	80.47	15	\$260.00	0%	0%	\$10.00	0.00	0.00	AEG-BEST
Warehouse	Heating	Lodging - Guest Room Controls	LodgUnit	Existing	-197.28	15	\$260.00	0%	0%	\$10.00	0.00	0.00	AEG-BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Warehouse	Office Equipment	Data Center - Best Practice Measures	sqft	Existing	0.02	5	\$0.00	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse	Cooling	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.01	0%	0%	\$0.03	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse	Ventilation	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.01	0%	0%	\$0.03	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse	Interior Lighting	Data Center - Commercially Available Measures	sqft	Existing	0.02	8	\$0.01	0%	0%	\$0.03	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse	Office Equipment	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.01	0%	0%	\$0.03	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse	Cooling	Data Center - Cutting Edge Measures	sqft	Existing	0.02	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse	Office Equipment	Data Center - Cutting Edge Measures	sqft	Existing	0.00	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	Existing	1,032.45	18	\$4,092.80	0%	0%	\$0.30	0.00	0.00	7th Power Plan
Warehouse	Miscellaneous	Pool Pump - Timer	perBldg	Existing	0.00	10	\$85.22	15%	75%	\$0.00	0.00	0.00	Ontario Power TRM
Warehouse	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	Existing	7,405.10	6	\$35.93	1%	3%	\$0.00	0.00	17.23	7th Power Plan
Warehouse	Cooling	Advanced New Construction Designs	sqft	Existing	0.46	25	\$4.11	0%	0%	\$0.10	0.00	0.00	AEG Research
Warehouse	Heating	Advanced New Construction Designs	sqft	Existing	1.77	25	\$4.11	0%	0%	\$0.10	0.00	0.00	AEG Research
Warehouse	Ventilation	Advanced New Construction Designs	sqft	Existing	0.05	25	\$4.11	0%	0%	\$0.10	0.00	0.00	AEG Research
Warehouse	Water Heating	Advanced New Construction Designs	sqft	Existing	0.04	25	\$4.11	0%	0%	\$0.10	0.00	0.00	AEG Research
Warehouse	Interior Lighting	Advanced New Construction Designs	sqft	Existing	0.47	25	\$4.11	0%	0%	\$0.10	0.00	0.00	AEG Research
Warehouse	Exterior Lighting	Advanced New Construction Designs	sqft	Existing	0.10	25	\$4.11	0%	0%	\$0.10	0.00	0.00	AEG Research
Warehouse	Cooling	Strategic Energy Management	sqft	Existing	0.07	3	\$0.20	3%	11%	\$0.11	3.46	3.56	AEG Research
Warehouse	Heating	Strategic Energy Management	sqft	Existing	0.27	3	\$0.20	3%	11%	\$0.11	15.32	15.43	AEG Research
Warehouse	Ventilation	Strategic Energy Management	sqft	Existing	0.01	3	\$0.20	3%	11%	\$0.11	2.39	2.74	AEG Research

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Warehouse	Water Heating	Strategic Energy Management	sqft	Existing	0.01	3	\$0.20	3%	11%	\$0.11	0.60	0.96	AEG Research
Warehouse	Interior Lighting	Strategic Energy Management	sqft	Existing	0.07	3	\$0.20	3%	11%	\$0.11	18.90	23.99	AEG Research
Warehouse	Exterior Lighting	Strategic Energy Management	sqft	Existing	0.02	3	\$0.20	3%	11%	\$0.11	3.99	5.48	AEG Research
Warehouse	Refrigeration	Strategic Energy Management	sqft	Existing	0.01	3	\$0.20	3%	11%	\$0.11	2.62	1.64	AEG Research
Warehouse	Office Equipment	Strategic Energy Management	sqft	Existing	0.01	3	\$0.20	3%	11%	\$0.11	3.74	2.84	AEG Research
Warehouse	Cooling	Commissioning	sqft	Existing	0.09	3	\$0.49	0%	0%	\$0.22	0.00	0.00	AEG Research
Warehouse	Heating	Commissioning	sqft	Existing	0.36	3	\$0.49	0%	0%	\$0.22	0.00	0.00	AEG Research
Warehouse	Ventilation	Commissioning	sqft	Existing	0.01	3	\$0.49	0%	0%	\$0.22	0.00	0.00	AEG Research
Warehouse	Water Heating	Commissioning	sqft	Existing	0.00	3	\$0.49	0%	0%	\$0.22	0.00	0.00	AEG Research
Warehouse	Interior Lighting	Commissioning	sqft	Existing	0.08	3	\$0.49	0%	0%	\$0.22	0.00	0.00	AEG Research
Warehouse	Exterior Lighting	Commissioning	sqft	Existing	0.02	3	\$0.49	0%	0%	\$0.22	0.00	0.00	AEG Research
Warehouse	Refrigeration	Commissioning	sqft	Existing	0.02	3	\$0.49	0%	0%	\$0.22	0.00	0.00	AEG Research
Warehouse	Cooling	Retrocommissioning	sqft	Existing	0.09	3	\$0.31	11%	73%	\$0.14	36.96	38.17	AEG Research
Warehouse	Heating	Retrocommissioning	sqft	Existing	0.37	3	\$0.31	11%	73%	\$0.14	163.76	165.30	AEG Research
Warehouse	Ventilation	Retrocommissioning	sqft	Existing	0.01	3	\$0.31	11%	73%	\$0.14	25.55	29.34	AEG Research
Warehouse	Water Heating	Retrocommissioning	sqft	Existing	0.00	3	\$0.31	11%	73%	\$0.14	2.12	3.44	AEG Research
Warehouse	Interior Lighting	Retrocommissioning	sqft	Existing	0.08	3	\$0.31	11%	73%	\$0.14	168.35	214.18	AEG Research
Warehouse	Exterior Lighting	Retrocommissioning	sqft	Existing	0.02	3	\$0.31	11%	73%	\$0.14	35.53	48.89	AEG Research
Warehouse	Refrigeration	Retrocommissioning	sqft	Existing	0.02	3	\$0.31	11%	73%	\$0.14	46.61	29.35	AEG Research
Warehouse	Interior Lighting	Fruit Storage - Lighting Controls	sqft	Existing	0.06	10	\$0.09	0%	0%	\$0.14	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse	Refrigeration	Fruit Storage Refrigeration Retrofit	sqft	Existing	0.05	10	\$1.09	0%	0%	\$2.81	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse	Refrigeration	Fruit Storage Refrigeration Tuneup	sqft	Existing	0.01	3	\$0.23	0%	0%	\$5.76	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx

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Warehouse	Refrigeration	Fruit Storage Retrofit - CO2 Scrub	sqft	Existing	0.02	10	\$3.13	0%	0%	\$16.67	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse	Refrigeration	Fruit Storage Retrofit - Membrane	sqft	Existing	0.00	10	\$0.68	0%	0%	\$18.08	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse	Cooling	Insulation - Ceiling	sqft roof	New	0.00	45	\$1.28	15%	50%	\$0.19	0.00	0.00	Building Energy Simulation Tool
Warehouse	Heating	Insulation - Ceiling	sqft roof	New	0.49	45	\$1.28	15%	50%	\$0.19	65.51	60.28	Building Energy Simulation Tool
Warehouse	Ventilation	Insulation - Ceiling	sqft roof	New	0.01	45	\$1.28	15%	50%	\$0.19	8.04	8.31	Building Energy Simulation Tool
Warehouse	Cooling	Insulation - Ducting	sqft duct	New	0.07	20	\$0.84	15%	25%	\$0.71	2.53	2.38	Building Energy Simulation Tool
Warehouse	Heating	Insulation - Ducting	sqft duct	New	0.03	20	\$0.84	15%	25%	\$0.71	1.04	0.96	Building Energy Simulation Tool
Warehouse	Ventilation	Insulation - Ducting	sqft duct	New	0.00	20	\$0.84	15%	25%	\$0.71	0.13	0.13	Building Energy Simulation Tool
Warehouse	Cooling	Building Shell - Cool Roofs	sqft roof	New	0.15	20	\$0.78	45%	50%	\$10.00	2.67	2.51	Building Energy Simulation Tool
Warehouse	Heating	Building Shell - Cool Roofs	sqft roof	New	-0.32	20	\$0.78	45%	50%	\$10.00	-6.04	-5.58	Building Energy Simulation Tool
Warehouse	Ventilation	Building Shell - Cool Roofs	sqft roof	New	-0.01	20	\$0.78	45%	50%	\$10.00	-0.73	-0.77	Building Energy Simulation Tool
Warehouse	Cooling	Insulation - Wall Cavity	sqft wall	New	-0.01	45	\$0.78	15%	50%	\$0.12	-0.21	-0.19	Building Energy Simulation Tool
Warehouse	Heating	Insulation - Wall Cavity	sqft wall	New	0.53	45	\$0.78	15%	50%	\$0.12	13.29	12.32	Building Energy Simulation Tool
Warehouse	Ventilation	Insulation - Wall Cavity	sqft wall	New	0.01	45	\$0.78	15%	50%	\$0.12	1.54	1.59	Building Energy Simulation Tool
Warehouse	Cooling	HVAC - Duct Repair and Sealing	tonCool	New	14.37	18	\$0.57	15%	25%	\$0.00	0.95	0.88	Building Energy Simulation Tool
Warehouse	Heating	HVAC - Duct Repair and Sealing	tonCool	New	21.01	18	\$0.57	15%	25%	\$0.00	1.46	1.35	Building Energy Simulation Tool
Warehouse	Ventilation	HVAC - Duct Repair and Sealing	tonCool	New	0.42	18	\$0.57	15%	25%	\$0.00	0.17	0.18	Building Energy Simulation Tool
Warehouse	Cooling	Windows - High Efficiency Glazing	sqft window	New	3.12	30	\$35.93	66%	66%	\$0.09	0.00	0.00	7th Power Plan
Warehouse	Heating	Windows - High Efficiency Glazing	sqft window	New	26.80	30	\$35.93	66%	66%	\$0.09	0.00	0.00	7th Power Plan

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Warehouse	Ventilation	Windows - High Efficiency Glazing	sqft window	New	0.33	30	\$35.93	66%	66%	\$0.09	0.00	0.00	7th Power Plan
Warehouse	Cooling	Chiller - Chilled Water Reset	ChillCtrl	New	0.00	10	\$884.85	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Warehouse	Cooling	Chiller - Chilled Water Variable-Flow System	HP cool	New	0.00	15	\$332.55	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Warehouse	Cooling	Chiller - Variable Speed Fans	HP fan	New	0.00	15	\$208.36	15%	75%	\$0.00	0.00	0.00	New Jersey TRM
Warehouse	Cooling	Water-Cooled Chiller - Condenser Water Reset	ChillCtrl	New	0.00	10	\$884.85	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Warehouse	Cooling	HVAC - Economizer	HP cool	New	81.91	10	\$168.42	18%	75%	\$0.26	12.65	11.18	AEG-BEST
Warehouse	Heating	Space Heating - Heat Recovery Ventilator	CFM	New	8.91	14	\$5.08	6%	75%	\$0.06	89.76	78.05	7th Power Plan
Warehouse	Ventilation	Ventilation - ECM on VAV Boxes	sqft	New	0.03	18	\$0.25	15%	20%	\$0.57	2.82	2.94	7th Power Plan
Warehouse	Ventilation	Ventilation - Variable Speed Control	sqft	New	0.00	15	\$181.39	19%	50%	\$3,484.50	1.58	1.67	AEG-BEST
Warehouse	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.25	15%	75%	\$11.26	1.30	1.38	7th Power Plan
Warehouse	Cooling	Destratification Fans (HVLS)	Strat Fan	New	1,780.64	15	\$7,270.90	15%	75%	\$0.05	21.72	19.24	AEG Research
Warehouse	Heating	Destratification Fans (HVLS)	Strat Fan	New	14,589.05	15	\$7,270.90	15%	75%	\$0.05	188.42	164.00	AEG Research
Warehouse	Cooling	RTU - Maintenance	tonCool	New	38.64	3	\$35.00	15%	45%	\$0.27	1.26	1.13	AEG Research
Warehouse	Cooling	RTU - Advanced Controls	sqft	New	0.06	15	\$0.07	15%	45%	\$0.12	4.57	4.16	7th Power Plan
Warehouse	Cooling	RTU - Evaporative Precooler	tonCool	New	78.89	15	\$681.62	15%	75%	\$0.85	28.93	26.78	AEG Research
Warehouse	Cooling	Ductless Mini Split Heat Pump	tonCool	New	158.27	15	\$3,359.26	15%	25%	\$0.37	0.47	0.42	7th Power Plan
Warehouse	Heating	Ductless Mini Split Heat Pump	tonCool	New	723.33	15	\$3,359.26	15%	25%	\$0.37	31.24	27.65	7th Power Plan
Warehouse	Cooling	Thermostat - WiFi/Interactive	sqft	New	0.21	5	\$0.66	30%	40%	\$0.11	0.93	0.84	7th Power Plan
Warehouse	Heating	Thermostat - WiFi/Interactive	sqft	New	0.90	5	\$0.66	30%	40%	\$0.11	4.20	3.67	7th Power Plan
Warehouse	Ventilation	Thermostat - WiFi/Interactive	sqft	New	0.02	5	\$0.66	30%	40%	\$0.11	0.52	0.55	7th Power Plan
Warehouse	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	New	36.83	10	\$8.35	25%	65%	\$0.02	0.60	0.85	Illinois TRM

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Warehouse	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	New	38.38	10	\$11.64	25%	65%	-\$0.22	0.31	0.44	7th Power Plan
Warehouse	Water Heating	Water Heater - High Efficiency Circulation Pump	WHUnits	New	58.58	15	\$36.75	15%	75%	\$0.03	1.32	1.61	Hawaii TRM
Warehouse	Water Heating	Water Heater - Pipe Insulation	PipeFeet	New	160.97	15	\$14.88	1%	75%	\$0.01	2.76	3.71	AEG-BEST
Warehouse	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	New	25.47	4	\$144.04	25%	65%	-\$0.70	0.17	0.25	7th Power Plan
Warehouse	Water Heating	Water Heater - Thermostat Setback	WHUnits	New	58.36	2	\$5.00	15%	75%	\$0.02	0.14	0.22	Illinois TRM
Warehouse	Water Heating	Water Heater - Solar System	PipeFeet	New	558.77	20	\$215.28	1%	30%	\$0.02	3.86	5.16	AEG-BEST
Warehouse	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.23	15	\$0.35	11%	23%	\$0.11	100.17	105.57	7th Power Plan
Warehouse	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.31	15	\$0.58	11%	23%	\$0.13	137.68	145.94	7th Power Plan
Warehouse	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	New	636.06	15	\$54.41	1%	3%	\$0.01	1.61	1.82	7th Power Plan
Warehouse	Interior Lighting	Interior Lighting - Timeclocks and Timers	occ sens	New	0.00	8	\$111.67	7%	15%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Warehouse	Interior Lighting	Interior Lighting - Skylights	1000 sqft	New	0.00	15	\$1,006.35	18%	33%	\$0.00	0.00	0.00	AEG Research
Warehouse	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	1000 sqft	New	35.49	16	\$1,807.69	5%	15%	\$3.49	4.35	4.88	7th Power Plan
Warehouse	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	New	361.32	11	\$30.80	15%	50%	\$0.01	13.23	14.63	Illinois TRM
Warehouse	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	ELtg Watts	New	0.89	8	\$0.63	15%	25%	\$0.07	11.62	15.32	7th Power Plan
Warehouse	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	New	74.54	8	\$55.10	15%	25%	\$0.07	6.11	8.03	Pacific Gas and Electric Research
Warehouse	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	New	91.95	7	\$3,400.00	15%	30%	\$3.81	9.95	13.30	AEG Research
Warehouse	Refrigeration	Refrigeration - Anti-Sweat Heater	Fridge Feet	New	76.88	8	\$48.18	0%	0%	\$0.10	0.00	0.00	7th Power Plan
Warehouse	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	New	170.99	4	\$10.44	0%	0%	\$0.02	0.00	0.00	Michigan Energy Measures Database
Warehouse	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	New	1,473.48	16	\$165.20	0%	0%	\$0.01	0.00	0.00	7th Power Plan

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Warehouse	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	New	134.32	15	\$335.85	0%	0%	\$0.26	0.00	0.00	7th Power Plan
Warehouse	Refrigeration	Refrigeration - Strip Curtain	Walkin Door	New	125.38	2	\$10.41	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Warehouse	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	New	2.18	15	\$45.43	0%	0%	\$2.21	0.00	0.00	Annual Energy Outlook, 2015
Warehouse	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	New	45.12	15	\$313.82	0%	0%	\$0.74	0.00	0.00	Annual Energy Outlook, 2015
Warehouse	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	New	989.70	10	\$506.05	0%	0%	\$0.07	0.00	0.00	Vermont TRM
Warehouse	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	New	53.44	6	\$45.41	0%	0%	\$0.16	0.00	0.00	7th Power Plan
Warehouse	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	New	4.31	8	\$3.72	0%	0%	\$0.13	0.00	0.00	7th Power Plan
Warehouse	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	New	1,030.98	5	\$45.85	0%	0%	\$0.01	0.00	0.00	Illinois TRM
Warehouse	Refrigeration	Grocery - ECMs for Display Cases	Fridge Case	New	222.37	16	\$165.20	0%	0%	\$0.08	0.00	0.00	7th Power Plan
Warehouse	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	New	1,384.66	5	\$187.94	25%	75%	\$0.03	1.03	0.87	Illinois TRM
Warehouse	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	New	304.81	18	\$8,526.67	25%	50%	\$1.79	6.15	6.43	7th Power Plan
Warehouse	Office Equipment	Office Equipment - Smart Power Strips	Smart Strip	New	7.72	4	\$41.63	10%	50%	\$1.25	2.53	1.90	7th Power Plan
Warehouse	Cooling	Lodging - Guest Room Controls	LodgUnit	New	74.31	15	\$260.00	0%	0%	\$10.00	0.00	0.00	AEG-BEST
Warehouse	Heating	Lodging - Guest Room Controls	LodgUnit	New	-208.66	15	\$260.00	0%	0%	\$10.00	0.00	0.00	AEG-BEST
Warehouse	Office Equipment	Data Center - Best Practice Measures	sqft	New	0.02	5	\$0.00	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse	Cooling	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.01	0%	0%	\$0.03	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse	Ventilation	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.01	0%	0%	\$0.03	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse	Interior Lighting	Data Center - Commercially Available Measures	sqft	New	0.02	8	\$0.01	0%	0%	\$0.03	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse	Office Equipment	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.01	0%	0%	\$0.03	0.00	0.00	com-datacenters-7p_v5p.xlsx

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Warehouse	Cooling	Data Center - Cutting Edge Measures	sqft	New	0.02	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse	Office Equipment	Data Center - Cutting Edge Measures	sqft	New	0.00	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	New	809.57	18	\$4,092.80	0%	0%	\$0.33	0.00	0.00	7th Power Plan
Warehouse	Miscellaneous	Pool Pump - Timer	perBldg	New	0.00	10	\$85.22	15%	75%	\$0.00	0.00	0.00	Ontario Power TRM
Warehouse	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	New	7,405.10	6	\$35.93	1%	3%	\$0.00	0.00	1.54	7th Power Plan
Warehouse	Cooling	Advanced New Construction Designs	sqft	New	0.44	25	\$4.11	10%	15%	\$0.11	8.76	8.15	AEG Research
Warehouse	Heating	Advanced New Construction Designs	sqft	New	1.81	25	\$4.11	10%	15%	\$0.11	38.11	35.04	AEG Research
Warehouse	Ventilation	Advanced New Construction Designs	sqft	New	0.04	25	\$4.11	10%	15%	\$0.11	4.68	4.89	AEG Research
Warehouse	Water Heating	Advanced New Construction Designs	sqft	New	0.04	25	\$4.11	10%	15%	\$0.11	1.47	1.71	AEG Research
Warehouse	Interior Lighting	Advanced New Construction Designs	sqft	New	0.44	25	\$4.11	10%	15%	\$0.11	43.28	45.32	AEG Research
Warehouse	Exterior Lighting	Advanced New Construction Designs	sqft	New	0.09	25	\$4.11	10%	15%	\$0.11	8.97	9.89	AEG Research
Warehouse	Cooling	Strategic Energy Management	sqft	New	0.07	3	\$0.19	3%	11%	\$0.12	0.25	0.22	AEG Research
Warehouse	Heating	Strategic Energy Management	sqft	New	0.28	3	\$0.19	3%	11%	\$0.12	1.13	0.98	AEG Research
Warehouse	Ventilation	Strategic Energy Management	sqft	New	0.01	3	\$0.19	3%	11%	\$0.12	0.14	0.15	AEG Research
Warehouse	Water Heating	Strategic Energy Management	sqft	New	0.01	3	\$0.19	3%	11%	\$0.12	0.04	0.07	AEG Research
Warehouse	Interior Lighting	Strategic Energy Management	sqft	New	0.07	3	\$0.19	3%	11%	\$0.12	1.29	1.63	AEG Research
Warehouse	Exterior Lighting	Strategic Energy Management	sqft	New	0.01	3	\$0.19	3%	11%	\$0.12	0.27	0.38	AEG Research
Warehouse	Refrigeration	Strategic Energy Management	sqft	New	0.01	3	\$0.19	3%	11%	\$0.12	0.15	0.09	AEG Research
Warehouse	Office Equipment	Strategic Energy Management	sqft	New	0.01	3	\$0.19	3%	11%	\$0.12	0.23	0.18	AEG Research
Warehouse	Cooling	Commissioning	sqft	New	0.09	3	\$0.47	11%	73%	\$0.23	2.67	2.40	AEG Research

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Warehouse	Heating	Commissioning	sqft	New	0.38	3	\$0.47	11%	73%	\$0.23	12.07	10.55	AEG Research
Warehouse	Ventilation	Commissioning	sqft	New	0.01	3	\$0.47	11%	73%	\$0.23	1.47	1.57	AEG Research
Warehouse	Water Heating	Commissioning	sqft	New	0.00	3	\$0.47	11%	73%	\$0.23	0.16	0.24	AEG Research
Warehouse	Interior Lighting	Commissioning	sqft	New	0.08	3	\$0.47	11%	73%	\$0.23	11.51	14.57	AEG Research
Warehouse	Exterior Lighting	Commissioning	sqft	New	0.02	3	\$0.47	11%	73%	\$0.23	2.36	3.41	AEG Research
Warehouse	Refrigeration	Commissioning	sqft	New	0.01	3	\$0.47	11%	73%	\$0.23	2.72	1.52	AEG Research
Warehouse	Cooling	Retrocommissioning	sqft	New	0.09	3	\$0.30	0%	0%	\$0.14	0.00	0.00	AEG Research
Warehouse	Heating	Retrocommissioning	sqft	New	0.38	3	\$0.30	0%	0%	\$0.14	0.00	0.00	AEG Research
Warehouse	Ventilation	Retrocommissioning	sqft	New	0.01	3	\$0.30	0%	0%	\$0.14	0.00	0.00	AEG Research
Warehouse	Water Heating	Retrocommissioning	sqft	New	0.00	3	\$0.30	0%	0%	\$0.14	0.00	0.00	AEG Research
Warehouse	Interior Lighting	Retrocommissioning	sqft	New	0.08	3	\$0.30	0%	0%	\$0.14	0.00	0.00	AEG Research
Warehouse	Exterior Lighting	Retrocommissioning	sqft	New	0.02	3	\$0.30	0%	0%	\$0.14	0.00	0.00	AEG Research
Warehouse	Refrigeration	Retrocommissioning	sqft	New	0.01	3	\$0.30	0%	0%	\$0.14	0.00	0.00	AEG Research
Warehouse	Interior Lighting	Fruit Storage - Lighting Controls	sqft	New	0.05	10	\$0.09	0%	0%	\$0.14	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse	Refrigeration	Fruit Storage Refrigeration Retrofit	sqft	New	0.04	10	\$1.09	0%	0%	\$3.24	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse	Refrigeration	Fruit Storage Refrigeration Tuneup	sqft	New	0.01	3	\$0.23	0%	0%	\$6.64	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse	Refrigeration	Fruit Storage Retrofit - CO2 Scrub	sqft	New	0.02	10	\$3.13	0%	0%	\$19.19	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse	Refrigeration	Fruit Storage Retrofit - Membrane	sqft	New	0.00	10	\$0.68	0%	0%	\$20.82	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse, Controlled Atm.	Cooling	Insulation - Ceiling	sqft roof	Existing	0.09	45	\$1.28	15%	35%	\$0.16	8.23	7.94	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Heating	Insulation - Ceiling	sqft roof	Existing	0.44	45	\$1.28	15%	35%	\$0.16	14.68	13.67	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Ventilation	Insulation - Ceiling	sqft roof	Existing	0.04	45	\$1.28	15%	35%	\$0.16	9.63	10.38	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Cooling	Insulation - Ducting	sqft duct	Existing	0.03	20	\$0.84	15%	50%	\$1.26	4.59	4.82	Building Energy Simulation Tool

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Warehouse, Controlled Atm.	Heating	Insulation - Ducting	sqft duct	Existing	0.02	20	\$0.84	15%	50%	\$1.26	0.99	0.96	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Ventilation	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.84	15%	50%	\$1.26	0.64	0.73	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Cooling	Building Shell - Cool Roofs	sqft roof	Existing	0.11	20	\$0.78	45%	50%	\$10.00	2.21	2.34	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Heating	Building Shell - Cool Roofs	sqft roof	Existing	-0.27	20	\$0.78	45%	50%	\$10.00	-2.23	-2.16	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Ventilation	Building Shell - Cool Roofs	sqft roof	Existing	-0.03	20	\$0.78	45%	50%	\$10.00	-1.43	-1.63	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Cooling	Insulation - Wall Cavity	sqft wall	Existing	0.01	45	\$0.78	15%	35%	\$0.02	0.13	0.12	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Heating	Insulation - Wall Cavity	sqft wall	Existing	3.26	45	\$0.78	15%	35%	\$0.02	21.26	19.18	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Ventilation	Insulation - Wall Cavity	sqft wall	Existing	0.30	45	\$0.78	15%	35%	\$0.02	13.11	13.97	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Cooling	HVAC - Duct Repair and Sealing	tonCool	Existing	6.06	18	\$0.57	15%	50%	\$0.00	1.88	1.79	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Heating	HVAC - Duct Repair and Sealing	tonCool	Existing	21.83	18	\$0.57	15%	50%	\$0.00	2.63	2.37	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Ventilation	HVAC - Duct Repair and Sealing	tonCool	Existing	2.01	18	\$0.57	15%	50%	\$0.00	1.62	1.72	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Cooling	Windows - High Efficiency Glazing	sqft window	Existing	2.48	30	\$35.93	48%	48%	\$0.10	0.00	0.00	7th Power Plan
Warehouse, Controlled Atm.	Heating	Windows - High Efficiency Glazing	sqft window	Existing	24.04	30	\$35.93	48%	48%	\$0.10	0.00	0.00	7th Power Plan
Warehouse, Controlled Atm.	Ventilation	Windows - High Efficiency Glazing	sqft window	Existing	1.35	30	\$35.93	48%	48%	\$0.10	0.00	0.00	7th Power Plan
Warehouse, Controlled Atm.	Cooling	Chiller - Chilled Water Reset	ChillCtrl	Existing	3,216.54	10	\$884.85	15%	75%	\$0.03	4.19	3.96	AEG-BEST
Warehouse, Controlled Atm.	Cooling	Chiller - Chilled Water Variable-Flow System	HP cool	Existing	126.15	15	\$332.55	15%	75%	\$0.26	22.65	21.83	AEG-BEST
Warehouse, Controlled Atm.	Cooling	Chiller - Variable Speed Fans	HP fan	Existing	473.80	15	\$208.36	15%	75%	\$0.04	8.62	8.07	New Jersey TRM
Warehouse, Controlled Atm.	Cooling	Water-Cooled Chiller - Condenser Water Reset	ChillCtrl	Existing	14,505.66	10	\$884.85	15%	75%	\$0.01	1.88	1.79	AEG-BEST
Warehouse, Controlled Atm.	Cooling	HVAC - Economizer	HP cool	Existing	60.93	10	\$168.42	18%	75%	\$0.32	23.72	23.39	AEG-BEST

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Warehouse, Controlled Atm.	Heating	Space Heating - Heat Recovery Ventilator	CFM	Existing	7.74	14	\$5.08	3%	75%	\$0.07	62.02	54.20	7th Power Plan
Warehouse, Controlled Atm.	Ventilation	Ventilation - ECM on VAV Boxes	sqft	Existing	0.10	18	\$0.25	15%	20%	\$0.18	5.85	6.36	7th Power Plan
Warehouse, Controlled Atm.	Ventilation	Ventilation - Variable Speed Control	sqft	Existing	0.01	15	\$181.39	13%	50%	\$1,115.76	5.54	6.53	AEG-BEST
Warehouse, Controlled Atm.	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.01	15	\$0.25	15%	75%	\$3.61	3.84	4.51	7th Power Plan
Warehouse, Controlled Atm.	Cooling	Destratification Fans (HVLS)	Strat Fan	Existing	1,374.27	15	\$7,270.90	15%	15%	\$0.05	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Heating	Destratification Fans (HVLS)	Strat Fan	Existing	12,335.32	15	\$7,270.90	15%	15%	\$0.05	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Cooling	RTU - Maintenance	tonCool	Existing	28.07	3	\$35.00	15%	45%	\$0.33	3.83	4.15	AEG Research
Warehouse, Controlled Atm.	Cooling	RTU - Advanced Controls	sqft	Existing	0.05	15	\$0.07	15%	45%	\$0.14	3.01	2.89	7th Power Plan
Warehouse, Controlled Atm.	Cooling	RTU - Evaporative Precooler	tonCool	Existing	59.36	15	\$681.62	15%	75%	\$1.04	14.78	14.73	AEG Research
Warehouse, Controlled Atm.	Cooling	Ductless Mini Split Heat Pump	tonCool	Existing	136.16	15	\$3,359.26	15%	25%	\$0.42	0.36	0.37	7th Power Plan
Warehouse, Controlled Atm.	Heating	Ductless Mini Split Heat Pump	tonCool	Existing	646.16	15	\$3,359.26	15%	25%	\$0.42	16.90	15.53	7th Power Plan
Warehouse, Controlled Atm.	Cooling	Thermostat - WiFi/Interactive	sqft	Existing	0.16	5	\$0.66	30%	40%	\$0.12	6.75	6.91	7th Power Plan
Warehouse, Controlled Atm.	Heating	Thermostat - WiFi/Interactive	sqft	Existing	0.80	5	\$0.66	30%	40%	\$0.12	13.37	12.64	7th Power Plan
Warehouse, Controlled Atm.	Ventilation	Thermostat - WiFi/Interactive	sqft	Existing	0.08	5	\$0.66	30%	40%	\$0.12	8.67	9.57	7th Power Plan
Warehouse, Controlled Atm.	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	Existing	65.92	10	\$8.35	25%	65%	\$0.01	1.59	2.50	Illinois TRM
Warehouse, Controlled Atm.	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	Existing	68.30	10	\$11.64	25%	65%	-\$0.13	0.82	1.30	7th Power Plan
Warehouse, Controlled Atm.	Water Heating	Water Heater - High Efficiency Circulation Pump	WHUnits	Existing	63.96	15	\$36.75	15%	75%	\$0.03	1.99	2.73	Hawaii TRM
Warehouse, Controlled Atm.	Water Heating	Water Heater - Pipe Insulation	PipeFeet	Existing	296.98	15	\$14.88	16%	75%	\$0.00	4.49	6.54	AEG-BEST
Warehouse, Controlled Atm.	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	Existing	44.30	4	\$144.04	25%	65%	-\$0.43	1.03	1.67	7th Power Plan

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Warehouse, Controlled Atm.	Water Heating	Water Heater - Thermostat Setback	WHunits	Existing	63.51	2	\$5.00	15%	75%	\$0.02	2.12	3.36	Illinois TRM
Warehouse, Controlled Atm.	Water Heating	Water Heater - Solar System	PipeFeet	Existing	1,021.80	20	\$215.28	1%	30%	\$0.01	7.49	11.15	AEG-BEST
Warehouse, Controlled Atm.	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.25	15	\$0.35	13%	38%	\$0.12	88.98	97.17	7th Power Plan
Warehouse, Controlled Atm.	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.34	15	\$0.58	13%	38%	\$0.14	118.47	132.98	7th Power Plan
Warehouse, Controlled Atm.	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	Existing	694.15	15	\$54.41	1%	3%	\$0.01	1.91	2.24	7th Power Plan
Warehouse, Controlled Atm.	Interior Lighting	Interior Lighting - Timeclocks and Timers	occ sens	Existing	0.00	8	\$111.67	7%	15%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Warehouse, Controlled Atm.	Interior Lighting	Interior Lighting - Skylights	1000 sqft	Existing	0.00	15	\$1,006.35	15%	30%	\$0.00	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	1000 sqft	Existing	37.22	16	\$1,807.69	5%	15%	\$3.49	3.94	5.14	7th Power Plan
Warehouse, Controlled Atm.	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	Existing	397.60	11	\$30.80	15%	50%	\$0.01	15.89	18.28	Illinois TRM
Warehouse, Controlled Atm.	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	ELtg Watts	Existing	1.97	8	\$0.63	15%	25%	\$0.03	18.01	23.68	7th Power Plan
Warehouse, Controlled Atm.	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fict	Existing	82.09	8	\$55.10	15%	25%	\$0.07	9.11	12.33	Pacific Gas and Electric Research
Warehouse, Controlled Atm.	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fict	Existing	97.92	7	\$3,400.00	15%	30%	\$3.86	16.03	22.51	AEG Research
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Anti-Sweat Heater	Fridge Feet	Existing	614.54	8	\$48.18	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	Existing	13,085.23	4	\$10.44	0%	0%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	Existing	88,322.06	16	\$165.20	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	Existing	2,830.83	15	\$335.85	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Strip Curtain	Walkin Door	Existing	1,542.65	2	\$10.41	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBtuh	Existing	45.87	15	\$45.43	0%	0%	\$0.11	0.00	0.00	Annual Energy Outlook, 2015
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	Existing	950.84	15	\$313.82	0%	0%	\$0.04	0.00	0.00	Annual Energy Outlook, 2015

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Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	Existing	59,323.55	10	\$506.05	0%	0%	\$0.00	0.00	0.00	Vermont TRM
Warehouse, Controlled Atm.	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	Existing	374.33	6	\$45.41	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Warehouse, Controlled Atm.	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	Existing	30.16	8	\$3.72	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Warehouse, Controlled Atm.	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	Existing	7,069.93	5	\$45.85	0%	0%	\$0.00	0.00	0.00	Illinois TRM
Warehouse, Controlled Atm.	Refrigeration	Grocery - ECMs for Display Cases	Fridge Case	Existing	1,551.16	16	\$165.20	5%	25%	\$0.01	2.62	2.53	7th Power Plan
Warehouse, Controlled Atm.	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	Existing	1,416.76	5	\$187.94	25%	75%	\$0.03	141.85	125.49	Illinois TRM
Warehouse, Controlled Atm.	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	Existing	1,124.74	18	\$8,526.67	25%	50%	\$0.57	12.72	13.90	7th Power Plan
Warehouse, Controlled Atm.	Office Equipment	Office Equipment - Smart Power Strips	Smart Strip	Existing	6.06	4	\$41.63	10%	50%	\$1.58	6.86	5.22	7th Power Plan
Warehouse, Controlled Atm.	Cooling	Lodging - Guest Room Controls	LodgUnit	Existing	61.35	15	\$260.00	0%	0%	\$10.00	0.00	0.00	AEG-BEST
Warehouse, Controlled Atm.	Heating	Lodging - Guest Room Controls	LodgUnit	Existing	-179.23	15	\$260.00	0%	0%	\$10.00	0.00	0.00	AEG-BEST
Warehouse, Controlled Atm.	Office Equipment	Data Center - Best Practice Measures	sqft	Existing	0.02	5	\$0.00	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse, Controlled Atm.	Cooling	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.01	0%	0%	\$0.03	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse, Controlled Atm.	Ventilation	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.01	0%	0%	\$0.03	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse, Controlled Atm.	Interior Lighting	Data Center - Commercially Available Measures	sqft	Existing	0.02	8	\$0.01	0%	0%	\$0.03	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse, Controlled Atm.	Office Equipment	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.01	0%	0%	\$0.03	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse, Controlled Atm.	Cooling	Data Center - Cutting Edge Measures	sqft	Existing	0.02	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse, Controlled Atm.	Office Equipment	Data Center - Cutting Edge Measures	sqft	Existing	0.00	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse, Controlled Atm.	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	Existing	2,994.90	18	\$4,092.80	0%	0%	\$0.10	0.00	0.00	7th Power Plan
Warehouse, Controlled Atm.	Miscellaneous	Pool Pump - Timer	perBldg	Existing	0.00	10	\$85.22	15%	75%	\$0.00	0.00	0.00	Ontario Power TRM

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Warehouse, Controlled Atm.	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	Existing	29,526.82	6	\$35.93	1%	3%	\$0.00	0.00	22.71	7th Power Plan
Warehouse, Controlled Atm.	Cooling	Advanced New Construction Designs	sqft	Existing	0.34	25	\$4.11	0%	0%	\$0.11	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Heating	Advanced New Construction Designs	sqft	Existing	1.61	25	\$4.11	0%	0%	\$0.11	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Ventilation	Advanced New Construction Designs	sqft	Existing	0.16	25	\$4.11	0%	0%	\$0.11	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Water Heating	Advanced New Construction Designs	sqft	Existing	0.07	25	\$4.11	0%	0%	\$0.11	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Interior Lighting	Advanced New Construction Designs	sqft	Existing	0.46	25	\$4.11	0%	0%	\$0.11	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Exterior Lighting	Advanced New Construction Designs	sqft	Existing	0.10	25	\$4.11	0%	0%	\$0.11	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Cooling	Strategic Energy Management	sqft	Existing	0.05	3	\$0.43	3%	11%	\$0.12	1.67	1.82	AEG Research
Warehouse, Controlled Atm.	Heating	Strategic Energy Management	sqft	Existing	0.24	3	\$0.43	3%	11%	\$0.12	3.36	3.23	AEG Research
Warehouse, Controlled Atm.	Ventilation	Strategic Energy Management	sqft	Existing	0.02	3	\$0.43	3%	11%	\$0.12	2.16	2.55	AEG Research
Warehouse, Controlled Atm.	Water Heating	Strategic Energy Management	sqft	Existing	0.01	3	\$0.43	3%	11%	\$0.12	0.39	0.63	AEG Research
Warehouse, Controlled Atm.	Interior Lighting	Strategic Energy Management	sqft	Existing	0.07	3	\$0.43	3%	11%	\$0.12	5.87	7.78	AEG Research
Warehouse, Controlled Atm.	Exterior Lighting	Strategic Energy Management	sqft	Existing	0.02	3	\$0.43	3%	11%	\$0.12	1.27	1.78	AEG Research
Warehouse, Controlled Atm.	Refrigeration	Strategic Energy Management	sqft	Existing	0.61	3	\$0.43	3%	11%	\$0.12	56.55	56.24	AEG Research
Warehouse, Controlled Atm.	Office Equipment	Strategic Energy Management	sqft	Existing	0.01	3	\$0.43	3%	11%	\$0.12	0.93	0.71	AEG Research
Warehouse, Controlled Atm.	Cooling	Commissioning	sqft	Existing	0.06	3	\$0.44	0%	0%	\$0.07	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Heating	Commissioning	sqft	Existing	0.33	3	\$0.44	0%	0%	\$0.07	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Ventilation	Commissioning	sqft	Existing	0.03	3	\$0.44	0%	0%	\$0.07	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Water Heating	Commissioning	sqft	Existing	0.00	3	\$0.44	0%	0%	\$0.07	0.00	0.00	AEG Research

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Warehouse, Controlled Atm.	Interior Lighting	Commissioning	sqft	Existing	0.08	3	\$0.44	0%	0%	\$0.07	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Exterior Lighting	Commissioning	sqft	Existing	0.02	3	\$0.44	0%	0%	\$0.07	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Refrigeration	Commissioning	sqft	Existing	1.40	3	\$0.44	0%	0%	\$0.07	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Cooling	Retrocommissioning	sqft	Existing	0.07	3	\$0.28	11%	73%	\$0.04	19.00	20.02	AEG Research
Warehouse, Controlled Atm.	Heating	Retrocommissioning	sqft	Existing	0.34	3	\$0.28	11%	73%	\$0.04	37.64	35.25	AEG Research
Warehouse, Controlled Atm.	Ventilation	Retrocommissioning	sqft	Existing	0.03	3	\$0.28	11%	73%	\$0.04	24.39	27.98	AEG Research
Warehouse, Controlled Atm.	Water Heating	Retrocommissioning	sqft	Existing	0.00	3	\$0.28	11%	73%	\$0.04	1.41	2.27	AEG Research
Warehouse, Controlled Atm.	Interior Lighting	Retrocommissioning	sqft	Existing	0.08	3	\$0.28	11%	73%	\$0.04	54.43	70.67	AEG Research
Warehouse, Controlled Atm.	Exterior Lighting	Retrocommissioning	sqft	Existing	0.02	3	\$0.28	11%	73%	\$0.04	11.79	16.19	AEG Research
Warehouse, Controlled Atm.	Refrigeration	Retrocommissioning	sqft	Existing	1.48	3	\$0.28	11%	73%	\$0.04	1,084.89	1,036.42	AEG Research
Warehouse, Controlled Atm.	Interior Lighting	Fruit Storage - Lighting Controls	sqft	Existing	0.06	10	\$0.09	0%	0%	\$0.14	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse, Controlled Atm.	Refrigeration	Fruit Storage Refrigeration Retrofit	sqft	Existing	4.61	10	\$1.09	0%	0%	\$0.03	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse, Controlled Atm.	Refrigeration	Fruit Storage Refrigeration Tuneup	sqft	Existing	1.19	3	\$0.23	0%	0%	\$0.06	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse, Controlled Atm.	Refrigeration	Fruit Storage Retrofit - CO2 Scrub	sqft	Existing	2.22	10	\$3.13	0%	0%	\$0.19	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse, Controlled Atm.	Refrigeration	Fruit Storage Retrofit - Membrane	sqft	Existing	0.44	10	\$0.68	0%	0%	\$0.20	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse, Controlled Atm.	Cooling	Insulation - Ceiling	sqft roof	New	0.00	45	\$1.28	15%	50%	\$0.21	0.00	0.00	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Heating	Insulation - Ceiling	sqft roof	New	0.42	45	\$1.28	15%	50%	\$0.21	13.74	12.71	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Ventilation	Insulation - Ceiling	sqft roof	New	0.03	45	\$1.28	15%	50%	\$0.21	7.65	7.91	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Cooling	Insulation - Ducting	sqft duct	New	0.05	20	\$0.84	15%	50%	\$0.91	4.20	4.02	Building Energy Simulation Tool

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Warehouse, Controlled Atm.	Heating	Insulation - Ducting	sqft duct	New	0.02	20	\$0.84	15%	50%	\$0.91	0.76	0.71	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Ventilation	Insulation - Ducting	sqft duct	New	0.00	20	\$0.84	15%	50%	\$0.91	0.42	0.44	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Cooling	Building Shell - Cool Roofs	sqft roof	New	0.10	20	\$0.78	45%	50%	\$10.00	1.26	1.21	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Heating	Building Shell - Cool Roofs	sqft roof	New	-0.27	20	\$0.78	45%	50%	\$10.00	-1.26	-1.18	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Ventilation	Building Shell - Cool Roofs	sqft roof	New	-0.02	20	\$0.78	45%	50%	\$10.00	-0.70	-0.73	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Cooling	Insulation - Wall Cavity	sqft wall	New	-0.01	45	\$0.78	15%	50%	\$0.13	-0.10	-0.09	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Heating	Insulation - Wall Cavity	sqft wall	New	0.44	45	\$0.78	15%	50%	\$0.13	2.68	2.48	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Ventilation	Insulation - Wall Cavity	sqft wall	New	0.03	45	\$0.78	15%	50%	\$0.13	1.47	1.51	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Cooling	HVAC - Duct Repair and Sealing	tonCool	New	9.80	18	\$0.57	15%	50%	\$0.00	1.56	1.48	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Heating	HVAC - Duct Repair and Sealing	tonCool	New	17.27	18	\$0.57	15%	50%	\$0.00	1.03	0.95	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Ventilation	HVAC - Duct Repair and Sealing	tonCool	New	1.21	18	\$0.57	15%	50%	\$0.00	0.56	0.59	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Cooling	Windows - High Efficiency Glazing	sqft window	New	2.16	30	\$35.93	66%	66%	\$0.11	0.00	0.00	7th Power Plan
Warehouse, Controlled Atm.	Heating	Windows - High Efficiency Glazing	sqft window	New	23.14	30	\$35.93	66%	66%	\$0.11	0.00	0.00	7th Power Plan
Warehouse, Controlled Atm.	Ventilation	Windows - High Efficiency Glazing	sqft window	New	0.95	30	\$35.93	66%	66%	\$0.11	0.00	0.00	7th Power Plan
Warehouse, Controlled Atm.	Cooling	Chiller - Chilled Water Reset	ChillCtrl	New	2,612.29	10	\$884.85	15%	75%	\$0.04	0.94	0.86	AEG-BEST
Warehouse, Controlled Atm.	Cooling	Chiller - Chilled Water Variable-Flow System	HP cool	New	103.84	15	\$332.55	15%	75%	\$0.30	6.43	5.93	AEG-BEST
Warehouse, Controlled Atm.	Cooling	Chiller - Variable Speed Fans	HP fan	New	382.23	15	\$208.36	15%	75%	\$0.05	2.36	2.18	New Jersey TRM
Warehouse, Controlled Atm.	Cooling	Water-Cooled Chiller - Condenser Water Reset	ChillCtrl	New	11,654.83	10	\$884.85	15%	75%	\$0.01	0.42	0.38	AEG-BEST
Warehouse, Controlled Atm.	Cooling	HVAC - Economizer	HP cool	New	54.81	10	\$168.42	18%	75%	\$0.36	5.97	5.51	AEG-BEST

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Warehouse, Controlled Atm.	Heating	Space Heating - Heat Recovery Ventilator	CFM	New	7.32	14	\$5.08	6%	75%	\$0.08	18.10	15.74	7th Power Plan
Warehouse, Controlled Atm.	Ventilation	Ventilation - ECM on VAV Boxes	sqft	New	0.08	18	\$0.25	15%	20%	\$0.20	2.70	2.82	7th Power Plan
Warehouse, Controlled Atm.	Ventilation	Ventilation - Variable Speed Control	sqft	New	0.01	15	\$181.39	19%	50%	\$1,210.02	1.50	1.59	AEG-BEST
Warehouse, Controlled Atm.	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.25	15%	75%	\$3.91	1.24	1.32	7th Power Plan
Warehouse, Controlled Atm.	Cooling	Destratification Fans (HVLS)	Strat Fan	New	1,200.82	15	\$7,270.90	15%	15%	\$0.06	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Heating	Destratification Fans (HVLS)	Strat Fan	New	11,983.54	15	\$7,270.90	15%	15%	\$0.06	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Cooling	RTU - Maintenance	tonCool	New	28.40	3	\$35.00	15%	45%	\$0.35	0.40	0.38	AEG Research
Warehouse, Controlled Atm.	Cooling	RTU - Advanced Controls	sqft	New	0.04	15	\$0.07	15%	45%	\$0.15	1.44	1.35	7th Power Plan
Warehouse, Controlled Atm.	Cooling	RTU - Evaporative Precooler	tonCool	New	57.61	15	\$681.62	15%	75%	\$1.08	9.01	8.51	AEG Research
Warehouse, Controlled Atm.	Cooling	Ductless Mini Split Heat Pump	tonCool	New	115.56	15	\$3,359.26	15%	25%	\$0.46	0.13	0.12	7th Power Plan
Warehouse, Controlled Atm.	Heating	Ductless Mini Split Heat Pump	tonCool	New	623.97	15	\$3,359.26	15%	25%	\$0.46	6.62	5.91	7th Power Plan
Warehouse, Controlled Atm.	Cooling	Thermostat - WiFi/Interactive	sqft	New	0.15	5	\$0.66	30%	40%	\$0.13	0.44	0.42	7th Power Plan
Warehouse, Controlled Atm.	Heating	Thermostat - WiFi/Interactive	sqft	New	0.78	5	\$0.66	30%	40%	\$0.13	0.88	0.76	7th Power Plan
Warehouse, Controlled Atm.	Ventilation	Thermostat - WiFi/Interactive	sqft	New	0.06	5	\$0.66	30%	40%	\$0.13	0.49	0.52	7th Power Plan
Warehouse, Controlled Atm.	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	New	59.84	10	\$8.35	25%	65%	\$0.01	0.39	0.56	Illinois TRM
Warehouse, Controlled Atm.	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	New	62.37	10	\$11.64	25%	65%	-\$0.13	0.21	0.29	7th Power Plan
Warehouse, Controlled Atm.	Water Heating	Water Heater - High Efficiency Circulation Pump	WHUnits	New	58.58	15	\$36.75	15%	75%	\$0.03	0.87	1.05	Hawaii TRM
Warehouse, Controlled Atm.	Water Heating	Water Heater - Pipe Insulation	PipeFeet	New	261.53	15	\$14.88	1%	75%	\$0.00	1.81	2.44	AEG-BEST
Warehouse, Controlled Atm.	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	New	41.39	4	\$144.04	25%	65%	-\$0.43	0.11	0.17	7th Power Plan

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Warehouse, Controlled Atm.	Water Heating	Water Heater - Thermostat Setback	WHunits	New	58.36	2	\$5.00	15%	75%	\$0.02	0.09	0.14	Illinois TRM
Warehouse, Controlled Atm.	Water Heating	Water Heater - Solar System	PipeFeet	New	907.87	20	\$215.28	1%	30%	\$0.01	2.53	3.39	AEG-BEST
Warehouse, Controlled Atm.	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.23	15	\$0.35	13%	38%	\$0.11	73.51	77.48	7th Power Plan
Warehouse, Controlled Atm.	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.31	15	\$0.58	13%	38%	\$0.13	98.76	105.44	7th Power Plan
Warehouse, Controlled Atm.	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	New	636.06	15	\$54.41	1%	3%	\$0.01	0.53	0.60	7th Power Plan
Warehouse, Controlled Atm.	Interior Lighting	Interior Lighting - Timeclocks and Timers	occ sens	New	0.00	8	\$111.67	7%	15%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Warehouse, Controlled Atm.	Interior Lighting	Interior Lighting - Skylights	1000 sqft	New	0.00	15	\$1,006.35	18%	33%	\$0.00	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	1000 sqft	New	33.83	16	\$1,807.69	5%	15%	\$3.49	1.36	1.56	7th Power Plan
Warehouse, Controlled Atm.	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	New	361.32	11	\$30.80	15%	50%	\$0.01	4.37	4.84	Illinois TRM
Warehouse, Controlled Atm.	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	ELtg Watts	New	1.75	8	\$0.63	15%	25%	\$0.03	3.84	5.07	7th Power Plan
Warehouse, Controlled Atm.	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	New	74.54	8	\$55.10	15%	25%	\$0.07	2.02	2.65	Pacific Gas and Electric Research
Warehouse, Controlled Atm.	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	New	91.39	7	\$3,400.00	15%	30%	\$3.81	3.28	4.38	AEG Research
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Anti-Sweat Heater	Fridge Feet	New	499.88	8	\$48.18	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	New	11,969.79	4	\$10.44	0%	0%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	New	80,088.06	16	\$165.20	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	New	2,636.94	15	\$335.85	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Strip Curtain	Walkin Door	New	1,400.14	2	\$10.41	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBtuh	New	42.72	15	\$45.43	0%	0%	\$0.11	0.00	0.00	Annual Energy Outlook, 2015
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	New	885.72	15	\$313.82	0%	0%	\$0.04	0.00	0.00	Annual Energy Outlook, 2015

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Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	New	53,792.99	10	\$506.05	0%	0%	\$0.00	0.00	0.00	Vermont TRM
Warehouse, Controlled Atm.	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	New	347.50	6	\$45.41	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Warehouse, Controlled Atm.	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	New	28.00	8	\$3.72	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Warehouse, Controlled Atm.	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	New	6,675.91	5	\$45.85	0%	0%	\$0.00	0.00	0.00	Illinois TRM
Warehouse, Controlled Atm.	Refrigeration	Grocery - ECMs for Display Cases	Fridge Case	New	1,439.89	16	\$165.20	5%	25%	\$0.01	0.82	0.74	7th Power Plan
Warehouse, Controlled Atm.	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	New	1,395.30	5	\$187.94	25%	75%	\$0.03	18.03	15.17	Illinois TRM
Warehouse, Controlled Atm.	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	New	879.63	18	\$8,526.67	25%	50%	\$0.62	5.86	6.13	7th Power Plan
Warehouse, Controlled Atm.	Office Equipment	Office Equipment - Smart Power Strips	Smart Strip	New	5.79	4	\$41.63	10%	50%	\$1.66	0.63	0.47	7th Power Plan
Warehouse, Controlled Atm.	Cooling	Lodging - Guest Room Controls	LodgUnit	New	54.43	15	\$260.00	0%	0%	\$10.00	0.00	0.00	AEG-BEST
Warehouse, Controlled Atm.	Heating	Lodging - Guest Room Controls	LodgUnit	New	-179.90	15	\$260.00	0%	0%	\$10.00	0.00	0.00	AEG-BEST
Warehouse, Controlled Atm.	Office Equipment	Data Center - Best Practice Measures	sqft	New	0.02	5	\$0.00	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse, Controlled Atm.	Cooling	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.01	0%	0%	\$0.03	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse, Controlled Atm.	Ventilation	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.01	0%	0%	\$0.03	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse, Controlled Atm.	Interior Lighting	Data Center - Commercially Available Measures	sqft	New	0.02	8	\$0.01	0%	0%	\$0.03	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse, Controlled Atm.	Office Equipment	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.01	0%	0%	\$0.03	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse, Controlled Atm.	Cooling	Data Center - Cutting Edge Measures	sqft	New	0.01	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse, Controlled Atm.	Office Equipment	Data Center - Cutting Edge Measures	sqft	New	0.00	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse, Controlled Atm.	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	New	2,351.05	18	\$4,092.80	0%	0%	\$0.11	0.00	0.00	7th Power Plan
Warehouse, Controlled Atm.	Miscellaneous	Pool Pump - Timer	perBldg	New	0.00	10	\$85.22	15%	75%	\$0.00	0.00	0.00	Ontario Power TRM

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Warehouse, Controlled Atm.	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	New	29,526.82	6	\$35.93	1%	3%	\$0.00	0.00	2.03	7th Power Plan
Warehouse, Controlled Atm.	Cooling	Advanced New Construction Designs	sqft	New	0.30	25	\$4.11	10%	15%	\$0.12	4.11	3.90	AEG Research
Warehouse, Controlled Atm.	Heating	Advanced New Construction Designs	sqft	New	1.57	25	\$4.11	10%	15%	\$0.12	7.99	7.42	AEG Research
Warehouse, Controlled Atm.	Ventilation	Advanced New Construction Designs	sqft	New	0.11	25	\$4.11	10%	15%	\$0.12	4.43	4.64	AEG Research
Warehouse, Controlled Atm.	Water Heating	Advanced New Construction Designs	sqft	New	0.06	25	\$4.11	10%	15%	\$0.12	0.97	1.12	AEG Research
Warehouse, Controlled Atm.	Interior Lighting	Advanced New Construction Designs	sqft	New	0.42	25	\$4.11	10%	15%	\$0.12	13.54	14.37	AEG Research
Warehouse, Controlled Atm.	Exterior Lighting	Advanced New Construction Designs	sqft	New	0.09	25	\$4.11	10%	15%	\$0.12	2.97	3.27	AEG Research
Warehouse, Controlled Atm.	Cooling	Strategic Energy Management	sqft	New	0.04	3	\$0.40	3%	11%	\$0.12	0.12	0.11	AEG Research
Warehouse, Controlled Atm.	Heating	Strategic Energy Management	sqft	New	0.24	3	\$0.40	3%	11%	\$0.12	0.24	0.20	AEG Research
Warehouse, Controlled Atm.	Ventilation	Strategic Energy Management	sqft	New	0.02	3	\$0.40	3%	11%	\$0.12	0.13	0.14	AEG Research
Warehouse, Controlled Atm.	Water Heating	Strategic Energy Management	sqft	New	0.01	3	\$0.40	3%	11%	\$0.12	0.03	0.04	AEG Research
Warehouse, Controlled Atm.	Interior Lighting	Strategic Energy Management	sqft	New	0.06	3	\$0.40	3%	11%	\$0.12	0.40	0.53	AEG Research
Warehouse, Controlled Atm.	Exterior Lighting	Strategic Energy Management	sqft	New	0.01	3	\$0.40	3%	11%	\$0.12	0.09	0.13	AEG Research
Warehouse, Controlled Atm.	Refrigeration	Strategic Energy Management	sqft	New	0.58	3	\$0.40	3%	11%	\$0.12	3.85	3.38	AEG Research
Warehouse, Controlled Atm.	Office Equipment	Strategic Energy Management	sqft	New	0.01	3	\$0.40	3%	11%	\$0.12	0.06	0.04	AEG Research
Warehouse, Controlled Atm.	Cooling	Commissioning	sqft	New	0.06	3	\$0.42	11%	73%	\$0.07	1.26	1.19	AEG Research
Warehouse, Controlled Atm.	Heating	Commissioning	sqft	New	0.33	3	\$0.42	11%	73%	\$0.07	2.53	2.17	AEG Research
Warehouse, Controlled Atm.	Ventilation	Commissioning	sqft	New	0.02	3	\$0.42	11%	73%	\$0.07	1.40	1.50	AEG Research
Warehouse, Controlled Atm.	Water Heating	Commissioning	sqft	New	0.00	3	\$0.42	11%	73%	\$0.07	0.10	0.16	AEG Research

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Warehouse, Controlled Atm.	Interior Lighting	Commissioning	sqft	New	0.07	3	\$0.42	11%	73%	\$0.07	3.60	4.77	AEG Research
Warehouse, Controlled Atm.	Exterior Lighting	Commissioning	sqft	New	0.02	3	\$0.42	11%	73%	\$0.07	0.79	1.14	AEG Research
Warehouse, Controlled Atm.	Refrigeration	Commissioning	sqft	New	1.36	3	\$0.42	11%	73%	\$0.07	69.12	61.13	AEG Research
Warehouse, Controlled Atm.	Cooling	Retrocommissioning	sqft	New	0.06	3	\$0.27	0%	0%	\$0.05	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Heating	Retrocommissioning	sqft	New	0.33	3	\$0.27	0%	0%	\$0.05	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Ventilation	Retrocommissioning	sqft	New	0.02	3	\$0.27	0%	0%	\$0.05	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Water Heating	Retrocommissioning	sqft	New	0.00	3	\$0.27	0%	0%	\$0.05	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Interior Lighting	Retrocommissioning	sqft	New	0.07	3	\$0.27	0%	0%	\$0.05	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Exterior Lighting	Retrocommissioning	sqft	New	0.02	3	\$0.27	0%	0%	\$0.05	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Refrigeration	Retrocommissioning	sqft	New	1.36	3	\$0.27	0%	0%	\$0.05	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Interior Lighting	Fruit Storage - Lighting Controls	sqft	New	0.05	10	\$0.09	0%	0%	\$0.14	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse, Controlled Atm.	Refrigeration	Fruit Storage Refrigeration Retrofit	sqft	New	4.20	10	\$1.09	0%	0%	\$0.03	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse, Controlled Atm.	Refrigeration	Fruit Storage Refrigeration Tuneup	sqft	New	1.09	3	\$0.23	0%	0%	\$0.07	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse, Controlled Atm.	Refrigeration	Fruit Storage Retrofit - CO2 Scrub	sqft	New	2.04	10	\$3.13	0%	0%	\$0.21	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse, Controlled Atm.	Refrigeration	Fruit Storage Retrofit - Membrane	sqft	New	0.41	10	\$0.68	0%	0%	\$0.22	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Data Center	Cooling	Insulation - Ceiling	sqft roof	Existing	2.75	45	\$1.28	15%	35%	\$0.02	0.10	0.09	Building Energy Simulation Tool
Data Center	Heating	Insulation - Ceiling	sqft roof	Existing	0.26	45	\$1.28	15%	35%	\$0.02	0.00	0.00	Building Energy Simulation Tool
Data Center	Ventilation	Insulation - Ceiling	sqft roof	Existing	1.62	45	\$1.28	15%	35%	\$0.02	0.06	0.06	Building Energy Simulation Tool
Data Center	Cooling	Insulation - Ducting	sqft duct	Existing	1.00	20	\$0.84	15%	35%	\$0.06	0.03	0.03	Building Energy Simulation Tool

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Data Center	Heating	Insulation - Ducting	sqft duct	Existing	0.01	20	\$0.84	15%	35%	\$0.06	0.00	0.00	Building Energy Simulation Tool
Data Center	Ventilation	Insulation - Ducting	sqft duct	Existing	0.07	20	\$0.84	15%	35%	\$0.06	0.00	0.00	Building Energy Simulation Tool
Data Center	Cooling	Building Shell - Cool Roofs	sqft roof	Existing	3.78	20	\$0.78	45%	50%	\$0.03	0.03	0.03	Building Energy Simulation Tool
Data Center	Heating	Building Shell - Cool Roofs	sqft roof	Existing	-0.18	20	\$0.78	45%	50%	\$0.03	0.00	0.00	Building Energy Simulation Tool
Data Center	Ventilation	Building Shell - Cool Roofs	sqft roof	Existing	-1.11	20	\$0.78	45%	50%	\$0.03	-0.01	-0.01	Building Energy Simulation Tool
Data Center	Cooling	Insulation - Wall Cavity	sqft wall	Existing	0.23	45	\$0.78	15%	35%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Data Center	Heating	Insulation - Wall Cavity	sqft wall	Existing	1.87	45	\$0.78	15%	35%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Data Center	Ventilation	Insulation - Wall Cavity	sqft wall	Existing	11.61	45	\$0.78	15%	35%	\$0.00	0.08	0.09	Building Energy Simulation Tool
Data Center	Cooling	HVAC - Duct Repair and Sealing	tonCool	Existing	35.30	18	\$0.57	15%	50%	\$0.00	0.02	0.02	Building Energy Simulation Tool
Data Center	Heating	HVAC - Duct Repair and Sealing	tonCool	Existing	2.51	18	\$0.57	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Data Center	Ventilation	HVAC - Duct Repair and Sealing	tonCool	Existing	15.62	18	\$0.57	15%	50%	\$0.00	0.01	0.01	Building Energy Simulation Tool
Data Center	Cooling	Windows - High Efficiency Glazing	sqft window	Existing	71.85	30	\$35.93	48%	48%	\$0.02	0.00	0.00	7th Power Plan
Data Center	Heating	Windows - High Efficiency Glazing	sqft window	Existing	14.40	30	\$35.93	48%	48%	\$0.02	0.00	0.00	7th Power Plan
Data Center	Ventilation	Windows - High Efficiency Glazing	sqft window	Existing	50.93	30	\$35.93	48%	48%	\$0.02	0.00	0.00	7th Power Plan
Data Center	Cooling	Chiller - Chilled Water Reset	ChillCtrl	Existing	19,267.67	10	\$884.85	15%	75%	\$0.01	0.04	0.03	AEG-BEST
Data Center	Cooling	Chiller - Chilled Water Variable-Flow System	HP cool	Existing	759.17	15	\$332.55	15%	75%	\$0.04	0.19	0.19	AEG-BEST
Data Center	Cooling	Chiller - Variable Speed Fans	HP fan	Existing	2,828.13	15	\$208.36	15%	75%	\$0.01	0.07	0.07	New Jersey TRM
Data Center	Cooling	Water-Cooled Chiller - Condenser Water Reset	ChillCtrl	Existing	88,427.54	10	\$884.85	15%	75%	\$0.00	0.06	0.06	AEG-BEST
Data Center	Cooling	HVAC - Economizer	HP cool	Existing	365.81	10	\$168.42	18%	75%	\$0.05	0.29	0.28	AEG-BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Data Center	Heating	Space Heating - Heat Recovery Ventilator	CFM	Existing	0.08	14	\$5.08	3%	75%	\$6.28	0.01	0.01	7th Power Plan
Data Center	Ventilation	Ventilation - ECM on VAV Boxes	sqft	Existing	4.10	18	\$0.25	15%	20%	\$0.00	0.04	0.04	7th Power Plan
Data Center	Ventilation	Ventilation - Variable Speed Control	sqft	Existing	0.49	15	\$181.39	13%	50%	\$28.81	0.03	0.04	AEG-BEST
Data Center	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.22	15	\$0.25	15%	75%	\$0.09	0.03	0.03	7th Power Plan
Data Center	Cooling	Destratification Fans (HVLS)	Strat Fan	Existing	39,842.67	15	\$7,270.90	15%	15%	\$0.02	0.00	0.00	AEG Research
Data Center	Heating	Destratification Fans (HVLS)	Strat Fan	Existing	7,388.35	15	\$7,270.90	15%	15%	\$0.02	0.00	0.00	AEG Research
Data Center	Cooling	RTU - Maintenance	tonCool	Existing	169.62	3	\$35.00	15%	45%	\$0.06	0.06	0.06	AEG Research
Data Center	Cooling	RTU - Advanced Controls	sqft	Existing	1.34	15	\$0.07	15%	45%	\$0.00	0.04	0.04	7th Power Plan
Data Center	Cooling	RTU - Evaporative Precooler	tonCool	Existing	345.51	15	\$681.62	15%	75%	\$0.18	0.21	0.21	AEG Research
Data Center	Cooling	Ductless Mini Split Heat Pump	tonCool	Existing	771.51	15	\$3,359.26	15%	25%	\$0.35	0.00	0.00	7th Power Plan
Data Center	Heating	Ductless Mini Split Heat Pump	tonCool	Existing	81.46	15	\$3,359.26	15%	25%	\$0.35	0.00	0.00	7th Power Plan
Data Center	Cooling	Thermostat - WiFi/Interactive	sqft	Existing	4.81	5	\$0.66	30%	40%	\$0.01	0.08	0.08	7th Power Plan
Data Center	Heating	Thermostat - WiFi/Interactive	sqft	Existing	0.49	5	\$0.66	30%	40%	\$0.01	0.00	0.00	7th Power Plan
Data Center	Ventilation	Thermostat - WiFi/Interactive	sqft	Existing	3.00	5	\$0.66	30%	40%	\$0.01	0.05	0.06	7th Power Plan
Data Center	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	Existing	114.51	10	\$8.35	25%	65%	\$0.01	0.00	0.00	Illinois TRM
Data Center	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	Existing	118.65	10	\$11.64	25%	65%	-\$0.08	0.00	0.00	7th Power Plan
Data Center	Water Heating	Water Heater - High Efficiency Circulation Pump	WHUnits	Existing	63.96	15	\$36.75	15%	75%	\$0.03	0.00	0.00	Hawaii TRM
Data Center	Water Heating	Water Heater - Pipe Insulation	PipeFeet	Existing	515.93	15	\$14.88	16%	75%	\$0.00	0.00	0.00	AEG-BEST
Data Center	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	Existing	77.69	4	\$144.04	25%	65%	-\$0.25	0.00	0.00	7th Power Plan
Data Center	Water Heating	Water Heater - Thermostat Setback	WHUnits	Existing	63.51	2	\$5.00	15%	75%	\$0.02	0.00	0.00	Illinois TRM
Data Center	Water Heating	Water Heater - Solar System	PipeFeet	Existing	1,775.12	20	\$215.28	1%	30%	\$0.01	0.00	0.00	AEG-BEST

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Data Center	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.83	15	\$0.35	3%	23%	\$0.03	0.04	0.04	7th Power Plan
Data Center	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	1.15	15	\$0.58	3%	23%	\$0.04	0.05	0.06	7th Power Plan
Data Center	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	Existing	2,423.35	15	\$54.41	1%	3%	\$0.00	0.00	0.00	7th Power Plan
Data Center	Interior Lighting	Interior Lighting - Timeclocks and Timers	occ sens	Existing	0.00	8	\$111.67	7%	15%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Data Center	Interior Lighting	Interior Lighting - Skylights	1000 sqft	Existing	0.00	15	\$1,006.35	15%	25%	\$0.00	0.00	0.00	AEG Research
Data Center	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	1000 sqft	Existing	525.43	16	\$1,807.69	5%	15%	\$0.25	0.01	0.01	7th Power Plan
Data Center	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	Existing	5,509.59	11	\$30.80	15%	50%	\$0.00	0.03	0.04	Illinois TRM
Data Center	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	ELtg Watts	Existing	2.15	8	\$0.63	15%	25%	\$0.03	0.01	0.01	7th Power Plan
Data Center	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	Existing	75.49	8	\$55.10	15%	25%	\$0.08	0.00	0.01	Pacific Gas and Electric Research
Data Center	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	Existing	90.26	7	\$3,400.00	15%	30%	\$4.21	0.01	0.01	AEG Research
Data Center	Refrigeration	Refrigeration - Anti-Sweat Heater	Fridge Feet	Existing	21.28	8	\$48.18	0%	0%	\$0.35	0.00	0.00	7th Power Plan
Data Center	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	Existing	41.41	4	\$10.44	0%	0%	\$0.07	0.00	0.00	Michigan Energy Measures Database
Data Center	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	Existing	285.98	16	\$165.20	0%	0%	\$0.06	0.00	0.00	7th Power Plan
Data Center	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	Existing	28.68	15	\$335.85	0%	0%	\$1.24	0.00	0.00	7th Power Plan
Data Center	Refrigeration	Refrigeration - Strip Curtain	WalkIn Door	Existing	31.14	2	\$10.41	0%	0%	\$0.16	0.00	0.00	7th Power Plan
Data Center	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	Existing	0.44	15	\$45.43	0%	0%	\$10.33	0.00	0.00	Annual Energy Outlook, 2015
Data Center	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	Existing	9.63	15	\$313.82	0%	0%	\$3.44	0.00	0.00	Annual Energy Outlook, 2015
Data Center	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	Existing	190.16	10	\$506.05	0%	0%	\$0.35	0.00	0.00	Vermont TRM
Data Center	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	Existing	13.26	6	\$45.41	0%	0%	\$0.65	0.00	0.00	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Data Center	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	Existing	1.07	8	\$3.72	0%	0%	\$0.54	0.00	0.00	7th Power Plan
Data Center	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	Existing	251.22	5	\$45.85	0%	0%	\$0.04	0.00	0.00	Illinois TRM
Data Center	Refrigeration	Grocery - ECMs for Display Cases	Fridge Case	Existing	54.94	16	\$165.20	0%	0%	\$0.31	0.00	0.00	7th Power Plan
Data Center	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	Existing	1,405.23	5	\$187.94	25%	75%	\$0.03	0.00	0.00	Illinois TRM
Data Center	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	Existing	43,973.58	18	\$8,526.67	25%	50%	\$0.01	0.08	0.09	7th Power Plan
Data Center	Office Equipment	Office Equipment - Smart Power Strips	Smart Strip	Existing	2,943.62	4	\$41.63	10%	50%	\$0.00	0.58	0.40	7th Power Plan
Data Center	Cooling	Lodging - Guest Room Controls	LodgUnit	Existing	2,146.28	15	\$260.00	0%	0%	\$0.01	0.00	0.00	AEG-BEST
Data Center	Heating	Lodging - Guest Room Controls	LodgUnit	Existing	-123.51	15	\$260.00	0%	0%	\$0.01	0.00	0.00	AEG-BEST
Data Center	Office Equipment	Data Center - Best Practice Measures	sqft	Existing	13.12	5	\$0.98	20%	75%	\$0.01	1.82	1.70	com-datacenters-7p_v5p.xlsx
Data Center	Cooling	Data Center - Commercially Available Measures	sqft	Existing	0.09	8	\$0.74	10%	35%	\$0.03	0.00	0.00	com-datacenters-7p_v5p.xlsx
Data Center	Ventilation	Data Center - Commercially Available Measures	sqft	Existing	0.05	8	\$0.74	10%	35%	\$0.03	0.00	0.00	com-datacenters-7p_v5p.xlsx
Data Center	Interior Lighting	Data Center - Commercially Available Measures	sqft	Existing	0.06	8	\$0.74	10%	35%	\$0.03	0.00	0.00	com-datacenters-7p_v5p.xlsx
Data Center	Office Equipment	Data Center - Commercially Available Measures	sqft	Existing	2.88	8	\$0.74	10%	35%	\$0.03	0.18	0.17	com-datacenters-7p_v5p.xlsx
Data Center	Cooling	Data Center - Cutting Edge Measures	sqft	Existing	0.44	6	\$0.04	10%	15%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Data Center	Office Equipment	Data Center - Cutting Edge Measures	sqft	Existing	1.05	6	\$0.04	10%	15%	\$0.00	0.01	0.01	com-datacenters-7p_v5p.xlsx
Data Center	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	Existing	117,582.94	18	\$4,092.80	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Data Center	Miscellaneous	Pool Pump - Timer	perBldg	Existing	0.00	10	\$85.22	15%	75%	\$0.00	0.00	0.00	Ontario Power TRM
Data Center	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	Existing	287,038.24	6	\$35.93	1%	3%	\$0.00	0.00	0.04	7th Power Plan
Data Center	Cooling	Advanced New Construction Designs	sqft	Existing	9.93	25	\$4.11	0%	0%	\$0.02	0.00	0.00	AEG Research

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Data Center	Heating	Advanced New Construction Designs	sqft	Existing	0.97	25	\$4.11	0%	0%	\$0.02	0.00	0.00	AEG Research
Data Center	Ventilation	Advanced New Construction Designs	sqft	Existing	5.99	25	\$4.11	0%	0%	\$0.02	0.00	0.00	AEG Research
Data Center	Water Heating	Advanced New Construction Designs	sqft	Existing	0.12	25	\$4.11	0%	0%	\$0.02	0.00	0.00	AEG Research
Data Center	Interior Lighting	Advanced New Construction Designs	sqft	Existing	1.65	25	\$4.11	0%	0%	\$0.02	0.00	0.00	AEG Research
Data Center	Exterior Lighting	Advanced New Construction Designs	sqft	Existing	0.32	25	\$4.11	0%	0%	\$0.02	0.00	0.00	AEG Research
Data Center	Cooling	Strategic Energy Management	sqft	Existing	1.42	3	\$2.42	0%	0%	\$0.10	0.00	0.00	AEG Research
Data Center	Heating	Strategic Energy Management	sqft	Existing	0.15	3	\$2.42	0%	0%	\$0.10	0.00	0.00	AEG Research
Data Center	Ventilation	Strategic Energy Management	sqft	Existing	0.91	3	\$2.42	0%	0%	\$0.10	0.00	0.00	AEG Research
Data Center	Water Heating	Strategic Energy Management	sqft	Existing	0.02	3	\$2.42	0%	0%	\$0.10	0.00	0.00	AEG Research
Data Center	Interior Lighting	Strategic Energy Management	sqft	Existing	0.25	3	\$2.42	0%	0%	\$0.10	0.00	0.00	AEG Research
Data Center	Exterior Lighting	Strategic Energy Management	sqft	Existing	0.05	3	\$2.42	0%	0%	\$0.10	0.00	0.00	AEG Research
Data Center	Refrigeration	Strategic Energy Management	sqft	Existing	0.00	3	\$2.42	0%	0%	\$0.10	0.00	0.00	AEG Research
Data Center	Office Equipment	Strategic Energy Management	sqft	Existing	3.53	3	\$2.42	0%	0%	\$0.10	0.00	0.00	AEG Research
Data Center	Cooling	Commissioning	sqft	Existing	1.91	3	\$3.36	0%	0%	\$0.23	0.00	0.00	AEG Research
Data Center	Heating	Commissioning	sqft	Existing	0.19	3	\$3.36	0%	0%	\$0.23	0.00	0.00	AEG Research
Data Center	Ventilation	Commissioning	sqft	Existing	1.23	3	\$3.36	0%	0%	\$0.23	0.00	0.00	AEG Research
Data Center	Water Heating	Commissioning	sqft	Existing	0.01	3	\$3.36	0%	0%	\$0.23	0.00	0.00	AEG Research
Data Center	Interior Lighting	Commissioning	sqft	Existing	0.29	3	\$3.36	0%	0%	\$0.23	0.00	0.00	AEG Research
Data Center	Exterior Lighting	Commissioning	sqft	Existing	0.05	3	\$3.36	0%	0%	\$0.23	0.00	0.00	AEG Research
Data Center	Refrigeration	Commissioning	sqft	Existing	0.00	3	\$3.36	0%	0%	\$0.23	0.00	0.00	AEG Research
Data Center	Cooling	Retrocommissioning	sqft	Existing	1.97	3	\$2.13	2%	65%	\$0.15	0.23	0.24	AEG Research
Data Center	Heating	Retrocommissioning	sqft	Existing	0.20	3	\$2.13	2%	65%	\$0.15	0.01	0.01	AEG Research

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Data Center	Ventilation	Retrocommissioning	sqft	Existing	1.27	3	\$2.13	2%	65%	\$0.15	0.16	0.18	AEG Research
Data Center	Water Heating	Retrocommissioning	sqft	Existing	0.01	3	\$2.13	2%	65%	\$0.15	0.00	0.00	AEG Research
Data Center	Interior Lighting	Retrocommissioning	sqft	Existing	0.29	3	\$2.13	2%	65%	\$0.15	0.03	0.04	AEG Research
Data Center	Exterior Lighting	Retrocommissioning	sqft	Existing	0.05	3	\$2.13	2%	65%	\$0.15	0.01	0.01	AEG Research
Data Center	Refrigeration	Retrocommissioning	sqft	Existing	0.00	3	\$2.13	2%	65%	\$0.15	0.00	0.00	AEG Research
Data Center	Interior Lighting	Fruit Storage - Lighting Controls	sqft	Existing	0.21	10	\$0.09	0%	0%	\$0.04	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Data Center	Refrigeration	Fruit Storage Refrigeration Retrofit	sqft	Existing	0.01	10	\$1.09	0%	0%	\$15.06	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Data Center	Refrigeration	Fruit Storage Refrigeration Tuneup	sqft	Existing	0.00	3	\$0.23	0%	0%	\$30.89	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Data Center	Refrigeration	Fruit Storage Retrofit - CO2 Scrub	sqft	Existing	0.00	10	\$3.13	0%	0%	\$89.32	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Data Center	Refrigeration	Fruit Storage Retrofit - Membrane	sqft	Existing	0.00	10	\$0.68	0%	0%	\$96.93	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Data Center	Cooling	Insulation - Ceiling	sqft roof	New	0.00	45	\$1.28	15%	50%	\$0.05	0.00	0.00	Building Energy Simulation Tool
Data Center	Heating	Insulation - Ceiling	sqft roof	New	0.24	45	\$1.28	15%	50%	\$0.05	0.00	0.00	Building Energy Simulation Tool
Data Center	Ventilation	Insulation - Ceiling	sqft roof	New	1.16	45	\$1.28	15%	50%	\$0.05	0.05	0.05	Building Energy Simulation Tool
Data Center	Cooling	Insulation - Ducting	sqft duct	New	1.49	20	\$0.84	15%	50%	\$0.04	0.05	0.05	Building Energy Simulation Tool
Data Center	Heating	Insulation - Ducting	sqft duct	New	0.01	20	\$0.84	15%	50%	\$0.04	0.00	0.00	Building Energy Simulation Tool
Data Center	Ventilation	Insulation - Ducting	sqft duct	New	0.07	20	\$0.84	15%	50%	\$0.04	0.00	0.00	Building Energy Simulation Tool
Data Center	Cooling	Building Shell - Cool Roofs	sqft roof	New	3.32	20	\$0.78	45%	50%	\$0.03	0.02	0.02	Building Energy Simulation Tool
Data Center	Heating	Building Shell - Cool Roofs	sqft roof	New	-0.16	20	\$0.78	45%	50%	\$0.03	0.00	0.00	Building Energy Simulation Tool
Data Center	Ventilation	Building Shell - Cool Roofs	sqft roof	New	-0.78	20	\$0.78	45%	50%	\$0.03	0.00	0.00	Building Energy Simulation Tool
Data Center	Cooling	Insulation - Wall Cavity	sqft wall	New	-0.18	45	\$0.78	15%	50%	\$0.03	0.00	0.00	Building Energy Simulation Tool

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Data Center	Heating	Insulation - Wall Cavity	sqft wall	New	0.24	45	\$0.78	15%	50%	\$0.03	0.00	0.00	Building Energy Simulation Tool
Data Center	Ventilation	Insulation - Wall Cavity	sqft wall	New	1.18	45	\$0.78	15%	50%	\$0.03	0.01	0.01	Building Energy Simulation Tool
Data Center	Cooling	HVAC - Duct Repair and Sealing	tonCool	New	58.64	18	\$0.57	15%	35%	\$0.00	0.01	0.01	Building Energy Simulation Tool
Data Center	Heating	HVAC - Duct Repair and Sealing	tonCool	New	1.90	18	\$0.57	15%	35%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Data Center	Ventilation	HVAC - Duct Repair and Sealing	tonCool	New	9.35	18	\$0.57	15%	35%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Data Center	Cooling	Windows - High Efficiency Glazing	sqft window	New	64.71	30	\$35.93	66%	66%	\$0.02	0.00	0.00	7th Power Plan
Data Center	Heating	Windows - High Efficiency Glazing	sqft window	New	13.13	30	\$35.93	66%	66%	\$0.02	0.00	0.00	7th Power Plan
Data Center	Ventilation	Windows - High Efficiency Glazing	sqft window	New	36.90	30	\$35.93	66%	66%	\$0.02	0.00	0.00	7th Power Plan
Data Center	Cooling	Chiller - Chilled Water Reset	ChillCtrl	New	15,840.03	10	\$884.85	15%	75%	\$0.01	0.01	0.01	AEG-BEST
Data Center	Cooling	Chiller - Chilled Water Variable-Flow System	HP cool	New	631.47	15	\$332.55	15%	75%	\$0.05	0.06	0.05	AEG-BEST
Data Center	Cooling	Chiller - Variable Speed Fans	HP fan	New	2,313.83	15	\$208.36	15%	75%	\$0.01	0.02	0.02	New Jersey TRM
Data Center	Cooling	Water-Cooled Chiller - Condenser Water Reset	ChillCtrl	New	71,677.11	10	\$884.85	15%	75%	\$0.00	0.01	0.01	AEG-BEST
Data Center	Cooling	HVAC - Economizer	HP cool	New	335.88	10	\$168.42	18%	75%	\$0.06	0.07	0.07	AEG-BEST
Data Center	Heating	Space Heating - Heat Recovery Ventilator	CFM	New	0.08	14	\$5.08	6%	75%	\$7.02	0.00	0.00	7th Power Plan
Data Center	Ventilation	Ventilation - ECM on VAV Boxes	sqft	New	3.18	18	\$0.25	15%	20%	\$0.01	0.02	0.02	7th Power Plan
Data Center	Ventilation	Ventilation - Variable Speed Control	sqft	New	0.40	15	\$181.39	19%	50%	\$31.25	0.01	0.01	AEG-BEST
Data Center	Ventilation	Ventilation - Demand Controlled	sqft	New	0.17	15	\$0.25	15%	75%	\$0.10	0.01	0.01	7th Power Plan
Data Center	Cooling	Destratification Fans (HVLS)	Strat Fan	New	35,882.41	15	\$7,270.90	15%	15%	\$0.02	0.00	0.00	AEG Research
Data Center	Heating	Destratification Fans (HVLS)	Strat Fan	New	6,672.68	15	\$7,270.90	15%	15%	\$0.02	0.00	0.00	AEG Research
Data Center	Cooling	RTU - Maintenance	tonCool	New	166.87	3	\$35.00	15%	45%	\$0.06	0.01	0.01	AEG Research
Data Center	Cooling	RTU - Advanced Controls	sqft	New	1.25	15	\$0.07	15%	45%	\$0.01	0.02	0.02	7th Power Plan

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Data Center	Cooling	RTU - Evaporative Precooler	tonCool	New	338.44	15	\$681.62	15%	75%	\$0.19	0.13	0.12	AEG Research
Data Center	Cooling	Ductless Mini Split Heat Pump	tonCool	New	667.90	15	\$3,359.26	15%	25%	\$0.41	0.00	0.00	7th Power Plan
Data Center	Heating	Ductless Mini Split Heat Pump	tonCool	New	77.00	15	\$3,359.26	15%	25%	\$0.41	0.00	0.00	7th Power Plan
Data Center	Cooling	Thermostat - WiFi/Interactive	sqft	New	4.44	5	\$0.66	30%	40%	\$0.02	0.01	0.00	7th Power Plan
Data Center	Heating	Thermostat - WiFi/Interactive	sqft	New	0.44	5	\$0.66	30%	40%	\$0.02	0.00	0.00	7th Power Plan
Data Center	Ventilation	Thermostat - WiFi/Interactive	sqft	New	2.15	5	\$0.66	30%	40%	\$0.02	0.00	0.00	7th Power Plan
Data Center	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	New	103.96	10	\$8.35	25%	65%	\$0.01	0.00	0.00	Illinois TRM
Data Center	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	New	108.34	10	\$11.64	25%	65%	-\$0.08	0.00	0.00	7th Power Plan
Data Center	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	New	58.58	15	\$36.75	15%	75%	\$0.03	0.00	0.00	Hawaii TRM
Data Center	Water Heating	Water Heater - Pipe Insulation	PipeFeet	New	454.35	15	\$14.88	1%	75%	\$0.00	0.00	0.00	AEG-BEST
Data Center	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	New	71.90	4	\$144.04	25%	65%	-\$0.25	0.00	0.00	7th Power Plan
Data Center	Water Heating	Water Heater - Thermostat Setback	WHunits	New	58.10	2	\$5.00	15%	75%	\$0.02	0.00	0.00	Illinois TRM
Data Center	Water Heating	Water Heater - Solar System	PipeFeet	New	1,577.20	20	\$215.28	1%	30%	\$0.01	0.00	0.00	AEG-BEST
Data Center	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.82	15	\$0.35	11%	23%	\$0.03	0.02	0.02	7th Power Plan
Data Center	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	1.13	15	\$0.58	11%	23%	\$0.04	0.03	0.03	7th Power Plan
Data Center	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	New	2,366.06	15	\$54.41	1%	3%	\$0.00	0.00	0.00	7th Power Plan
Data Center	Interior Lighting	Interior Lighting - Timeclocks and Timers	occ sens	New	0.00	8	\$111.67	7%	15%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Data Center	Interior Lighting	Interior Lighting - Skylights	1000 sqft	New	0.00	15	\$1,006.35	18%	25%	\$0.00	0.00	0.00	AEG Research
Data Center	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	1000 sqft	New	503.81	16	\$1,807.69	5%	15%	\$0.25	0.00	0.00	7th Power Plan

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Data Center	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	New	5,173.63	11	\$30.80	15%	50%	\$0.00	0.01	0.01	Illinois TRM
Data Center	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	ELtg Watts	New	1.91	8	\$0.63	15%	25%	\$0.03	0.00	0.00	7th Power Plan
Data Center	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	New	68.03	8	\$55.10	15%	25%	\$0.08	0.00	0.00	Pacific Gas and Electric Research
Data Center	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	New	84.35	7	\$3,400.00	15%	30%	\$4.18	0.00	0.00	AEG Research
Data Center	Refrigeration	Refrigeration - Anti-Sweat Heater	Fridge Feet	New	17.83	8	\$48.18	0%	0%	\$0.42	0.00	0.00	7th Power Plan
Data Center	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	New	38.03	4	\$10.44	0%	0%	\$0.07	0.00	0.00	Michigan Energy Measures Database
Data Center	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	New	259.32	16	\$165.20	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Data Center	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	New	27.22	15	\$335.85	0%	0%	\$1.31	0.00	0.00	7th Power Plan
Data Center	Refrigeration	Refrigeration - Strip Curtain	Walkin Door	New	29.59	2	\$10.41	0%	0%	\$0.17	0.00	0.00	7th Power Plan
Data Center	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	New	0.44	15	\$45.43	0%	0%	\$10.94	0.00	0.00	Annual Energy Outlook, 2015
Data Center	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	New	9.14	15	\$313.82	0%	0%	\$3.65	0.00	0.00	Annual Energy Outlook, 2015
Data Center	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	New	173.64	10	\$506.05	0%	0%	\$0.39	0.00	0.00	Vermont TRM
Data Center	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	New	12.52	6	\$45.41	0%	0%	\$0.69	0.00	0.00	7th Power Plan
Data Center	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	New	1.01	8	\$3.72	0%	0%	\$0.57	0.00	0.00	7th Power Plan
Data Center	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	New	240.83	5	\$45.85	0%	0%	\$0.04	0.00	0.00	Illinois TRM
Data Center	Refrigeration	Grocery - ECMs for Display Cases	Fridge Case	New	51.88	16	\$165.20	0%	0%	\$0.33	0.00	0.00	7th Power Plan
Data Center	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	New	1,389.01	5	\$187.94	25%	75%	\$0.03	0.00	0.00	Illinois TRM
Data Center	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	New	34,569.53	18	\$8,526.67	25%	50%	\$0.02	0.04	0.04	7th Power Plan
Data Center	Office Equipment	Office Equipment - Smart Power Strips	Smart Strip	New	2,704.02	4	\$41.63	10%	50%	\$0.00	0.05	0.03	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Data Center	Cooling	Lodging - Guest Room Controls	LodgUnit	New	1,741.38	15	\$260.00	0%	0%	\$0.02	0.00	0.00	AEG-BEST
Data Center	Heating	Lodging - Guest Room Controls	LodgUnit	New	-115.15	15	\$260.00	0%	0%	\$0.02	0.00	0.00	AEG-BEST
Data Center	Office Equipment	Data Center - Best Practice Measures	sqft	New	13.38	5	\$0.98	20%	75%	\$0.01	0.27	0.24	com-datacenters-7p_v5p.xlsx
Data Center	Cooling	Data Center - Commercially Available Measures	sqft	New	0.08	8	\$0.74	10%	35%	\$0.03	0.00	0.00	com-datacenters-7p_v5p.xlsx
Data Center	Ventilation	Data Center - Commercially Available Measures	sqft	New	0.04	8	\$0.74	10%	35%	\$0.03	0.00	0.00	com-datacenters-7p_v5p.xlsx
Data Center	Interior Lighting	Data Center - Commercially Available Measures	sqft	New	0.06	8	\$0.74	10%	35%	\$0.03	0.00	0.00	com-datacenters-7p_v5p.xlsx
Data Center	Office Equipment	Data Center - Commercially Available Measures	sqft	New	3.08	8	\$0.74	10%	35%	\$0.03	0.05	0.05	com-datacenters-7p_v5p.xlsx
Data Center	Cooling	Data Center - Cutting Edge Measures	sqft	New	0.39	6	\$0.04	10%	15%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Data Center	Office Equipment	Data Center - Cutting Edge Measures	sqft	New	1.07	6	\$0.04	10%	15%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Data Center	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	New	91,145.60	18	\$4,092.80	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Data Center	Miscellaneous	Pool Pump - Timer	perBldg	New	0.00	10	\$85.22	15%	75%	\$0.00	0.00	0.00	Ontario Power TRM
Data Center	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	New	287,038.24	6	\$35.93	1%	3%	\$0.00	0.00	0.00	7th Power Plan
Data Center	Cooling	Advanced New Construction Designs	sqft	New	9.07	25	\$4.11	10%	15%	\$0.02	0.05	0.05	AEG Research
Data Center	Heating	Advanced New Construction Designs	sqft	New	0.88	25	\$4.11	10%	15%	\$0.02	0.00	0.00	AEG Research
Data Center	Ventilation	Advanced New Construction Designs	sqft	New	4.30	25	\$4.11	10%	15%	\$0.02	0.03	0.03	AEG Research
Data Center	Water Heating	Advanced New Construction Designs	sqft	New	0.11	25	\$4.11	10%	15%	\$0.02	0.00	0.00	AEG Research
Data Center	Interior Lighting	Advanced New Construction Designs	sqft	New	1.63	25	\$4.11	10%	15%	\$0.02	0.01	0.01	AEG Research
Data Center	Exterior Lighting	Advanced New Construction Designs	sqft	New	0.28	25	\$4.11	10%	15%	\$0.02	0.00	0.00	AEG Research
Data Center	Cooling	Strategic Energy Management	sqft	New	1.34	3	\$2.30	0%	0%	\$0.11	0.00	0.00	AEG Research

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Data Center	Heating	Strategic Energy Management	sqft	New	0.13	3	\$2.30	0%	0%	\$0.11	0.00	0.00	AEG Research
Data Center	Ventilation	Strategic Energy Management	sqft	New	0.66	3	\$2.30	0%	0%	\$0.11	0.00	0.00	AEG Research
Data Center	Water Heating	Strategic Energy Management	sqft	New	0.02	3	\$2.30	0%	0%	\$0.11	0.00	0.00	AEG Research
Data Center	Interior Lighting	Strategic Energy Management	sqft	New	0.25	3	\$2.30	0%	0%	\$0.11	0.00	0.00	AEG Research
Data Center	Exterior Lighting	Strategic Energy Management	sqft	New	0.04	3	\$2.30	0%	0%	\$0.11	0.00	0.00	AEG Research
Data Center	Refrigeration	Strategic Energy Management	sqft	New	0.00	3	\$2.30	0%	0%	\$0.11	0.00	0.00	AEG Research
Data Center	Office Equipment	Strategic Energy Management	sqft	New	3.50	3	\$2.30	0%	0%	\$0.11	0.00	0.00	AEG Research
Data Center	Cooling	Commissioning	sqft	New	1.85	3	\$2.96	2%	65%	\$0.23	0.02	0.01	AEG Research
Data Center	Heating	Commissioning	sqft	New	0.18	3	\$2.96	2%	65%	\$0.23	0.00	0.00	AEG Research
Data Center	Ventilation	Commissioning	sqft	New	0.91	3	\$2.96	2%	65%	\$0.23	0.01	0.01	AEG Research
Data Center	Water Heating	Commissioning	sqft	New	0.01	3	\$2.96	2%	65%	\$0.23	0.00	0.00	AEG Research
Data Center	Interior Lighting	Commissioning	sqft	New	0.29	3	\$2.96	2%	65%	\$0.23	0.00	0.00	AEG Research
Data Center	Exterior Lighting	Commissioning	sqft	New	0.05	3	\$2.96	2%	65%	\$0.23	0.00	0.00	AEG Research
Data Center	Refrigeration	Commissioning	sqft	New	0.00	3	\$2.96	2%	65%	\$0.23	0.00	0.00	AEG Research
Data Center	Cooling	Retrocommissioning	sqft	New	1.85	3	\$1.88	0%	0%	\$0.14	0.00	0.00	AEG Research
Data Center	Heating	Retrocommissioning	sqft	New	0.19	3	\$1.88	0%	0%	\$0.14	0.00	0.00	AEG Research
Data Center	Ventilation	Retrocommissioning	sqft	New	0.91	3	\$1.88	0%	0%	\$0.14	0.00	0.00	AEG Research
Data Center	Water Heating	Retrocommissioning	sqft	New	0.01	3	\$1.88	0%	0%	\$0.14	0.00	0.00	AEG Research
Data Center	Interior Lighting	Retrocommissioning	sqft	New	0.29	3	\$1.88	0%	0%	\$0.14	0.00	0.00	AEG Research
Data Center	Exterior Lighting	Retrocommissioning	sqft	New	0.05	3	\$1.88	0%	0%	\$0.14	0.00	0.00	AEG Research
Data Center	Refrigeration	Retrocommissioning	sqft	New	0.00	3	\$1.88	0%	0%	\$0.14	0.00	0.00	AEG Research
Data Center	Interior Lighting	Fruit Storage - Lighting Controls	sqft	New	0.20	10	\$0.09	0%	0%	\$0.04	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx

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Data Center	Refrigeration	Fruit Storage Refrigeration Retrofit	sqft	New	0.01	10	\$1.09	0%	0%	\$17.90	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Data Center	Refrigeration	Fruit Storage Refrigeration Tuneup	sqft	New	0.00	3	\$0.23	0%	0%	\$36.69	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Data Center	Refrigeration	Fruit Storage Retrofit - CO2 Scrub	sqft	New	0.00	10	\$3.13	0%	0%	\$106.11	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Data Center	Refrigeration	Fruit Storage Retrofit - Membrane	sqft	New	0.00	10	\$0.68	0%	0%	\$115.15	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Miscellaneous	Cooling	Insulation - Ceiling	sqft roof	Existing	0.13	45	\$1.28	15%	35%	\$0.13	76.39	72.35	Building Energy Simulation Tool
Miscellaneous	Heating	Insulation - Ceiling	sqft roof	Existing	0.53	45	\$1.28	15%	35%	\$0.13	77.40	72.42	Building Energy Simulation Tool
Miscellaneous	Ventilation	Insulation - Ceiling	sqft roof	Existing	0.07	45	\$1.28	15%	35%	\$0.13	57.37	60.31	Building Energy Simulation Tool
Miscellaneous	Cooling	Insulation - Ducting	sqft duct	Existing	0.27	20	\$0.84	15%	50%	\$0.00	69.46	66.16	Building Energy Simulation Tool
Miscellaneous	Heating	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.84	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Miscellaneous	Ventilation	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.84	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Miscellaneous	Cooling	Building Shell - Cool Roofs	sqft roof	Existing	0.25	20	\$0.78	45%	50%	\$10.00	35.13	36.56	Building Energy Simulation Tool
Miscellaneous	Heating	Building Shell - Cool Roofs	sqft roof	Existing	-0.33	20	\$0.78	45%	50%	\$10.00	-11.89	-11.52	Building Energy Simulation Tool
Miscellaneous	Ventilation	Building Shell - Cool Roofs	sqft roof	Existing	-0.05	20	\$0.78	45%	50%	\$10.00	-8.59	-9.49	Building Energy Simulation Tool
Miscellaneous	Cooling	Insulation - Wall Cavity	sqft wall	Existing	-0.06	45	\$0.78	15%	35%	\$0.02	-10.94	-10.25	Building Energy Simulation Tool
Miscellaneous	Heating	Insulation - Wall Cavity	sqft wall	Existing	2.52	45	\$0.78	15%	35%	\$0.02	112.42	101.67	Building Energy Simulation Tool
Miscellaneous	Ventilation	Insulation - Wall Cavity	sqft wall	Existing	0.33	45	\$0.78	15%	35%	\$0.02	78.87	81.53	Building Energy Simulation Tool
Miscellaneous	Cooling	HVAC - Duct Repair and Sealing	tonCool	Existing	2.21	18	\$0.57	15%	50%	\$10.00	12.29	12.78	Building Energy Simulation Tool
Miscellaneous	Heating	HVAC - Duct Repair and Sealing	tonCool	Existing	-4.38	18	\$0.57	15%	50%	\$10.00	-6.23	-6.04	Building Energy Simulation Tool
Miscellaneous	Ventilation	HVAC - Duct Repair and Sealing	tonCool	Existing	-0.60	18	\$0.57	15%	50%	\$10.00	-4.54	-5.00	Building Energy Simulation Tool

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Miscellaneous	Cooling	Windows - High Efficiency Glazing	sqft window	Existing	5.77	30	\$35.93	48%	48%	\$0.08	0.00	0.00	7th Power Plan
Miscellaneous	Heating	Windows - High Efficiency Glazing	sqft window	Existing	29.28	30	\$35.93	48%	48%	\$0.08	0.00	0.00	7th Power Plan
Miscellaneous	Ventilation	Windows - High Efficiency Glazing	sqft window	Existing	2.32	30	\$35.93	48%	48%	\$0.08	0.00	0.00	7th Power Plan
Miscellaneous	Cooling	Chiller - Chilled Water Reset	ChillCtrl	Existing	1,522.20	10	\$884.85	15%	75%	\$0.07	16.02	15.01	AEG-BEST
Miscellaneous	Cooling	Chiller - Chilled Water Variable-Flow System	HP cool	Existing	153.79	15	\$332.55	15%	75%	\$0.22	224.18	211.68	AEG-BEST
Miscellaneous	Cooling	Chiller - Variable Speed Fans	HP fan	Existing	365.18	15	\$208.36	15%	75%	\$0.06	53.72	49.81	New Jersey TRM
Miscellaneous	Cooling	Water-Cooled Chiller - Condenser Water Reset	ChillCtrl	Existing	12,059.82	10	\$884.85	15%	75%	\$0.01	43.46	40.24	AEG-BEST
Miscellaneous	Cooling	HVAC - Economizer	HP cool	Existing	50.48	10	\$168.42	18%	75%	\$0.41	374.00	356.62	AEG-BEST
Miscellaneous	Heating	Space Heating - Heat Recovery Ventilator	CFM	Existing	6.29	14	\$5.08	3%	75%	\$0.09	331.90	291.54	7th Power Plan
Miscellaneous	Ventilation	Ventilation - ECM on VAV Boxes	sqft	Existing	0.18	18	\$0.25	15%	20%	\$0.11	35.72	37.35	7th Power Plan
Miscellaneous	Ventilation	Ventilation - Variable Speed Control	sqft	Existing	0.06	15	\$181.39	13%	25%	\$252.51	29.54	33.64	AEG-BEST
Miscellaneous	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.01	15	\$0.25	15%	25%	\$2.24	4.05	4.49	7th Power Plan
Miscellaneous	Cooling	Destratification Fans (HVLS)	Strat Fan	Existing	3,200.35	15	\$7,270.90	15%	15%	\$0.04	0.00	0.00	AEG Research
Miscellaneous	Heating	Destratification Fans (HVLS)	Strat Fan	Existing	15,819.31	15	\$7,270.90	15%	15%	\$0.04	0.00	0.00	AEG Research
Miscellaneous	Cooling	RTU - Maintenance	tonCool	Existing	23.60	3	\$35.00	15%	45%	\$0.42	86.67	89.45	AEG Research
Miscellaneous	Cooling	RTU - Advanced Controls	sqft	Existing	0.20	15	\$0.07	15%	45%	\$0.03	122.76	114.72	7th Power Plan
Miscellaneous	Cooling	RTU - Evaporative Precooler	tonCool	Existing	48.25	15	\$681.62	15%	75%	\$1.32	314.64	310.02	AEG Research
Miscellaneous	Cooling	Ductless Mini Split Heat Pump	tonCool	Existing	108.34	15	\$3,359.26	15%	25%	\$0.83	11.11	11.67	7th Power Plan
Miscellaneous	Heating	Ductless Mini Split Heat Pump	tonCool	Existing	282.67	15	\$3,359.26	15%	25%	\$0.83	44.20	41.23	7th Power Plan
Miscellaneous	Cooling	Thermostat - WiFi/Interactive	sqft	Existing	0.38	5	\$0.66	30%	40%	\$0.09	111.50	109.63	7th Power Plan
Miscellaneous	Heating	Thermostat - WiFi/Interactive	sqft	Existing	0.99	5	\$0.66	30%	40%	\$0.09	71.72	67.67	7th Power Plan

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Miscellaneous	Ventilation	Thermostat - WiFi/Interactive	sqft	Existing	0.13	5	\$0.66	30%	40%	\$0.09	51.89	55.76	7th Power Plan
Miscellaneous	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	Existing	53.61	10	\$8.35	25%	65%	\$0.01	24.11	38.60	Illinois TRM
Miscellaneous	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	Existing	55.54	10	\$11.64	25%	65%	-\$0.16	12.44	20.09	7th Power Plan
Miscellaneous	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	Existing	63.00	15	\$36.75	15%	25%	\$0.03	4.94	6.92	Hawaii TRM
Miscellaneous	Water Heating	Water Heater - Pipe Insulation	PipeFeet	Existing	241.75	15	\$14.88	16%	75%	\$0.00	68.21	100.81	AEG-BEST
Miscellaneous	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	Existing	36.63	4	\$144.04	25%	65%	-\$0.52	15.99	25.90	7th Power Plan
Miscellaneous	Water Heating	Water Heater - Thermostat Setback	WHunits	Existing	63.03	2	\$5.00	15%	75%	\$0.02	32.46	51.93	Illinois TRM
Miscellaneous	Water Heating	Water Heater - Solar System	PipeFeet	Existing	831.82	20	\$215.28	1%	30%	\$0.01	113.62	171.88	AEG-BEST
Miscellaneous	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.37	15	\$0.35	3%	23%	\$0.07	364.68	407.25	7th Power Plan
Miscellaneous	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.51	15	\$0.58	3%	23%	\$0.09	491.67	560.69	7th Power Plan
Miscellaneous	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	Existing	168.79	15	\$54.41	1%	3%	\$0.03	10.76	13.65	7th Power Plan
Miscellaneous	Interior Lighting	Interior Lighting - Timeclocks and Timers	occ sens	Existing	0.00	8	\$111.67	7%	15%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Miscellaneous	Interior Lighting	Interior Lighting - Skylights	1000 sqft	Existing	0.00	15	\$1,006.35	15%	25%	\$0.00	0.00	0.00	AEG Research
Miscellaneous	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	1000 sqft	Existing	193.75	16	\$1,807.69	5%	15%	\$0.67	73.58	95.79	7th Power Plan
Miscellaneous	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	Existing	2,016.55	11	\$30.80	15%	50%	\$0.00	283.64	336.32	Illinois TRM
Miscellaneous	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	ELtg Watts	Existing	2.01	8	\$0.63	15%	25%	\$0.03	108.73	143.24	7th Power Plan
Miscellaneous	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	Existing	79.42	8	\$55.10	15%	25%	\$0.07	54.90	74.57	Pacific Gas and Electric Research
Miscellaneous	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	Existing	94.84	7	\$3,400.00	15%	30%	\$3.85	96.57	136.31	AEG Research
Miscellaneous	Refrigeration	Refrigeration - Anti-Sweat Heater	Fridge Feet	Existing	28.69	8	\$48.18	0%	0%	\$0.25	0.00	0.00	7th Power Plan

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Miscellaneous	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	Existing	73.06	4	\$10.44	0%	0%	\$0.04	0.00	0.00	Michigan Energy Measures Database
Miscellaneous	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	Existing	496.80	16	\$165.20	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Miscellaneous	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	Existing	40.33	15	\$335.85	0%	0%	\$0.84	0.00	0.00	7th Power Plan
Miscellaneous	Refrigeration	Refrigeration - Strip Curtain	Walkin Door	Existing	46.54	2	\$10.41	0%	0%	\$0.10	0.00	0.00	7th Power Plan
Miscellaneous	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	Existing	0.62	15	\$45.43	0%	0%	\$7.03	0.00	0.00	Annual Energy Outlook, 2015
Miscellaneous	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	Existing	13.55	15	\$313.82	0%	0%	\$2.34	0.00	0.00	Annual Energy Outlook, 2015
Miscellaneous	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	Existing	319.95	10	\$506.05	0%	0%	\$0.20	0.00	0.00	Vermont TRM
Miscellaneous	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	Existing	18.64	6	\$45.41	0%	0%	\$0.44	0.00	0.00	7th Power Plan
Miscellaneous	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	Existing	1.50	8	\$3.72	0%	0%	\$0.36	0.00	0.00	7th Power Plan
Miscellaneous	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	Existing	370.57	5	\$45.85	0%	0%	\$0.03	0.00	0.00	Illinois TRM
Miscellaneous	Refrigeration	Grocery - ECMs for Display Cases	Fridge Case	Existing	77.25	16	\$165.20	0%	0%	\$0.21	0.00	0.00	7th Power Plan
Miscellaneous	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	Existing	1,398.01	5	\$187.94	25%	75%	\$0.03	96.95	87.23	Illinois TRM
Miscellaneous	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	Existing	1,950.67	18	\$8,526.67	25%	50%	\$0.36	76.46	81.06	7th Power Plan
Miscellaneous	Office Equipment	Office Equipment - Smart Power Strips	Smart Strip	Existing	20.82	4	\$41.63	10%	50%	\$0.46	83.03	64.14	7th Power Plan
Miscellaneous	Cooling	Lodging - Guest Room Controls	LodgUnit	Existing	143.15	15	\$260.00	0%	0%	\$10.00	0.00	0.00	AEG-BEST
Miscellaneous	Heating	Lodging - Guest Room Controls	LodgUnit	Existing	-228.16	15	\$260.00	0%	0%	\$10.00	0.00	0.00	AEG-BEST
Miscellaneous	Office Equipment	Data Center - Best Practice Measures	sqft	Existing	0.04	5	\$0.00	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Miscellaneous	Cooling	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.01	0%	0%	\$0.03	0.00	0.00	com-datacenters-7p_v5p.xlsx
Miscellaneous	Ventilation	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.01	0%	0%	\$0.03	0.00	0.00	com-datacenters-7p_v5p.xlsx

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Miscellaneous	Interior Lighting	Data Center - Commercially Available Measures	sqft	Existing	0.03	8	\$0.01	0%	0%	\$0.03	0.00	0.00	com-datacenters-7p_v5p.xlsx
Miscellaneous	Office Equipment	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.01	0%	0%	\$0.03	0.00	0.00	com-datacenters-7p_v5p.xlsx
Miscellaneous	Cooling	Data Center - Cutting Edge Measures	sqft	Existing	0.04	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Miscellaneous	Office Equipment	Data Center - Cutting Edge Measures	sqft	Existing	0.00	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Miscellaneous	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	Existing	759.94	18	\$4,092.80	0%	5%	\$0.43	9.77	10.48	7th Power Plan
Miscellaneous	Miscellaneous	Pool Pump - Timer	perBldg	Existing	109.30	10	\$85.22	15%	75%	\$0.10	0.71	0.64	Ontario Power TRM
Miscellaneous	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	Existing	1,599.47	6	\$35.93	1%	3%	\$0.00	31.79	28.93	7th Power Plan
Miscellaneous	Cooling	Advanced New Construction Designs	sqft	Existing	0.79	25	\$4.11	0%	0%	\$0.07	0.00	0.00	AEG Research
Miscellaneous	Heating	Advanced New Construction Designs	sqft	Existing	1.96	25	\$4.11	0%	0%	\$0.07	0.00	0.00	AEG Research
Miscellaneous	Ventilation	Advanced New Construction Designs	sqft	Existing	0.27	25	\$4.11	0%	0%	\$0.07	0.00	0.00	AEG Research
Miscellaneous	Water Heating	Advanced New Construction Designs	sqft	Existing	0.36	25	\$4.11	0%	0%	\$0.07	0.00	0.00	AEG Research
Miscellaneous	Interior Lighting	Advanced New Construction Designs	sqft	Existing	0.77	25	\$4.11	0%	0%	\$0.07	0.00	0.00	AEG Research
Miscellaneous	Exterior Lighting	Advanced New Construction Designs	sqft	Existing	0.17	25	\$4.11	0%	0%	\$0.07	0.00	0.00	AEG Research
Miscellaneous	Cooling	Strategic Energy Management	sqft	Existing	0.11	3	\$0.30	5%	16%	\$0.12	38.47	39.99	AEG Research
Miscellaneous	Heating	Strategic Energy Management	sqft	Existing	0.30	3	\$0.30	5%	16%	\$0.12	25.94	24.36	AEG Research
Miscellaneous	Ventilation	Strategic Energy Management	sqft	Existing	0.04	3	\$0.30	5%	16%	\$0.12	18.92	21.03	AEG Research
Miscellaneous	Water Heating	Strategic Energy Management	sqft	Existing	0.06	3	\$0.30	5%	16%	\$0.12	8.23	13.42	AEG Research
Miscellaneous	Interior Lighting	Strategic Energy Management	sqft	Existing	0.12	3	\$0.30	5%	16%	\$0.12	48.44	65.85	AEG Research
Miscellaneous	Exterior Lighting	Strategic Energy Management	sqft	Existing	0.03	3	\$0.30	5%	16%	\$0.12	10.91	15.06	AEG Research

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Miscellaneous	Refrigeration	Strategic Energy Management	sqft	Existing	0.02	3	\$0.30	5%	16%	\$0.12	11.03	7.35	AEG Research
Miscellaneous	Office Equipment	Strategic Energy Management	sqft	Existing	0.03	3	\$0.30	5%	16%	\$0.12	14.95	11.75	AEG Research
Miscellaneous	Cooling	Commissioning	sqft	Existing	0.15	3	\$0.69	0%	0%	\$0.22	0.00	0.00	AEG Research
Miscellaneous	Heating	Commissioning	sqft	Existing	0.40	3	\$0.69	0%	0%	\$0.22	0.00	0.00	AEG Research
Miscellaneous	Ventilation	Commissioning	sqft	Existing	0.05	3	\$0.69	0%	0%	\$0.22	0.00	0.00	AEG Research
Miscellaneous	Water Heating	Commissioning	sqft	Existing	0.03	3	\$0.69	0%	0%	\$0.22	0.00	0.00	AEG Research
Miscellaneous	Interior Lighting	Commissioning	sqft	Existing	0.13	3	\$0.69	0%	0%	\$0.22	0.00	0.00	AEG Research
Miscellaneous	Exterior Lighting	Commissioning	sqft	Existing	0.03	3	\$0.69	0%	0%	\$0.22	0.00	0.00	AEG Research
Miscellaneous	Refrigeration	Commissioning	sqft	Existing	0.04	3	\$0.69	0%	0%	\$0.22	0.00	0.00	AEG Research
Miscellaneous	Cooling	Retrocommissioning	sqft	Existing	0.16	3	\$0.44	10%	65%	\$0.14	264.89	276.25	AEG Research
Miscellaneous	Heating	Retrocommissioning	sqft	Existing	0.41	3	\$0.44	10%	65%	\$0.14	178.64	168.28	AEG Research
Miscellaneous	Ventilation	Retrocommissioning	sqft	Existing	0.06	3	\$0.44	10%	65%	\$0.14	130.31	145.26	AEG Research
Miscellaneous	Water Heating	Retrocommissioning	sqft	Existing	0.03	3	\$0.44	10%	65%	\$0.14	18.89	30.90	AEG Research
Miscellaneous	Interior Lighting	Retrocommissioning	sqft	Existing	0.14	3	\$0.44	10%	65%	\$0.14	277.94	379.06	AEG Research
Miscellaneous	Exterior Lighting	Retrocommissioning	sqft	Existing	0.03	3	\$0.44	10%	65%	\$0.14	62.61	86.70	AEG Research
Miscellaneous	Refrigeration	Retrocommissioning	sqft	Existing	0.04	3	\$0.44	10%	65%	\$0.14	126.58	84.55	AEG Research
Miscellaneous	Interior Lighting	Fruit Storage - Lighting Controls	sqft	Existing	0.10	10	\$0.09	0%	0%	\$0.08	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Miscellaneous	Refrigeration	Fruit Storage Refrigeration Retrofit	sqft	Existing	0.13	10	\$1.09	0%	0%	\$1.02	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Miscellaneous	Refrigeration	Fruit Storage Refrigeration Tuneup	sqft	Existing	0.03	3	\$0.23	0%	0%	\$2.09	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Miscellaneous	Refrigeration	Fruit Storage Retrofit - CO2 Scrub	sqft	Existing	0.06	10	\$3.13	0%	0%	\$6.06	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Miscellaneous	Refrigeration	Fruit Storage Retrofit - Membrane	sqft	Existing	0.01	10	\$0.68	0%	0%	\$6.57	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Miscellaneous	Cooling	Insulation - Ceiling	sqft roof	New	0.00	45	\$1.28	15%	50%	\$0.17	0.00	0.00	Building Energy Simulation Tool

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Miscellaneous	Heating	Insulation - Ceiling	sqft roof	New	0.52	45	\$1.28	15%	50%	\$0.17	79.52	73.94	Building Energy Simulation Tool
Miscellaneous	Ventilation	Insulation - Ceiling	sqft roof	New	0.05	45	\$1.28	15%	50%	\$0.17	52.11	52.90	Building Energy Simulation Tool
Miscellaneous	Cooling	Insulation - Ducting	sqft duct	New	0.43	20	\$0.84	15%	50%	\$0.11	67.52	63.77	Building Energy Simulation Tool
Miscellaneous	Heating	Insulation - Ducting	sqft duct	New	0.19	20	\$0.84	15%	50%	\$0.11	7.34	6.86	Building Energy Simulation Tool
Miscellaneous	Ventilation	Insulation - Ducting	sqft duct	New	0.02	20	\$0.84	15%	50%	\$0.11	4.88	5.00	Building Energy Simulation Tool
Miscellaneous	Cooling	Building Shell - Cool Roofs	sqft roof	New	0.09	20	\$0.78	45%	50%	\$10.00	8.02	7.61	Building Energy Simulation Tool
Miscellaneous	Heating	Building Shell - Cool Roofs	sqft roof	New	-0.13	20	\$0.78	45%	50%	\$10.00	-2.96	-2.76	Building Energy Simulation Tool
Miscellaneous	Ventilation	Building Shell - Cool Roofs	sqft roof	New	-0.01	20	\$0.78	45%	50%	\$10.00	-1.95	-2.00	Building Energy Simulation Tool
Miscellaneous	Cooling	Insulation - Wall Cavity	sqft wall	New	0.00	45	\$0.78	15%	50%	\$0.11	-0.37	-0.34	Building Energy Simulation Tool
Miscellaneous	Heating	Insulation - Wall Cavity	sqft wall	New	0.49	45	\$0.78	15%	50%	\$0.11	22.71	21.07	Building Energy Simulation Tool
Miscellaneous	Ventilation	Insulation - Wall Cavity	sqft wall	New	0.05	45	\$0.78	15%	50%	\$0.11	14.88	15.07	Building Energy Simulation Tool
Miscellaneous	Cooling	HVAC - Duct Repair and Sealing	tonCool	New	2.52	18	\$0.57	15%	50%	\$0.00	8.47	7.94	Building Energy Simulation Tool
Miscellaneous	Heating	HVAC - Duct Repair and Sealing	tonCool	New	15.94	18	\$0.57	15%	50%	\$0.00	12.98	11.99	Building Energy Simulation Tool
Miscellaneous	Ventilation	HVAC - Duct Repair and Sealing	tonCool	New	1.69	18	\$0.57	15%	50%	\$0.00	8.51	8.64	Building Energy Simulation Tool
Miscellaneous	Cooling	Windows - High Efficiency Glazing	sqft window	New	5.31	30	\$35.93	66%	66%	\$0.08	0.00	0.00	7th Power Plan
Miscellaneous	Heating	Windows - High Efficiency Glazing	sqft window	New	27.60	30	\$35.93	66%	66%	\$0.08	0.00	0.00	7th Power Plan
Miscellaneous	Ventilation	Windows - High Efficiency Glazing	sqft window	New	1.72	30	\$35.93	66%	66%	\$0.08	0.00	0.00	7th Power Plan
Miscellaneous	Cooling	Chiller - Chilled Water Reset	ChillCtrl	New	1,268.88	10	\$884.85	15%	75%	\$0.09	4.00	3.58	AEG-BEST
Miscellaneous	Cooling	Chiller - Chilled Water Variable-Flow System	HP cool	New	127.65	15	\$332.55	15%	75%	\$0.26	68.68	62.64	AEG-BEST

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Miscellaneous	Cooling	Chiller - Variable Speed Fans	HP fan	New	301.93	15	\$208.36	15%	75%	\$0.07	16.33	14.73	New Jersey TRM
Miscellaneous	Cooling	Water-Cooled Chiller - Condenser Water Reset	ChillCtrl	New	9,901.69	10	\$884.85	15%	75%	\$0.01	10.65	9.47	AEG-BEST
Miscellaneous	Cooling	HVAC - Economizer	HP cool	New	47.70	10	\$168.42	18%	75%	\$0.43	105.49	95.49	AEG-BEST
Miscellaneous	Heating	Space Heating - Heat Recovery Ventilator	CFM	New	5.77	14	\$5.08	6%	75%	\$0.10	101.52	89.45	7th Power Plan
Miscellaneous	Ventilation	Ventilation - ECM on VAV Boxes	sqft	New	0.13	18	\$0.25	15%	20%	\$0.13	16.77	17.13	7th Power Plan
Miscellaneous	Ventilation	Ventilation - Variable Speed Control	sqft	New	0.05	15	\$181.39	19%	25%	\$287.08	4.64	4.80	AEG-BEST
Miscellaneous	Ventilation	Ventilation - Demand Controlled	sqft	New	0.01	15	\$0.25	15%	25%	\$2.55	1.28	1.33	7th Power Plan
Miscellaneous	Cooling	Destratification Fans (HVLS)	Strat Fan	New	2,941.82	15	\$7,270.90	15%	15%	\$0.04	0.00	0.00	AEG Research
Miscellaneous	Heating	Destratification Fans (HVLS)	Strat Fan	New	14,632.89	15	\$7,270.90	15%	15%	\$0.04	0.00	0.00	AEG Research
Miscellaneous	Cooling	RTU - Maintenance	tonCool	New	23.62	3	\$35.00	15%	45%	\$0.44	9.40	8.66	AEG Research
Miscellaneous	Cooling	RTU - Advanced Controls	sqft	New	0.19	15	\$0.07	15%	45%	\$0.04	65.00	59.99	7th Power Plan
Miscellaneous	Cooling	RTU - Evaporative Precooler	tonCool	New	48.01	15	\$681.62	15%	75%	\$1.35	215.19	201.55	AEG Research
Miscellaneous	Cooling	Ductless Mini Split Heat Pump	tonCool	New	93.74	15	\$3,359.26	15%	25%	\$0.91	4.58	4.25	7th Power Plan
Miscellaneous	Heating	Ductless Mini Split Heat Pump	tonCool	New	273.55	15	\$3,359.26	15%	25%	\$0.91	19.10	17.10	7th Power Plan
Miscellaneous	Cooling	Thermostat - WiFi/Interactive	sqft	New	0.37	5	\$0.66	30%	40%	\$0.09	8.15	7.32	7th Power Plan
Miscellaneous	Heating	Thermostat - WiFi/Interactive	sqft	New	0.94	5	\$0.66	30%	40%	\$0.09	5.05	4.37	7th Power Plan
Miscellaneous	Ventilation	Thermostat - WiFi/Interactive	sqft	New	0.10	5	\$0.66	30%	40%	\$0.09	3.32	3.44	7th Power Plan
Miscellaneous	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	New	49.26	10	\$8.35	25%	65%	\$0.01	6.59	9.31	Illinois TRM
Miscellaneous	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	New	51.34	10	\$11.64	25%	65%	-\$0.16	3.44	4.85	7th Power Plan
Miscellaneous	Water Heating	Water Heater - High Efficiency Circulation Pump	WHUnits	New	58.42	15	\$36.75	15%	25%	\$0.03	2.42	2.94	Hawaii TRM
Miscellaneous	Water Heating	Water Heater - Pipe Insulation	PipeFeet	New	215.26	15	\$14.88	1%	75%	\$0.00	30.30	40.67	AEG-BEST

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Miscellaneous	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	New	34.24	4	\$144.04	25%	65%	-\$0.52	1.86	2.78	7th Power Plan
Miscellaneous	Water Heating	Water Heater - Thermostat Setback	WHUnits	New	58.48	2	\$5.00	15%	75%	\$0.02	1.54	2.36	Illinois TRM
Miscellaneous	Water Heating	Water Heater - Solar System	PipeFeet	New	747.55	20	\$215.28	1%	30%	\$0.01	42.35	56.58	AEG-BEST
Miscellaneous	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.35	15	\$0.35	11%	23%	\$0.07	197.62	209.94	7th Power Plan
Miscellaneous	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.49	15	\$0.58	11%	23%	\$0.09	271.98	290.47	7th Power Plan
Miscellaneous	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	New	161.17	15	\$54.41	1%	3%	\$0.03	3.41	3.96	7th Power Plan
Miscellaneous	Interior Lighting	Interior Lighting - Timeclocks and Timers	occ sens	New	0.00	8	\$111.67	7%	15%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Miscellaneous	Interior Lighting	Interior Lighting - Skylights	1000 sqft	New	0.00	15	\$1,006.35	18%	25%	\$0.00	0.00	0.00	AEG Research
Miscellaneous	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	1000 sqft	New	184.23	16	\$1,807.69	5%	15%	\$0.67	28.62	32.26	7th Power Plan
Miscellaneous	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	New	1,885.17	11	\$30.80	15%	50%	\$0.00	87.34	96.85	Illinois TRM
Miscellaneous	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	ELtg Watts	New	1.87	8	\$0.63	15%	25%	\$0.03	25.77	34.80	7th Power Plan
Miscellaneous	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	New	75.44	8	\$55.10	15%	25%	\$0.07	13.55	18.24	Pacific Gas and Electric Research
Miscellaneous	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	New	93.13	7	\$3,400.00	15%	30%	\$3.70	22.07	30.30	AEG Research
Miscellaneous	Refrigeration	Refrigeration - Anti-Sweat Heater	Fridge Feet	New	25.30	8	\$48.18	0%	0%	\$0.29	0.00	0.00	7th Power Plan
Miscellaneous	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	New	67.87	4	\$10.44	0%	0%	\$0.04	0.00	0.00	Michigan Energy Measures Database
Miscellaneous	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	New	442.25	16	\$165.20	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Miscellaneous	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	New	38.58	15	\$335.85	0%	0%	\$0.90	0.00	0.00	7th Power Plan
Miscellaneous	Refrigeration	Refrigeration - Strip Curtain	Walkin Door	New	43.77	2	\$10.41	0%	0%	\$0.11	0.00	0.00	7th Power Plan
Miscellaneous	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBtuh	New	0.63	15	\$45.43	0%	0%	\$7.51	0.00	0.00	Annual Energy Outlook, 2015

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Miscellaneous	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	New	12.96	15	\$313.82	0%	0%	\$2.50	0.00	0.00	Annual Energy Outlook, 2015
Miscellaneous	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	New	292.81	10	\$506.05	0%	0%	\$0.22	0.00	0.00	Vermont TRM
Miscellaneous	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	New	18.21	6	\$45.41	0%	0%	\$0.46	0.00	0.00	7th Power Plan
Miscellaneous	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	New	1.47	8	\$3.72	0%	0%	\$0.38	0.00	0.00	7th Power Plan
Miscellaneous	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	New	356.42	5	\$45.85	0%	0%	\$0.03	0.00	0.00	Illinois TRM
Miscellaneous	Refrigeration	Grocery - ECMs for Display Cases	Fridge Case	New	75.47	16	\$165.20	0%	0%	\$0.22	0.00	0.00	7th Power Plan
Miscellaneous	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	New	1,366.23	5	\$187.94	25%	75%	\$0.03	12.31	10.51	Illinois TRM
Miscellaneous	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	New	1,447.16	18	\$8,526.67	25%	50%	\$0.41	36.31	37.27	7th Power Plan
Miscellaneous	Office Equipment	Office Equipment - Smart Power Strips	Smart Strip	New	20.07	4	\$41.63	10%	50%	\$0.48	8.38	6.32	7th Power Plan
Miscellaneous	Cooling	Lodging - Guest Room Controls	LodgUnit	New	128.79	15	\$260.00	0%	0%	\$10.00	0.00	0.00	AEG-BEST
Miscellaneous	Heating	Lodging - Guest Room Controls	LodgUnit	New	-227.24	15	\$260.00	0%	0%	\$10.00	0.00	0.00	AEG-BEST
Miscellaneous	Office Equipment	Data Center - Best Practice Measures	sqft	New	0.04	5	\$0.00	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Miscellaneous	Cooling	Data Center - Commercially Available Measures	sqft	New	0.01	8	\$0.01	0%	0%	\$0.03	0.00	0.00	com-datacenters-7p_v5p.xlsx
Miscellaneous	Ventilation	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.01	0%	0%	\$0.03	0.00	0.00	com-datacenters-7p_v5p.xlsx
Miscellaneous	Interior Lighting	Data Center - Commercially Available Measures	sqft	New	0.03	8	\$0.01	0%	0%	\$0.03	0.00	0.00	com-datacenters-7p_v5p.xlsx
Miscellaneous	Office Equipment	Data Center - Commercially Available Measures	sqft	New	0.01	8	\$0.01	0%	0%	\$0.03	0.00	0.00	com-datacenters-7p_v5p.xlsx
Miscellaneous	Cooling	Data Center - Cutting Edge Measures	sqft	New	0.03	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Miscellaneous	Office Equipment	Data Center - Cutting Edge Measures	sqft	New	0.00	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Miscellaneous	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	New	566.45	18	\$4,092.80	0%	5%	\$0.49	4.69	4.83	7th Power Plan

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Miscellaneous	Miscellaneous	Pool Pump - Timer	perBldg	New	109.44	10	\$85.22	15%	75%	\$0.10	0.16	0.14	Ontario Power TRM
Miscellaneous	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	New	1,599.33	6	\$35.93	1%	3%	\$0.00	3.28	2.85	7th Power Plan
Miscellaneous	Cooling	Advanced New Construction Designs	sqft	New	0.75	25	\$4.11	10%	15%	\$0.07	75.29	70.76	AEG Research
Miscellaneous	Heating	Advanced New Construction Designs	sqft	New	1.87	25	\$4.11	10%	15%	\$0.07	45.45	42.27	AEG Research
Miscellaneous	Ventilation	Advanced New Construction Designs	sqft	New	0.20	25	\$4.11	10%	15%	\$0.07	30.20	30.98	AEG Research
Miscellaneous	Water Heating	Advanced New Construction Designs	sqft	New	0.34	25	\$4.11	10%	15%	\$0.07	16.26	18.79	AEG Research
Miscellaneous	Interior Lighting	Advanced New Construction Designs	sqft	New	0.74	25	\$4.11	10%	15%	\$0.07	92.14	97.67	AEG Research
Miscellaneous	Exterior Lighting	Advanced New Construction Designs	sqft	New	0.16	25	\$4.11	10%	15%	\$0.07	19.89	21.99	AEG Research
Miscellaneous	Cooling	Strategic Energy Management	sqft	New	0.11	3	\$0.29	16%	16%	\$0.12	0.00	0.00	AEG Research
Miscellaneous	Heating	Strategic Energy Management	sqft	New	0.29	3	\$0.29	16%	16%	\$0.12	0.00	0.00	AEG Research
Miscellaneous	Ventilation	Strategic Energy Management	sqft	New	0.03	3	\$0.29	16%	16%	\$0.12	0.00	0.00	AEG Research
Miscellaneous	Water Heating	Strategic Energy Management	sqft	New	0.05	3	\$0.29	16%	16%	\$0.12	0.00	0.00	AEG Research
Miscellaneous	Interior Lighting	Strategic Energy Management	sqft	New	0.11	3	\$0.29	16%	16%	\$0.12	0.00	0.00	AEG Research
Miscellaneous	Exterior Lighting	Strategic Energy Management	sqft	New	0.02	3	\$0.29	16%	16%	\$0.12	0.00	0.00	AEG Research
Miscellaneous	Refrigeration	Strategic Energy Management	sqft	New	0.02	3	\$0.29	16%	16%	\$0.12	0.00	0.00	AEG Research
Miscellaneous	Office Equipment	Strategic Energy Management	sqft	New	0.03	3	\$0.29	16%	16%	\$0.12	0.00	0.00	AEG Research
Miscellaneous	Cooling	Commissioning	sqft	New	0.15	3	\$0.66	10%	65%	\$0.22	20.15	18.50	AEG Research
Miscellaneous	Heating	Commissioning	sqft	New	0.40	3	\$0.66	10%	65%	\$0.22	12.77	10.99	AEG Research
Miscellaneous	Ventilation	Commissioning	sqft	New	0.04	3	\$0.66	10%	65%	\$0.22	8.41	8.72	AEG Research
Miscellaneous	Water Heating	Commissioning	sqft	New	0.02	3	\$0.66	10%	65%	\$0.22	1.53	2.32	AEG Research
Miscellaneous	Interior Lighting	Commissioning	sqft	New	0.13	3	\$0.66	10%	65%	\$0.22	21.64	28.81	AEG Research

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Miscellaneous	Exterior Lighting	Commissioning	sqft	New	0.03	3	\$0.66	10%	65%	\$0.22	4.64	6.95	AEG Research
Miscellaneous	Refrigeration	Commissioning	sqft	New	0.04	3	\$0.66	10%	65%	\$0.22	8.16	4.90	AEG Research
Miscellaneous	Cooling	Retrocommissioning	sqft	New	0.15	3	\$0.42	0%	0%	\$0.14	0.00	0.00	AEG Research
Miscellaneous	Heating	Retrocommissioning	sqft	New	0.40	3	\$0.42	0%	0%	\$0.14	0.00	0.00	AEG Research
Miscellaneous	Ventilation	Retrocommissioning	sqft	New	0.04	3	\$0.42	0%	0%	\$0.14	0.00	0.00	AEG Research
Miscellaneous	Water Heating	Retrocommissioning	sqft	New	0.02	3	\$0.42	0%	0%	\$0.14	0.00	0.00	AEG Research
Miscellaneous	Interior Lighting	Retrocommissioning	sqft	New	0.13	3	\$0.42	0%	0%	\$0.14	0.00	0.00	AEG Research
Miscellaneous	Exterior Lighting	Retrocommissioning	sqft	New	0.03	3	\$0.42	0%	0%	\$0.14	0.00	0.00	AEG Research
Miscellaneous	Refrigeration	Retrocommissioning	sqft	New	0.04	3	\$0.42	0%	0%	\$0.14	0.00	0.00	AEG Research
Miscellaneous	Interior Lighting	Fruit Storage - Lighting Controls	sqft	New	0.09	10	\$0.09	0%	0%	\$0.08	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Miscellaneous	Refrigeration	Fruit Storage Refrigeration Retrofit	sqft	New	0.12	10	\$1.09	0%	0%	\$1.18	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Miscellaneous	Refrigeration	Fruit Storage Refrigeration Tuneup	sqft	New	0.03	3	\$0.23	0%	0%	\$2.41	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Miscellaneous	Refrigeration	Fruit Storage Retrofit - CO2 Scrub	sqft	New	0.06	10	\$3.13	0%	0%	\$6.98	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Miscellaneous	Refrigeration	Fruit Storage Retrofit - Membrane	sqft	New	0.01	10	\$0.68	0%	0%	\$7.58	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx

Utah Commercial Measures Assumptions

Table H-8 Comparison of 7th Plan and RTF Commercial Measures in Utah

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Large Office	Cooling	Air-Cooled Chiller	1 kBTU/hr	Existing	39.63	20	\$26.36	17%	at stock turnover	\$0.05	7,842.93	7,842.93	Annual Energy Outlook, 2015
Large Office	Cooling	Water-Cooled Chiller	1 kBTU/hr	Existing	55.88	25	\$12.65	10%	at stock turnover	\$0.01	6,810.00	6,810.00	Annual Energy Outlook, 2015
Large Office	Cooling	RTU	1 kBTU/hr	Existing	6.04	15	\$6.75	55%	at stock turnover	\$0.09	4,612.67	4,612.67	Annual Energy Outlook, 2015
Large Office	Cooling	Room AC	1 kBTU/hr	Existing	22.72	15	\$23.62	3%	at stock turnover	\$0.09	917.26	917.26	Annual Energy Outlook, 2015
Large Office	Cooling	Evaporative AC	11 per TR	Existing	0.00	15	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	New Buildings Institute Study, 2006
Large Office	Cooling	Air-Source Heat Pump	1 kBTU/hr	Existing	11.64	15	\$21.65	4%	at stock turnover	\$0.13	517.89	517.89	Annual Energy Outlook, 2015
Large Office	Heating	Air-Source Heat Pump	1 kBTU/hr	Existing	2.48	15	\$21.65	4%	at stock turnover	\$0.13	110.32	110.32	Annual Energy Outlook, 2015
Large Office	Cooling	Geothermal Heat Pump	1 kBTU/hr	Existing	28.29	25	\$26.36	3%	at stock turnover	\$0.04	589.58	589.58	Annual Energy Outlook, 2015
Large Office	Heating	Geothermal Heat Pump	1 kBTU/hr	Existing	10.78	25	\$26.36	3%	at stock turnover	\$0.04	224.77	224.77	Annual Energy Outlook, 2015
Large Office	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Large Office	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	31%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Large Office	Ventilation	Ventilation	1000 CFM	Existing	9,154.99	20	\$1,219.71	100%	at stock turnover	\$0.01	9,232.92	9,232.92	AEG-BEST
Large Office	Water Heating	Water Heater	65 gallons	Existing	2,163.94	13	\$3,537.01	45%	at stock turnover	\$0.15	11,433.03	11,433.03	7th Power Plan
Large Office	Interior Lighting	Screw-in	lamps	Existing	52.08	8	\$3.95	100%	at stock turnover	\$0.01	4,887.81	9,269.61	7th Power Plan
Large Office	Interior Lighting	Linear Lighting	lamps	Existing	65.98	17	\$52.83	100%	at stock turnover	\$0.06	47,797.08	45,469.44	7th Power Plan
Large Office	Interior Lighting	High-Bay Fixtures	lamps	Existing	378.88	15	\$123.86	100%	at stock turnover	\$0.03	29,815.31	27,587.17	Annual Energy Outlook, 2015
Large Office	Exterior Lighting	Screw-in	lamps	Existing	78.38	8	\$3.95	100%	at stock turnover	\$0.01	1,258.00	2,385.77	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Large Office	Exterior Lighting	Linear Lighting	lamps	Existing	90.99	17	\$52.83	100%	at stock turnover	\$0.04	4,987.99	4,745.09	7th Power Plan
Large Office	Exterior Lighting	Area Lighting	lamps	Existing	1,243.60	15	\$44.55	100%	at stock turnover	\$0.00	34,789.62	32,936.61	Annual Energy Outlook, 2015
Large Office	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	Existing	1,507.00	11	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Large Office	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	Existing	605.00	15	\$0.00	14%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Large Office	Refrigeration	Glass Door Display	1 unit	Existing	767.00	15	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Large Office	Refrigeration	Open Display Case	1 unit	Existing	1,438.00	10	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Large Office	Refrigeration	Icemaker	1 unit	Existing	443.88	9	\$1,073.62	45%	at stock turnover	\$0.31	35.57	35.92	ENERGY STAR
Large Office	Refrigeration	Vending Machine	1 unit	Existing	81.00	10	\$42.74	45%	at stock turnover	\$0.06	37.81	37.81	EIA 2011-2012 Ref. Case
Large Office	Food Preparation	Oven	1 unit	Existing	15,104.75	10	\$1,087.12	66%	at stock turnover	\$0.01	656.03	656.03	RTF Workbook
Large Office	Food Preparation	Fryer	1 unit	Existing	2,881.11	10	\$782.02	76%	at stock turnover	\$0.03	326.22	326.22	RTF Workbook
Large Office	Food Preparation	Dishwasher	1 unit	Existing	1,348.33	15	\$564.57	20%	at stock turnover	\$0.04	25.56	25.56	ENERGY STAR
Large Office	Food Preparation	Hot Food Container	1 unit	Existing	802.23	20	\$490.95	20%	at stock turnover	\$0.04	37.94	37.94	RTF Workbook
Large Office	Food Preparation	Steamer	1 unit	Existing	66,188.82	9	\$837.45	20%	at stock turnover	\$0.00	452.62	452.62	RTF Workbook
Large Office	Office Equipment	Desktop Computer	1 unit	Existing	123.52	5	\$0.01	100%	at stock turnover	\$0.00	22,223.40	22,223.40	7th Power Plan
Large Office	Office Equipment	Laptop	1 unit	Existing	36.86	4	\$0.01	100%	at stock turnover	\$0.00	2,725.73	2,725.73	7th Power Plan
Large Office	Office Equipment	Monitor	1 unit	Existing	30.65	5	\$0.01	100%	at stock turnover	\$0.00	1,391.37	1,391.37	7th Power Plan
Large Office	Office Equipment	Server	1 unit	Existing	74.10	4	\$0.01	100%	at stock turnover	\$0.00	2,065.63	2,065.63	AEG Research
Large Office	Office Equipment	Printer/Copier/Fax	1 unit	Existing	223.00	6	\$0.01	100%	at stock turnover	\$0.00	423.40	423.40	ENERGY STAR
Large Office	Office Equipment	POS Terminal	1 unit	Existing	123.52	5	\$0.01	40%	at stock turnover	\$0.00	172.52	172.52	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Large Office	Miscellaneous	Non-HVAC Motors	1 unit	Existing	0.00	15	\$0.00	90%	at stock turnover	\$0.00	0.00	0.00	N/A
Large Office	Miscellaneous	Pool Pump	1 unit	Existing	0.00	10	\$246.30	0%	at stock turnover	\$0.00	0.00	0.00	Southern California Edison
Large Office	Miscellaneous	Pool Heater	1 unit	Existing	0.00	15	\$3,546.07	0%	at stock turnover	\$0.00	0.00	0.00	AEG Research
Large Office	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Large Office	Cooling	Air-Cooled Chiller	1 kBTU/hr	New	34.22	20	\$26.36	19%	at stock turnover	\$0.06	10,935.11	10,935.11	Annual Energy Outlook, 2015
Large Office	Cooling	Water-Cooled Chiller	1 kBTU/hr	New	48.83	25	\$12.65	12%	at stock turnover	\$0.02	8,295.88	8,295.88	Annual Energy Outlook, 2015
Large Office	Cooling	RTU	1 kBTU/hr	New	4.10	15	\$6.75	62%	at stock turnover	\$0.14	4,010.87	4,010.87	Annual Energy Outlook, 2015
Large Office	Cooling	Room AC	1 kBTU/hr	New	16.81	15	\$23.62	3%	at stock turnover	\$0.12	843.36	843.36	Annual Energy Outlook, 2015
Large Office	Cooling	Evaporative AC	11 per TR	New	0.00	15	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	New Buildings Institute Study, 2006
Large Office	Cooling	Air-Source Heat Pump	1 kBTU/hr	New	8.54	15	\$21.65	5%	at stock turnover	\$0.17	499.39	499.39	Annual Energy Outlook, 2015
Large Office	Heating	Air-Source Heat Pump	1 kBTU/hr	New	2.41	15	\$21.65	5%	at stock turnover	\$0.17	140.72	140.72	Annual Energy Outlook, 2015
Large Office	Cooling	Geothermal Heat Pump	1 kBTU/hr	New	23.94	25	\$26.36	3%	at stock turnover	\$0.05	691.78	691.78	Annual Energy Outlook, 2015
Large Office	Heating	Geothermal Heat Pump	1 kBTU/hr	New	7.99	25	\$26.36	3%	at stock turnover	\$0.05	230.73	230.73	Annual Energy Outlook, 2015
Large Office	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Large Office	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	31%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Large Office	Ventilation	Ventilation	1000 CFM	New	8,277.68	20	\$1,219.71	100%	at stock turnover	\$0.01	11,705.85	11,705.85	AEG-BEST
Large Office	Water Heating	Water Heater	65 gallons	New	2,163.94	13	\$3,537.01	45%	at stock turnover	\$0.15	11,805.57	11,805.57	7th Power Plan
Large Office	Interior Lighting	Screw-in	lamps	New	52.33	8	\$3.95	100%	at stock turnover	\$0.01	4,957.05	5,805.22	7th Power Plan
Large Office	Interior Lighting	Linear Lighting	lamps	New	65.98	17	\$52.83	100%	at stock turnover	\$0.06	47,135.56	45,497.37	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Large Office	Interior Lighting	High-Bay Fixtures	lamps	New	368.07	15	\$123.86	100%	at stock turnover	\$0.03	33,237.80	31,572.61	Annual Energy Outlook, 2015
Large Office	Exterior Lighting	Screw-in	lamps	New	78.76	8	\$3.95	100%	at stock turnover	\$0.01	1,275.82	1,494.12	7th Power Plan
Large Office	Exterior Lighting	Linear Lighting	lamps	New	90.99	17	\$52.83	100%	at stock turnover	\$0.04	4,918.96	4,748.00	7th Power Plan
Large Office	Exterior Lighting	Area Lighting	lamps	New	1,243.60	15	\$44.55	100%	at stock turnover	\$0.00	39,732.59	38,347.75	Annual Energy Outlook, 2015
Large Office	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	New	1,507.00	11	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Large Office	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	New	605.00	15	\$0.00	17%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Large Office	Refrigeration	Glass Door Display	1 unit	New	767.00	15	\$0.00	93%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Large Office	Refrigeration	Open Display Case	1 unit	New	1,438.00	10	\$0.00	93%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Large Office	Refrigeration	Icemaker	1 unit	New	443.88	9	\$1,073.62	54%	at stock turnover	\$0.31	117.59	118.09	ENERGY STAR
Large Office	Refrigeration	Vending Machine	1 unit	New	81.00	10	\$42.74	54%	at stock turnover	\$0.06	45.18	45.18	EIA 2011-2012 Ref. Case
Large Office	Food Preparation	Oven	1 unit	New	15,104.75	10	\$1,087.12	79%	at stock turnover	\$0.01	784.03	784.03	RTF Workbook
Large Office	Food Preparation	Fryer	1 unit	New	2,881.11	10	\$782.02	92%	at stock turnover	\$0.03	389.87	389.87	RTF Workbook
Large Office	Food Preparation	Dishwasher	1 unit	New	1,348.33	15	\$564.57	24%	at stock turnover	\$0.04	31.73	31.73	ENERGY STAR
Large Office	Food Preparation	Hot Food Container	1 unit	New	802.23	20	\$490.95	24%	at stock turnover	\$0.04	52.96	52.96	RTF Workbook
Large Office	Food Preparation	Steamer	1 unit	New	66,188.82	9	\$837.45	24%	at stock turnover	\$0.00	559.89	559.89	RTF Workbook
Large Office	Office Equipment	Desktop Computer	1 unit	New	123.52	5	\$0.01	125%	at stock turnover	\$0.00	19,438.99	19,438.99	7th Power Plan
Large Office	Office Equipment	Laptop	1 unit	New	36.86	4	\$0.01	125%	at stock turnover	\$0.00	2,575.76	2,575.76	7th Power Plan
Large Office	Office Equipment	Monitor	1 unit	New	30.65	5	\$0.01	125%	at stock turnover	\$0.00	1,217.05	1,217.05	7th Power Plan
Large Office	Office Equipment	Server	1 unit	New	74.10	4	\$0.01	125%	at stock turnover	\$0.00	1,814.23	1,814.23	AEG Research

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Large Office	Office Equipment	Printer/Copier/Fax	1 unit	New	223.00	6	\$0.01	125%	at stock turnover	\$0.00	467.04	467.04	ENERGY STAR
Large Office	Office Equipment	POS Terminal	1 unit	New	123.52	5	\$0.01	44%	at stock turnover	\$0.00	158.04	158.04	7th Power Plan
Large Office	Miscellaneous	Non-HVAC Motors	1 unit	New	0.00	15	\$0.00	107%	at stock turnover	\$0.00	0.00	0.00	N/A
Large Office	Miscellaneous	Pool Pump	1 unit	New	0.00	10	\$246.30	0%	at stock turnover	\$0.00	0.00	0.00	Southern California Edison
Large Office	Miscellaneous	Pool Heater	1 unit	New	0.00	15	\$3,546.07	0%	at stock turnover	\$0.00	0.00	0.00	AEG Research
Large Office	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Small Office	Cooling	Air-Cooled Chiller	1 kBTU/hr	Existing	0.00	20	\$26.36	17%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Small Office	Cooling	Water-Cooled Chiller	1 kBTU/hr	Existing	0.00	25	\$12.65	10%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Small Office	Cooling	RTU	1 kBTU/hr	Existing	6.93	15	\$6.75	55%	at stock turnover	\$0.08	7,111.41	7,111.41	Annual Energy Outlook, 2015
Small Office	Cooling	Room AC	1 kBTU/hr	Existing	26.07	15	\$23.62	3%	at stock turnover	\$0.08	943.58	943.58	Annual Energy Outlook, 2015
Small Office	Cooling	Evaporative AC	11 per TR	Existing	0.00	15	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	New Buildings Institute Study, 2006
Small Office	Cooling	Air-Source Heat Pump	1 kBTU/hr	Existing	13.36	15	\$21.65	4%	at stock turnover	\$0.11	923.42	923.42	Annual Energy Outlook, 2015
Small Office	Heating	Air-Source Heat Pump	1 kBTU/hr	Existing	3.33	15	\$21.65	4%	at stock turnover	\$0.11	230.13	230.13	Annual Energy Outlook, 2015
Small Office	Cooling	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	3%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Small Office	Heating	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	3%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Small Office	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Small Office	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	31%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Small Office	Ventilation	Ventilation	1000 CFM	Existing	5,736.05	20	\$1,219.71	100%	at stock turnover	\$0.02	8,753.33	8,753.33	AEG-BEST
Small Office	Water Heating	Water Heater	65 gallons	Existing	2,163.82	13	\$3,537.01	45%	at stock turnover	\$0.15	6,796.78	6,796.78	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Small Office	Interior Lighting	Screw-in	lamps	Existing	54.41	8	\$3.95	100%	at stock turnover	\$0.01	5,374.30	10,214.28	7th Power Plan
Small Office	Interior Lighting	Linear Lighting	lamps	Existing	71.77	17	\$52.83	100%	at stock turnover	\$0.06	40,387.22	38,420.43	7th Power Plan
Small Office	Interior Lighting	High-Bay Fixtures	lamps	Existing	526.00	15	\$123.86	100%	at stock turnover	\$0.02	43,906.62	40,737.91	Annual Energy Outlook, 2015
Small Office	Exterior Lighting	Screw-in	lamps	Existing	89.13	8	\$3.95	100%	at stock turnover	\$0.01	2,304.97	4,380.78	7th Power Plan
Small Office	Exterior Lighting	Linear Lighting	lamps	Existing	118.70	17	\$52.83	100%	at stock turnover	\$0.03	1,905.10	1,812.33	7th Power Plan
Small Office	Exterior Lighting	Area Lighting	lamps	Existing	1,113.17	15	\$44.55	100%	at stock turnover	\$0.00	40,776.36	38,604.48	Annual Energy Outlook, 2015
Small Office	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	Existing	0.00	11	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Small Office	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	Existing	605.00	15	\$0.00	14%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Small Office	Refrigeration	Glass Door Display	1 unit	Existing	0.00	15	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Small Office	Refrigeration	Open Display Case	1 unit	Existing	0.00	10	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Small Office	Refrigeration	Icemaker	1 unit	Existing	443.88	9	\$1,073.62	45%	at stock turnover	\$0.31	14.85	14.99	ENERGY STAR
Small Office	Refrigeration	Vending Machine	1 unit	Existing	81.00	10	\$42.74	45%	at stock turnover	\$0.06	7.98	7.98	EIA 2011-2012 Ref. Case
Small Office	Food Preparation	Oven	1 unit	Existing	15,104.75	10	\$1,087.12	66%	at stock turnover	\$0.01	52.79	52.79	RTF Workbook
Small Office	Food Preparation	Fryer	1 unit	Existing	2,881.11	10	\$782.02	76%	at stock turnover	\$0.03	22.68	22.68	RTF Workbook
Small Office	Food Preparation	Dishwasher	1 unit	Existing	1,348.33	15	\$564.57	20%	at stock turnover	\$0.04	6.78	6.78	ENERGY STAR
Small Office	Food Preparation	Hot Food Container	1 unit	Existing	802.23	20	\$490.95	20%	at stock turnover	\$0.04	10.06	10.06	RTF Workbook
Small Office	Food Preparation	Steamer	1 unit	Existing	66,188.82	9	\$837.45	20%	at stock turnover	\$0.00	120.00	120.00	RTF Workbook
Small Office	Office Equipment	Desktop Computer	1 unit	Existing	123.52	5	\$0.01	100%	at stock turnover	\$0.00	12,457.10	12,457.10	7th Power Plan
Small Office	Office Equipment	Laptop	1 unit	Existing	36.86	4	\$0.01	100%	at stock turnover	\$0.00	1,527.88	1,527.88	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Small Office	Office Equipment	Monitor	1 unit	Existing	30.65	5	\$0.01	100%	at stock turnover	\$0.00	779.92	779.92	7th Power Plan
Small Office	Office Equipment	Server	1 unit	Existing	74.10	4	\$0.01	100%	at stock turnover	\$0.00	3,473.60	3,473.60	AEG Research
Small Office	Office Equipment	Printer/Copier/Fax	1 unit	Existing	223.00	6	\$0.01	100%	at stock turnover	\$0.00	356.00	356.00	ENERGY STAR
Small Office	Office Equipment	POS Terminal	1 unit	Existing	123.52	5	\$0.01	40%	at stock turnover	\$0.00	300.61	300.61	7th Power Plan
Small Office	Miscellaneous	Non-HVAC Motors	1 unit	Existing	0.00	15	\$0.00	90%	at stock turnover	\$0.00	0.00	0.00	N/A
Small Office	Miscellaneous	Pool Pump	1 unit	Existing	0.00	10	\$246.30	0%	at stock turnover	\$0.00	0.00	0.00	Southern California Edison
Small Office	Miscellaneous	Pool Heater	1 unit	Existing	0.00	15	\$3,546.07	0%	at stock turnover	\$0.00	0.00	0.00	AEG Research
Small Office	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Small Office	Cooling	Air-Cooled Chiller	1 kBTU/hr	New	0.00	20	\$26.36	19%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Small Office	Cooling	Water-Cooled Chiller	1 kBTU/hr	New	0.00	25	\$12.65	12%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Small Office	Cooling	RTU	1 kBTU/hr	New	4.53	15	\$6.75	62%	at stock turnover	\$0.13	6,292.04	6,292.04	Annual Energy Outlook, 2015
Small Office	Cooling	Room AC	1 kBTU/hr	New	19.29	15	\$23.62	3%	at stock turnover	\$0.10	944.21	944.21	Annual Energy Outlook, 2015
Small Office	Cooling	Evaporative AC	11 per TR	New	0.00	15	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	New Buildings Institute Study, 2006
Small Office	Cooling	Air-Source Heat Pump	1 kBTU/hr	New	9.80	15	\$21.65	5%	at stock turnover	\$0.14	969.11	969.11	Annual Energy Outlook, 2015
Small Office	Heating	Air-Source Heat Pump	1 kBTU/hr	New	3.23	15	\$21.65	5%	at stock turnover	\$0.14	319.50	319.50	Annual Energy Outlook, 2015
Small Office	Cooling	Geothermal Heat Pump	1 kBTU/hr	New	26.50	25	\$26.36	3%	at stock turnover	\$0.05	1,349.62	1,349.62	Annual Energy Outlook, 2015
Small Office	Heating	Geothermal Heat Pump	1 kBTU/hr	New	10.88	25	\$26.36	3%	at stock turnover	\$0.05	554.27	554.27	Annual Energy Outlook, 2015
Small Office	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Small Office	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	31%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Small Office	Ventilation	Ventilation	1000 CFM	New	5,155.19	20	\$1,219.71	100%	at stock turnover	\$0.02	9,825.52	9,825.52	AEG-BEST
Small Office	Water Heating	Water Heater	65 gallons	New	2,163.82	13	\$3,537.01	45%	at stock turnover	\$0.15	7,018.24	7,018.24	7th Power Plan
Small Office	Interior Lighting	Screw-in	lamps	New	54.35	8	\$3.95	100%	at stock turnover	\$0.01	5,441.55	6,351.53	7th Power Plan
Small Office	Interior Lighting	Linear Lighting	lamps	New	71.77	17	\$52.83	100%	at stock turnover	\$0.06	39,828.26	38,444.03	7th Power Plan
Small Office	Interior Lighting	High-Bay Fixtures	lamps	New	538.25	15	\$123.86	100%	at stock turnover	\$0.02	51,551.52	49,183.39	Annual Energy Outlook, 2015
Small Office	Exterior Lighting	Screw-in	lamps	New	89.02	8	\$3.95	100%	at stock turnover	\$0.01	2,333.81	2,724.09	7th Power Plan
Small Office	Exterior Lighting	Linear Lighting	lamps	New	118.70	17	\$52.83	100%	at stock turnover	\$0.03	1,878.73	1,813.44	7th Power Plan
Small Office	Exterior Lighting	Area Lighting	lamps	New	1,113.17	15	\$44.55	100%	at stock turnover	\$0.00	46,569.94	44,946.79	Annual Energy Outlook, 2015
Small Office	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	New	0.00	11	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Small Office	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	New	605.00	15	\$0.00	17%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Small Office	Refrigeration	Glass Door Display	1 unit	New	0.00	15	\$0.00	93%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Small Office	Refrigeration	Open Display Case	1 unit	New	0.00	10	\$0.00	93%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Small Office	Refrigeration	Icemaker	1 unit	New	443.88	9	\$1,073.62	54%	at stock turnover	\$0.31	18.57	18.64	ENERGY STAR
Small Office	Refrigeration	Vending Machine	1 unit	New	81.00	10	\$42.74	54%	at stock turnover	\$0.06	9.53	9.53	EIA 2011-2012 Ref. Case
Small Office	Food Preparation	Oven	1 unit	New	15,104.75	10	\$1,087.12	79%	at stock turnover	\$0.01	65.72	65.72	RTF Workbook
Small Office	Food Preparation	Fryer	1 unit	New	2,881.11	10	\$782.02	92%	at stock turnover	\$0.03	28.23	28.23	RTF Workbook
Small Office	Food Preparation	Dishwasher	1 unit	New	1,348.33	15	\$564.57	24%	at stock turnover	\$0.04	8.76	8.76	ENERGY STAR
Small Office	Food Preparation	Hot Food Container	1 unit	New	802.23	20	\$490.95	24%	at stock turnover	\$0.04	14.63	14.63	RTF Workbook
Small Office	Food Preparation	Steamer	1 unit	New	66,188.82	9	\$837.45	24%	at stock turnover	\$0.00	154.62	154.62	RTF Workbook

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Small Office	Office Equipment	Desktop Computer	1 unit	New	123.52	5	\$0.01	125%	at stock turnover	\$0.00	10,896.32	10,896.32	7th Power Plan
Small Office	Office Equipment	Laptop	1 unit	New	36.86	4	\$0.01	125%	at stock turnover	\$0.00	1,443.81	1,443.81	7th Power Plan
Small Office	Office Equipment	Monitor	1 unit	New	30.65	5	\$0.01	125%	at stock turnover	\$0.00	682.20	682.20	7th Power Plan
Small Office	Office Equipment	Server	1 unit	New	74.10	4	\$0.01	125%	at stock turnover	\$0.00	3,050.84	3,050.84	AEG Research
Small Office	Office Equipment	Printer/Copier/Fax	1 unit	New	223.00	6	\$0.01	125%	at stock turnover	\$0.00	392.69	392.69	ENERGY STAR
Small Office	Office Equipment	POS Terminal	1 unit	New	123.52	5	\$0.01	44%	at stock turnover	\$0.00	265.75	265.75	7th Power Plan
Small Office	Miscellaneous	Non-HVAC Motors	1 unit	New	0.00	15	\$0.00	107%	at stock turnover	\$0.00	0.00	0.00	N/A
Small Office	Miscellaneous	Pool Pump	1 unit	New	0.00	10	\$246.30	0%	at stock turnover	\$0.00	0.00	0.00	Southern California Edison
Small Office	Miscellaneous	Pool Heater	1 unit	New	0.00	15	\$3,546.07	0%	at stock turnover	\$0.00	0.00	0.00	AEG Research
Small Office	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Large Retail	Cooling	Air-Cooled Chiller	1 kBTU/hr	Existing	30.66	20	\$26.36	17%	at stock turnover	\$0.06	201.49	201.49	Annual Energy Outlook, 2015
Large Retail	Cooling	Water-Cooled Chiller	1 kBTU/hr	Existing	42.83	25	\$12.65	10%	at stock turnover	\$0.02	173.34	173.34	Annual Energy Outlook, 2015
Large Retail	Cooling	RTU	1 kBTU/hr	Existing	4.82	15	\$6.75	55%	at stock turnover	\$0.12	2,654.20	2,654.20	Annual Energy Outlook, 2015
Large Retail	Cooling	Room AC	1 kBTU/hr	Existing	18.14	15	\$23.62	3%	at stock turnover	\$0.11	436.99	436.99	Annual Energy Outlook, 2015
Large Retail	Cooling	Evaporative AC	11 per TR	Existing	0.00	15	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	New Buildings Institute Study, 2006
Large Retail	Cooling	Air-Source Heat Pump	1 kBTU/hr	Existing	9.30	15	\$21.65	4%	at stock turnover	\$0.16	198.82	198.82	Annual Energy Outlook, 2015
Large Retail	Heating	Air-Source Heat Pump	1 kBTU/hr	Existing	1.97	15	\$21.65	4%	at stock turnover	\$0.16	42.23	42.23	Annual Energy Outlook, 2015
Large Retail	Cooling	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	3%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Large Retail	Heating	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	3%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Large Retail	Heating	Electric Furnace	1 kBtu/hr	Existing	0.00	18	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Large Retail	Heating	Electric Room Heat	3.5 kBtu/hr	Existing	0.00	18	\$0.00	31%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Large Retail	Ventilation	Ventilation	1000 CFM	Existing	5,675.13	20	\$1,219.71	100%	at stock turnover	\$0.02	8,665.61	8,665.61	AEG-BEST
Large Retail	Water Heating	Water Heater	65 gallons	Existing	2,132.74	13	\$3,537.01	45%	at stock turnover	\$0.15	3,754.08	3,754.08	7th Power Plan
Large Retail	Interior Lighting	Screw-in	lamps	Existing	82.44	8	\$3.95	100%	at stock turnover	\$0.01	2,735.46	4,003.77	7th Power Plan
Large Retail	Interior Lighting	Linear Lighting	lamps	Existing	145.01	17	\$52.83	100%	at stock turnover	\$0.03	28,699.61	27,332.52	7th Power Plan
Large Retail	Interior Lighting	High-Bay Fixtures	lamps	Existing	889.95	15	\$123.86	100%	at stock turnover	\$0.01	18,425.72	17,015.59	Annual Energy Outlook, 2015
Large Retail	Exterior Lighting	Screw-in	lamps	Existing	72.79	8	\$3.95	100%	at stock turnover	\$0.01	977.49	1,430.71	7th Power Plan
Large Retail	Exterior Lighting	Linear Lighting	lamps	Existing	136.75	17	\$52.83	100%	at stock turnover	\$0.03	761.67	725.39	7th Power Plan
Large Retail	Exterior Lighting	Area Lighting	lamps	Existing	1,153.50	15	\$44.55	100%	at stock turnover	\$0.00	8,965.17	8,497.83	Annual Energy Outlook, 2015
Large Retail	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	Existing	1,507.00	11	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Large Retail	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	Existing	605.00	15	\$0.00	14%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Large Retail	Refrigeration	Glass Door Display	1 unit	Existing	767.00	15	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Large Retail	Refrigeration	Open Display Case	1 unit	Existing	1,438.00	10	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Large Retail	Refrigeration	Icemaker	1 unit	Existing	443.88	9	\$1,073.62	45%	at stock turnover	\$0.31	106.33	107.34	ENERGY STAR
Large Retail	Refrigeration	Vending Machine	1 unit	Existing	81.00	10	\$42.74	45%	at stock turnover	\$0.06	32.19	32.19	EIA 2011-2012 Ref. Case
Large Retail	Food Preparation	Oven	1 unit	Existing	15,104.75	10	\$1,087.12	66%	at stock turnover	\$0.01	181.05	181.05	RTF Workbook
Large Retail	Food Preparation	Fryer	1 unit	Existing	2,881.11	10	\$782.02	76%	at stock turnover	\$0.03	143.78	143.78	RTF Workbook
Large Retail	Food Preparation	Dishwasher	1 unit	Existing	1,348.33	15	\$564.57	20%	at stock turnover	\$0.04	17.54	17.54	ENERGY STAR

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Large Retail	Food Preparation	Hot Food Container	1 unit	Existing	802.23	20	\$490.95	20%	at stock turnover	\$0.04	25.98	25.98	RTF Workbook
Large Retail	Food Preparation	Steamer	1 unit	Existing	66,188.82	9	\$837.45	20%	at stock turnover	\$0.00	312.17	312.17	RTF Workbook
Large Retail	Office Equipment	Desktop Computer	1 unit	Existing	123.52	5	\$0.01	100%	at stock turnover	\$0.00	1,116.91	1,116.91	7th Power Plan
Large Retail	Office Equipment	Laptop	1 unit	Existing	36.86	4	\$0.01	100%	at stock turnover	\$0.00	138.02	138.02	7th Power Plan
Large Retail	Office Equipment	Monitor	1 unit	Existing	30.65	5	\$0.01	100%	at stock turnover	\$0.00	69.93	69.93	7th Power Plan
Large Retail	Office Equipment	Server	1 unit	Existing	74.10	4	\$0.01	100%	at stock turnover	\$0.00	138.55	138.55	AEG Research
Large Retail	Office Equipment	Printer/Copier/Fax	1 unit	Existing	223.00	6	\$0.01	100%	at stock turnover	\$0.00	32.46	32.46	ENERGY STAR
Large Retail	Office Equipment	POS Terminal	1 unit	Existing	123.52	5	\$0.01	40%	at stock turnover	\$0.00	38.55	38.55	7th Power Plan
Large Retail	Miscellaneous	Non-HVAC Motors	1 unit	Existing	0.00	15	\$0.00	90%	at stock turnover	\$0.00	0.00	0.00	N/A
Large Retail	Miscellaneous	Pool Pump	1 unit	Existing	0.00	10	\$246.30	0%	at stock turnover	\$0.00	0.00	0.00	Southern California Edison
Large Retail	Miscellaneous	Pool Heater	1 unit	Existing	0.00	15	\$3,546.07	0%	at stock turnover	\$0.00	0.00	0.00	AEG Research
Large Retail	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Large Retail	Cooling	Air-Cooled Chiller	1 kBTU/hr	New	25.93	20	\$26.36	19%	at stock turnover	\$0.07	293.52	293.52	Annual Energy Outlook, 2015
Large Retail	Cooling	Water-Cooled Chiller	1 kBTU/hr	New	36.45	25	\$12.65	12%	at stock turnover	\$0.02	219.77	219.77	Annual Energy Outlook, 2015
Large Retail	Cooling	RTU	1 kBTU/hr	New	4.10	15	\$6.75	62%	at stock turnover	\$0.14	3,068.55	3,068.55	Annual Energy Outlook, 2015
Large Retail	Cooling	Room AC	1 kBTU/hr	New	13.42	15	\$23.62	3%	at stock turnover	\$0.15	440.02	440.02	Annual Energy Outlook, 2015
Large Retail	Cooling	Evaporative AC	11 per TR	New	0.00	15	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	New Buildings Institute Study, 2006
Large Retail	Cooling	Air-Source Heat Pump	1 kBTU/hr	New	7.84	15	\$21.65	5%	at stock turnover	\$0.19	241.09	241.09	Annual Energy Outlook, 2015
Large Retail	Heating	Air-Source Heat Pump	1 kBTU/hr	New	1.92	15	\$21.65	5%	at stock turnover	\$0.19	58.90	58.90	Annual Energy Outlook, 2015

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Large Retail	Cooling	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	3%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Large Retail	Heating	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	3%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Large Retail	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Large Retail	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	31%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Large Retail	Ventilation	Ventilation	1000 CFM	New	4,885.93	20	\$1,219.71	100%	at stock turnover	\$0.02	8,388.96	8,388.96	AEG-BEST
Large Retail	Water Heating	Water Heater	65 gallons	New	2,164.03	13	\$3,537.01	45%	at stock turnover	\$0.15	3,630.60	3,630.60	7th Power Plan
Large Retail	Interior Lighting	Screw-in	lamps	New	82.36	8	\$3.95	100%	at stock turnover	\$0.01	2,572.99	2,736.97	7th Power Plan
Large Retail	Interior Lighting	Linear Lighting	lamps	New	145.01	17	\$52.83	100%	at stock turnover	\$0.03	26,233.68	25,333.53	7th Power Plan
Large Retail	Interior Lighting	High-Bay Fixtures	lamps	New	891.85	15	\$123.86	100%	at stock turnover	\$0.01	19,628.76	18,642.94	Annual Energy Outlook, 2015
Large Retail	Exterior Lighting	Screw-in	lamps	New	72.72	8	\$3.95	100%	at stock turnover	\$0.01	919.43	978.03	7th Power Plan
Large Retail	Exterior Lighting	Linear Lighting	lamps	New	136.75	17	\$52.83	100%	at stock turnover	\$0.03	696.23	672.34	7th Power Plan
Large Retail	Exterior Lighting	Area Lighting	lamps	New	1,153.50	15	\$44.55	100%	at stock turnover	\$0.00	9,485.46	9,158.74	Annual Energy Outlook, 2015
Large Retail	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	New	1,507.00	11	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Large Retail	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	New	605.00	15	\$0.00	17%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Large Retail	Refrigeration	Glass Door Display	1 unit	New	767.00	15	\$0.00	93%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Large Retail	Refrigeration	Open Display Case	1 unit	New	1,438.00	10	\$0.00	93%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Large Retail	Refrigeration	Icemaker	1 unit	New	443.88	9	\$1,073.62	54%	at stock turnover	\$0.31	110.67	111.13	ENERGY STAR
Large Retail	Refrigeration	Vending Machine	1 unit	New	81.00	10	\$42.74	54%	at stock turnover	\$0.06	41.74	41.74	EIA 2011-2012 Ref. Case
Large Retail	Food Preparation	Oven	1 unit	New	15,104.75	10	\$1,087.12	79%	at stock turnover	\$0.01	296.33	296.33	RTF Workbook

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Large Retail	Food Preparation	Fryer	1 unit	New	2,881.11	10	\$782.02	92%	at stock turnover	\$0.03	184.90	184.90	RTF Workbook
Large Retail	Food Preparation	Dishwasher	1 unit	New	1,348.33	15	\$564.57	24%	at stock turnover	\$0.04	23.50	23.50	ENERGY STAR
Large Retail	Food Preparation	Hot Food Container	1 unit	New	802.23	20	\$490.95	24%	at stock turnover	\$0.04	39.30	39.30	RTF Workbook
Large Retail	Food Preparation	Steamer	1 unit	New	66,188.82	9	\$837.45	24%	at stock turnover	\$0.00	414.40	414.40	RTF Workbook
Large Retail	Office Equipment	Desktop Computer	1 unit	New	123.52	5	\$0.01	125%	at stock turnover	\$0.00	809.31	809.31	7th Power Plan
Large Retail	Office Equipment	Laptop	1 unit	New	36.86	4	\$0.01	125%	at stock turnover	\$0.00	107.47	107.47	7th Power Plan
Large Retail	Office Equipment	Monitor	1 unit	New	30.65	5	\$0.01	125%	at stock turnover	\$0.00	50.67	50.67	7th Power Plan
Large Retail	Office Equipment	Server	1 unit	New	74.10	4	\$0.01	125%	at stock turnover	\$0.00	107.49	107.49	AEG Research
Large Retail	Office Equipment	Printer/Copier/Fax	1 unit	New	223.00	6	\$0.01	125%	at stock turnover	\$0.00	29.58	29.58	ENERGY STAR
Large Retail	Office Equipment	POS Terminal	1 unit	New	123.52	5	\$0.01	44%	at stock turnover	\$0.00	38.00	38.00	7th Power Plan
Large Retail	Miscellaneous	Non-HVAC Motors	1 unit	New	0.00	15	\$0.00	107%	at stock turnover	\$0.00	0.00	0.00	N/A
Large Retail	Miscellaneous	Pool Pump	1 unit	New	0.00	10	\$246.30	0%	at stock turnover	\$0.00	0.00	0.00	Southern California Edison
Large Retail	Miscellaneous	Pool Heater	1 unit	New	0.00	15	\$3,546.07	0%	at stock turnover	\$0.00	0.00	0.00	AEG Research
Large Retail	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Small Retail	Cooling	Air-Cooled Chiller	1 kBtu/hr	Existing	0.00	20	\$26.36	17%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Small Retail	Cooling	Water-Cooled Chiller	1 kBtu/hr	Existing	0.00	25	\$12.65	10%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Small Retail	Cooling	RTU	1 kBtu/hr	Existing	4.25	15	\$6.75	55%	at stock turnover	\$0.13	4,590.76	4,590.76	Annual Energy Outlook, 2015
Small Retail	Cooling	Room AC	1 kBtu/hr	Existing	14.08	15	\$23.62	3%	at stock turnover	\$0.14	454.01	454.01	Annual Energy Outlook, 2015
Small Retail	Cooling	Evaporative AC	11 per TR	Existing	0.00	15	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	New Buildings Institute Study, 2006

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Small Retail	Cooling	Air-Source Heat Pump	1 kBTU/hr	Existing	8.19	15	\$21.65	4%	at stock turnover	\$0.18	430.95	430.95	Annual Energy Outlook, 2015
Small Retail	Heating	Air-Source Heat Pump	1 kBTU/hr	Existing	1.95	15	\$21.65	4%	at stock turnover	\$0.18	102.63	102.63	Annual Energy Outlook, 2015
Small Retail	Cooling	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	3%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Small Retail	Heating	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	3%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Small Retail	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Small Retail	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	31%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Small Retail	Ventilation	Ventilation	1000 CFM	Existing	1,588.58	20	\$1,219.71	100%	at stock turnover	\$0.06	4,676.44	4,676.44	AEG-BEST
Small Retail	Water Heating	Water Heater	65 gallons	Existing	2,132.77	13	\$3,537.01	45%	at stock turnover	\$0.15	5,231.32	5,231.32	7th Power Plan
Small Retail	Interior Lighting	Screw-in	lamps	Existing	54.41	8	\$3.95	100%	at stock turnover	\$0.01	3,480.62	5,094.43	7th Power Plan
Small Retail	Interior Lighting	Linear Lighting	lamps	Existing	95.71	17	\$52.83	100%	at stock turnover	\$0.04	36,517.57	34,778.07	7th Power Plan
Small Retail	Interior Lighting	High-Bay Fixtures	lamps	Existing	587.37	15	\$123.86	100%	at stock turnover	\$0.02	23,445.01	21,650.74	Annual Energy Outlook, 2015
Small Retail	Exterior Lighting	Screw-in	lamps	Existing	72.79	8	\$3.95	100%	at stock turnover	\$0.01	1,884.50	2,758.25	7th Power Plan
Small Retail	Exterior Lighting	Linear Lighting	lamps	Existing	136.75	17	\$52.83	100%	at stock turnover	\$0.03	1,468.42	1,398.47	7th Power Plan
Small Retail	Exterior Lighting	Area Lighting	lamps	Existing	1,153.50	15	\$44.55	100%	at stock turnover	\$0.00	17,283.84	16,382.87	Annual Energy Outlook, 2015
Small Retail	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	Existing	0.00	11	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Small Retail	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	Existing	605.00	15	\$0.00	14%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Small Retail	Refrigeration	Glass Door Display	1 unit	Existing	767.00	15	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Small Retail	Refrigeration	Open Display Case	1 unit	Existing	1,438.00	10	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Small Retail	Refrigeration	Icemaker	1 unit	Existing	443.88	9	\$1,073.62	45%	at stock turnover	\$0.31	7.38	7.45	ENERGY STAR

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Small Retail	Refrigeration	Vending Machine	1 unit	Existing	81.00	10	\$42.74	45%	at stock turnover	\$0.06	2.23	2.23	EIA 2011-2012 Ref. Case
Small Retail	Food Preparation	Oven	1 unit	Existing	15,104.75	10	\$1,087.12	66%	at stock turnover	\$0.01	15.60	15.60	RTF Workbook
Small Retail	Food Preparation	Fryer	1 unit	Existing	2,881.11	10	\$782.02	76%	at stock turnover	\$0.03	13.40	13.40	RTF Workbook
Small Retail	Food Preparation	Dishwasher	1 unit	Existing	1,348.33	15	\$564.57	20%	at stock turnover	\$0.04	4.00	4.00	ENERGY STAR
Small Retail	Food Preparation	Hot Food Container	1 unit	Existing	802.23	20	\$490.95	20%	at stock turnover	\$0.04	5.92	5.92	RTF Workbook
Small Retail	Food Preparation	Steamer	1 unit	Existing	66,188.82	9	\$837.45	20%	at stock turnover	\$0.00	71.11	71.11	RTF Workbook
Small Retail	Office Equipment	Desktop Computer	1 unit	Existing	123.52	5	\$0.01	100%	at stock turnover	\$0.00	601.71	601.71	7th Power Plan
Small Retail	Office Equipment	Laptop	1 unit	Existing	36.86	4	\$0.01	100%	at stock turnover	\$0.00	74.35	74.35	7th Power Plan
Small Retail	Office Equipment	Monitor	1 unit	Existing	30.65	5	\$0.01	100%	at stock turnover	\$0.00	37.67	37.67	7th Power Plan
Small Retail	Office Equipment	Server	1 unit	Existing	74.10	4	\$0.01	100%	at stock turnover	\$0.00	679.39	679.39	AEG Research
Small Retail	Office Equipment	Printer/Copier/Fax	1 unit	Existing	223.00	6	\$0.01	100%	at stock turnover	\$0.00	13.99	13.99	ENERGY STAR
Small Retail	Office Equipment	POS Terminal	1 unit	Existing	123.52	5	\$0.01	40%	at stock turnover	\$0.00	276.93	276.93	7th Power Plan
Small Retail	Miscellaneous	Non-HVAC Motors	1 unit	Existing	0.00	15	\$0.00	90%	at stock turnover	\$0.00	0.00	0.00	N/A
Small Retail	Miscellaneous	Pool Pump	1 unit	Existing	0.00	10	\$246.30	0%	at stock turnover	\$0.00	0.00	0.00	Southern California Edison
Small Retail	Miscellaneous	Pool Heater	1 unit	Existing	0.00	15	\$3,546.07	0%	at stock turnover	\$0.00	0.00	0.00	AEG Research
Small Retail	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Small Retail	Cooling	Air-Cooled Chiller	1 kBTU/hr	New	0.00	20	\$26.36	19%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Small Retail	Cooling	Water-Cooled Chiller	1 kBTU/hr	New	0.00	25	\$12.65	12%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Small Retail	Cooling	RTU	1 kBTU/hr	New	3.21	15	\$6.75	62%	at stock turnover	\$0.18	4,713.96	4,713.96	Annual Energy Outlook, 2015

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Small Retail	Cooling	Room AC	1 kBTU/hr	New	10.42	15	\$23.62	3%	at stock turnover	\$0.19	457.15	457.15	Annual Energy Outlook, 2015
Small Retail	Cooling	Evaporative AC	11 per TR	New	0.00	15	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	New Buildings Institute Study, 2006
Small Retail	Cooling	Air-Source Heat Pump	1 kBTU/hr	New	6.01	15	\$21.65	5%	at stock turnover	\$0.23	454.41	454.41	Annual Energy Outlook, 2015
Small Retail	Heating	Air-Source Heat Pump	1 kBTU/hr	New	1.89	15	\$21.65	5%	at stock turnover	\$0.23	143.16	143.16	Annual Energy Outlook, 2015
Small Retail	Cooling	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	3%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Small Retail	Heating	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	3%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Small Retail	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Small Retail	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	31%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Small Retail	Ventilation	Ventilation	1000 CFM	New	1,472.04	20	\$1,219.71	100%	at stock turnover	\$0.06	4,872.62	4,872.62	AEG-BEST
Small Retail	Water Heating	Water Heater	65 gallons	New	2,164.06	13	\$3,537.01	45%	at stock turnover	\$0.15	5,059.25	5,059.25	7th Power Plan
Small Retail	Interior Lighting	Screw-in	lamps	New	54.35	8	\$3.95	100%	at stock turnover	\$0.01	3,273.89	3,482.54	7th Power Plan
Small Retail	Interior Lighting	Linear Lighting	lamps	New	95.71	17	\$52.83	100%	at stock turnover	\$0.04	33,379.90	32,234.55	7th Power Plan
Small Retail	Interior Lighting	High-Bay Fixtures	lamps	New	588.62	15	\$123.86	100%	at stock turnover	\$0.02	24,975.76	23,721.40	Annual Energy Outlook, 2015
Small Retail	Exterior Lighting	Screw-in	lamps	New	72.72	8	\$3.95	100%	at stock turnover	\$0.01	1,772.56	1,885.54	7th Power Plan
Small Retail	Exterior Lighting	Linear Lighting	lamps	New	136.75	17	\$52.83	100%	at stock turnover	\$0.03	1,342.25	1,296.19	7th Power Plan
Small Retail	Exterior Lighting	Area Lighting	lamps	New	1,153.50	15	\$44.55	100%	at stock turnover	\$0.00	18,286.90	17,657.04	Annual Energy Outlook, 2015
Small Retail	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	New	0.00	11	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Small Retail	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	New	605.00	15	\$0.00	17%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Small Retail	Refrigeration	Glass Door Display	1 unit	New	767.00	15	\$0.00	93%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Small Retail	Refrigeration	Open Display Case	1 unit	New	1,438.00	10	\$0.00	93%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Small Retail	Refrigeration	Icemaker	1 unit	New	443.88	9	\$1,073.62	54%	at stock turnover	\$0.31	7.68	7.71	ENERGY STAR
Small Retail	Refrigeration	Vending Machine	1 unit	New	81.00	10	\$42.74	54%	at stock turnover	\$0.06	2.90	2.90	EIA 2011-2012 Ref. Case
Small Retail	Food Preparation	Oven	1 unit	New	15,104.75	10	\$1,087.12	79%	at stock turnover	\$0.01	25.53	25.53	RTF Workbook
Small Retail	Food Preparation	Fryer	1 unit	New	2,881.11	10	\$782.02	92%	at stock turnover	\$0.03	17.23	17.23	RTF Workbook
Small Retail	Food Preparation	Dishwasher	1 unit	New	1,348.33	15	\$564.57	24%	at stock turnover	\$0.04	5.35	5.35	ENERGY STAR
Small Retail	Food Preparation	Hot Food Container	1 unit	New	802.23	20	\$490.95	24%	at stock turnover	\$0.04	8.95	8.95	RTF Workbook
Small Retail	Food Preparation	Steamer	1 unit	New	66,188.82	9	\$837.45	24%	at stock turnover	\$0.00	94.40	94.40	RTF Workbook
Small Retail	Office Equipment	Desktop Computer	1 unit	New	123.52	5	\$0.01	125%	at stock turnover	\$0.00	436.00	436.00	7th Power Plan
Small Retail	Office Equipment	Laptop	1 unit	New	36.86	4	\$0.01	125%	at stock turnover	\$0.00	57.90	57.90	7th Power Plan
Small Retail	Office Equipment	Monitor	1 unit	New	30.65	5	\$0.01	125%	at stock turnover	\$0.00	27.30	27.30	7th Power Plan
Small Retail	Office Equipment	Server	1 unit	New	74.10	4	\$0.01	125%	at stock turnover	\$0.00	533.99	533.99	AEG Research
Small Retail	Office Equipment	Printer/Copier/Fax	1 unit	New	223.00	6	\$0.01	125%	at stock turnover	\$0.00	12.75	12.75	ENERGY STAR
Small Retail	Office Equipment	POS Terminal	1 unit	New	123.52	5	\$0.01	44%	at stock turnover	\$0.00	272.95	272.95	7th Power Plan
Small Retail	Miscellaneous	Non-HVAC Motors	1 unit	New	0.00	15	\$0.00	107%	at stock turnover	\$0.00	0.00	0.00	N/A
Small Retail	Miscellaneous	Pool Pump	1 unit	New	0.00	10	\$246.30	0%	at stock turnover	\$0.00	0.00	0.00	Southern California Edison
Small Retail	Miscellaneous	Pool Heater	1 unit	New	0.00	15	\$3,546.07	0%	at stock turnover	\$0.00	0.00	0.00	AEG Research
Small Retail	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Restaurant	Cooling	Air-Cooled Chiller	1 kBTU/hr	Existing	0.00	20	\$26.36	17%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Restaurant	Cooling	Water-Cooled Chiller	1 kBTU/hr	Existing	0.00	25	\$12.65	10%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Restaurant	Cooling	RTU	1 kBTU/hr	Existing	5.05	15	\$6.75	55%	at stock turnover	\$0.11	1,365.90	1,365.90	Annual Energy Outlook, 2015
Restaurant	Cooling	Room AC	1 kBTU/hr	Existing	19.01	15	\$23.62	3%	at stock turnover	\$0.10	188.07	188.07	Annual Energy Outlook, 2015
Restaurant	Cooling	Evaporative AC	11 per TR	Existing	0.00	15	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	New Buildings Institute Study, 2006
Restaurant	Cooling	Air-Source Heat Pump	1 kBTU/hr	Existing	9.74	15	\$21.65	4%	at stock turnover	\$0.16	139.44	139.44	Annual Energy Outlook, 2015
Restaurant	Heating	Air-Source Heat Pump	1 kBTU/hr	Existing	1.51	15	\$21.65	4%	at stock turnover	\$0.16	21.67	21.67	Annual Energy Outlook, 2015
Restaurant	Cooling	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	3%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Restaurant	Heating	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	3%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Restaurant	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Restaurant	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	31%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Restaurant	Ventilation	Ventilation	1000 CFM	Existing	902.47	20	\$1,219.71	100%	at stock turnover	\$0.10	1,257.30	1,257.30	AEG-BEST
Restaurant	Water Heating	Water Heater	65 gallons	Existing	2,164.04	13	\$3,537.01	45%	at stock turnover	\$0.15	11,137.97	11,137.97	7th Power Plan
Restaurant	Interior Lighting	Screw-in	lamps	Existing	91.03	8	\$3.95	100%	at stock turnover	\$0.01	2,911.88	4,324.82	7th Power Plan
Restaurant	Interior Lighting	Linear Lighting	lamps	Existing	167.21	17	\$52.83	100%	at stock turnover	\$0.02	6,093.66	5,803.39	7th Power Plan
Restaurant	Interior Lighting	High-Bay Fixtures	lamps	Existing	1,508.37	15	\$123.86	100%	at stock turnover	\$0.01	12,327.10	11,684.52	Annual Energy Outlook, 2015
Restaurant	Exterior Lighting	Screw-in	lamps	Existing	75.85	8	\$3.95	100%	at stock turnover	\$0.01	504.32	749.04	7th Power Plan
Restaurant	Exterior Lighting	Linear Lighting	lamps	Existing	138.73	17	\$52.83	100%	at stock turnover	\$0.03	1,315.49	1,252.82	7th Power Plan
Restaurant	Exterior Lighting	Area Lighting	lamps	Existing	1,132.87	15	\$44.55	100%	at stock turnover	\$0.00	7,361.89	6,978.13	Annual Energy Outlook, 2015
Restaurant	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	Existing	1,507.00	11	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case

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Restaurant	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	Existing	605.00	15	\$0.00	14%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Restaurant	Refrigeration	Glass Door Display	1 unit	Existing	767.00	15	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Restaurant	Refrigeration	Open Display Case	1 unit	Existing	1,438.00	10	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Restaurant	Refrigeration	Icemaker	1 unit	Existing	443.88	9	\$1,073.62	45%	at stock turnover	\$0.31	824.92	832.72	ENERGY STAR
Restaurant	Refrigeration	Vending Machine	1 unit	Existing	81.00	10	\$42.74	45%	at stock turnover	\$0.06	216.23	216.23	EIA 2011-2012 Ref. Case
Restaurant	Food Preparation	Oven	1 unit	Existing	15,104.75	10	\$1,087.12	66%	at stock turnover	\$0.01	878.37	878.37	RTF Workbook
Restaurant	Food Preparation	Fryer	1 unit	Existing	2,881.11	10	\$782.02	76%	at stock turnover	\$0.03	2,736.20	2,736.20	RTF Workbook
Restaurant	Food Preparation	Dishwasher	1 unit	Existing	1,348.33	15	\$564.57	20%	at stock turnover	\$0.04	157.90	157.90	ENERGY STAR
Restaurant	Food Preparation	Hot Food Container	1 unit	Existing	802.23	20	\$490.95	20%	at stock turnover	\$0.04	618.88	618.88	RTF Workbook
Restaurant	Food Preparation	Steamer	1 unit	Existing	66,188.82	9	\$837.45	20%	at stock turnover	\$0.00	1,416.67	1,416.67	RTF Workbook
Restaurant	Office Equipment	Desktop Computer	1 unit	Existing	123.52	5	\$0.01	100%	at stock turnover	\$0.00	406.07	406.07	7th Power Plan
Restaurant	Office Equipment	Laptop	1 unit	Existing	36.86	4	\$0.01	100%	at stock turnover	\$0.00	40.14	40.14	7th Power Plan
Restaurant	Office Equipment	Monitor	1 unit	Existing	30.65	5	\$0.01	100%	at stock turnover	\$0.00	25.42	25.42	7th Power Plan
Restaurant	Office Equipment	Server	1 unit	Existing	74.10	4	\$0.01	100%	at stock turnover	\$0.00	306.87	306.87	AEG Research
Restaurant	Office Equipment	Printer/Copier/Fax	1 unit	Existing	223.00	6	\$0.01	100%	at stock turnover	\$0.00	18.88	18.88	ENERGY STAR
Restaurant	Office Equipment	POS Terminal	1 unit	Existing	123.52	5	\$0.01	40%	at stock turnover	\$0.00	186.89	186.89	7th Power Plan
Restaurant	Miscellaneous	Non-HVAC Motors	1 unit	Existing	0.00	15	\$0.00	90%	at stock turnover	\$0.00	0.00	0.00	N/A
Restaurant	Miscellaneous	Pool Pump	1 unit	Existing	0.00	10	\$246.30	0%	at stock turnover	\$0.00	0.00	0.00	Southern California Edison
Restaurant	Miscellaneous	Pool Heater	1 unit	Existing	0.00	15	\$3,546.07	0%	at stock turnover	\$0.00	0.00	0.00	AEG Research

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Restaurant	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Restaurant	Cooling	Air-Cooled Chiller	1 kBTU/hr	New	0.00	20	\$26.36	19%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Restaurant	Cooling	Water-Cooled Chiller	1 kBTU/hr	New	0.00	25	\$12.65	12%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Restaurant	Cooling	RTU	1 kBTU/hr	New	3.88	15	\$6.75	62%	at stock turnover	\$0.15	1,315.36	1,315.36	Annual Energy Outlook, 2015
Restaurant	Cooling	Room AC	1 kBTU/hr	New	14.07	15	\$23.62	3%	at stock turnover	\$0.14	174.40	174.40	Annual Energy Outlook, 2015
Restaurant	Cooling	Evaporative AC	11 per TR	New	0.00	15	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	New Buildings Institute Study, 2006
Restaurant	Cooling	Air-Source Heat Pump	1 kBTU/hr	New	7.48	15	\$21.65	5%	at stock turnover	\$0.20	142.15	142.15	Annual Energy Outlook, 2015
Restaurant	Heating	Air-Source Heat Pump	1 kBTU/hr	New	1.54	15	\$21.65	5%	at stock turnover	\$0.20	29.27	29.27	Annual Energy Outlook, 2015
Restaurant	Cooling	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	3%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Restaurant	Heating	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	3%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Restaurant	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Restaurant	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	31%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Restaurant	Ventilation	Ventilation	1000 CFM	New	782.95	20	\$1,219.71	100%	at stock turnover	\$0.11	972.22	972.22	AEG-BEST
Restaurant	Water Heating	Water Heater	65 gallons	New	2,164.04	13	\$3,537.01	45%	at stock turnover	\$0.15	11,146.69	11,146.69	7th Power Plan
Restaurant	Interior Lighting	Screw-in	lamps	New	92.53	8	\$3.95	100%	at stock turnover	\$0.01	2,739.49	2,930.00	7th Power Plan
Restaurant	Interior Lighting	Linear Lighting	lamps	New	167.21	17	\$52.83	100%	at stock turnover	\$0.02	5,570.08	5,378.95	7th Power Plan
Restaurant	Interior Lighting	High-Bay Fixtures	lamps	New	1,508.37	15	\$123.86	100%	at stock turnover	\$0.01	13,042.50	12,593.27	Annual Energy Outlook, 2015
Restaurant	Exterior Lighting	Screw-in	lamps	New	77.10	8	\$3.95	100%	at stock turnover	\$0.01	474.47	507.46	7th Power Plan
Restaurant	Exterior Lighting	Linear Lighting	lamps	New	138.73	17	\$52.83	100%	at stock turnover	\$0.03	1,202.46	1,161.20	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Restaurant	Exterior Lighting	Area Lighting	lamps	New	1,132.87	15	\$44.55	100%	at stock turnover	\$0.00	7,789.13	7,520.85	Annual Energy Outlook, 2015
Restaurant	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	New	1,507.00	11	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Restaurant	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	New	605.00	15	\$0.00	17%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Restaurant	Refrigeration	Glass Door Display	1 unit	New	767.00	15	\$0.00	93%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Restaurant	Refrigeration	Open Display Case	1 unit	New	1,438.00	10	\$0.00	93%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Restaurant	Refrigeration	Icemaker	1 unit	New	443.88	9	\$1,073.62	54%	at stock turnover	\$0.31	552.35	554.65	ENERGY STAR
Restaurant	Refrigeration	Vending Machine	1 unit	New	81.00	10	\$42.74	54%	at stock turnover	\$0.06	283.53	283.53	EIA 2011-2012 Ref. Case
Restaurant	Food Preparation	Oven	1 unit	New	15,104.75	10	\$1,087.12	79%	at stock turnover	\$0.01	978.99	978.99	RTF Workbook
Restaurant	Food Preparation	Fryer	1 unit	New	2,881.11	10	\$782.02	92%	at stock turnover	\$0.03	3,518.81	3,518.81	RTF Workbook
Restaurant	Food Preparation	Dishwasher	1 unit	New	1,348.33	15	\$564.57	24%	at stock turnover	\$0.04	211.52	211.52	ENERGY STAR
Restaurant	Food Preparation	Hot Food Container	1 unit	New	802.23	20	\$490.95	24%	at stock turnover	\$0.04	936.40	936.40	RTF Workbook
Restaurant	Food Preparation	Steamer	1 unit	New	66,188.82	9	\$837.45	24%	at stock turnover	\$0.00	1,880.59	1,880.59	RTF Workbook
Restaurant	Office Equipment	Desktop Computer	1 unit	New	123.52	5	\$0.01	125%	at stock turnover	\$0.00	294.24	294.24	7th Power Plan
Restaurant	Office Equipment	Laptop	1 unit	New	36.86	4	\$0.01	125%	at stock turnover	\$0.00	31.26	31.26	7th Power Plan
Restaurant	Office Equipment	Monitor	1 unit	New	30.65	5	\$0.01	125%	at stock turnover	\$0.00	18.42	18.42	7th Power Plan
Restaurant	Office Equipment	Server	1 unit	New	74.10	4	\$0.01	125%	at stock turnover	\$0.00	218.22	218.22	AEG Research
Restaurant	Office Equipment	Printer/Copier/Fax	1 unit	New	223.00	6	\$0.01	125%	at stock turnover	\$0.00	17.21	17.21	ENERGY STAR
Restaurant	Office Equipment	POS Terminal	1 unit	New	123.52	5	\$0.01	44%	at stock turnover	\$0.00	176.83	176.83	7th Power Plan
Restaurant	Miscellaneous	Non-HVAC Motors	1 unit	New	0.00	15	\$0.00	107%	at stock turnover	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Restaurant	Miscellaneous	Pool Pump	1 unit	New	0.00	10	\$246.30	0%	at stock turnover	\$0.00	0.00	0.00	Southern California Edison
Restaurant	Miscellaneous	Pool Heater	1 unit	New	0.00	15	\$3,546.07	0%	at stock turnover	\$0.00	0.00	0.00	AEG Research
Restaurant	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Grocery	Cooling	Air-Cooled Chiller	1 kBTU/hr	Existing	60.29	20	\$26.36	17%	at stock turnover	\$0.03	28.78	28.78	Annual Energy Outlook, 2015
Grocery	Cooling	Water-Cooled Chiller	1 kBTU/hr	Existing	84.22	25	\$12.65	10%	at stock turnover	\$0.01	24.76	24.76	Annual Energy Outlook, 2015
Grocery	Cooling	RTU	1 kBTU/hr	Existing	9.49	15	\$6.75	55%	at stock turnover	\$0.06	746.22	746.22	Annual Energy Outlook, 2015
Grocery	Cooling	Room AC	1 kBTU/hr	Existing	35.67	15	\$23.62	3%	at stock turnover	\$0.06	83.79	83.79	Annual Energy Outlook, 2015
Grocery	Cooling	Evaporative AC	11 per TR	Existing	0.00	15	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	New Buildings Institute Study, 2006
Grocery	Cooling	Air-Source Heat Pump	1 kBTU/hr	Existing	17.35	15	\$21.65	4%	at stock turnover	\$0.09	71.54	71.54	Annual Energy Outlook, 2015
Grocery	Heating	Air-Source Heat Pump	1 kBTU/hr	Existing	2.08	15	\$21.65	4%	at stock turnover	\$0.09	8.56	8.56	Annual Energy Outlook, 2015
Grocery	Cooling	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	3%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Grocery	Heating	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	3%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Grocery	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Grocery	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	31%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Grocery	Ventilation	Ventilation	1000 CFM	Existing	8,926.50	20	\$1,219.71	100%	at stock turnover	\$0.01	1,321.37	1,321.37	AEG-BEST
Grocery	Water Heating	Water Heater	65 gallons	Existing	2,164.03	13	\$3,537.01	45%	at stock turnover	\$0.15	1,306.98	1,306.98	7th Power Plan
Grocery	Interior Lighting	Screw-in	lamps	Existing	114.94	8	\$3.95	100%	at stock turnover	\$0.00	428.05	621.63	7th Power Plan
Grocery	Interior Lighting	Linear Lighting	lamps	Existing	205.88	17	\$52.83	100%	at stock turnover	\$0.02	9,211.01	8,762.45	7th Power Plan
Grocery	Interior Lighting	High-Bay Fixtures	lamps	Existing	1,200.72	15	\$123.86	100%	at stock turnover	\$0.01	3,423.37	3,154.59	Annual Energy Outlook, 2015

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Grocery	Exterior Lighting	Screw-in	lamps	Existing	71.18	8	\$3.95	100%	at stock turnover	\$0.01	248.42	360.76	7th Power Plan
Grocery	Exterior Lighting	Linear Lighting	lamps	Existing	134.49	17	\$52.83	100%	at stock turnover	\$0.03	699.75	665.68	7th Power Plan
Grocery	Exterior Lighting	Area Lighting	lamps	Existing	1,116.49	15	\$44.55	100%	at stock turnover	\$0.00	3,238.91	3,066.40	Annual Energy Outlook, 2015
Grocery	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	Existing	1,507.00	11	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Grocery	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	Existing	605.00	15	\$0.00	14%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Grocery	Refrigeration	Glass Door Display	1 unit	Existing	767.00	15	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Grocery	Refrigeration	Open Display Case	1 unit	Existing	1,438.00	10	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Grocery	Refrigeration	Icemaker	1 unit	Existing	443.88	9	\$1,073.62	45%	at stock turnover	\$0.31	99.00	99.96	ENERGY STAR
Grocery	Refrigeration	Vending Machine	1 unit	Existing	81.00	10	\$42.74	45%	at stock turnover	\$0.06	39.37	39.37	EIA 2011-2012 Ref. Case
Grocery	Food Preparation	Oven	1 unit	Existing	15,104.75	10	\$1,087.12	66%	at stock turnover	\$0.01	19.51	19.51	RTF Workbook
Grocery	Food Preparation	Fryer	1 unit	Existing	2,881.11	10	\$782.02	76%	at stock turnover	\$0.03	217.75	217.75	RTF Workbook
Grocery	Food Preparation	Dishwasher	1 unit	Existing	1,348.33	15	\$564.57	20%	at stock turnover	\$0.04	18.95	18.95	ENERGY STAR
Grocery	Food Preparation	Hot Food Container	1 unit	Existing	802.23	20	\$490.95	20%	at stock turnover	\$0.04	81.04	81.04	RTF Workbook
Grocery	Food Preparation	Steamer	1 unit	Existing	66,188.82	9	\$837.45	20%	at stock turnover	\$0.00	264.89	264.89	RTF Workbook
Grocery	Office Equipment	Desktop Computer	1 unit	Existing	123.52	5	\$0.01	100%	at stock turnover	\$0.00	134.39	134.39	7th Power Plan
Grocery	Office Equipment	Laptop	1 unit	Existing	36.86	4	\$0.01	100%	at stock turnover	\$0.00	10.93	10.93	7th Power Plan
Grocery	Office Equipment	Monitor	1 unit	Existing	30.65	5	\$0.01	100%	at stock turnover	\$0.00	8.41	8.41	7th Power Plan
Grocery	Office Equipment	Server	1 unit	Existing	74.10	4	\$0.01	100%	at stock turnover	\$0.00	74.95	74.95	AEG Research
Grocery	Office Equipment	Printer/Copier/Fax	1 unit	Existing	223.00	6	\$0.01	100%	at stock turnover	\$0.00	3.07	3.07	ENERGY STAR

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Grocery	Office Equipment	POS Terminal	1 unit	Existing	123.52	5	\$0.01	40%	at stock turnover	\$0.00	76.54	76.54	7th Power Plan
Grocery	Miscellaneous	Non-HVAC Motors	1 unit	Existing	0.00	15	\$0.00	90%	at stock turnover	\$0.00	0.00	0.00	N/A
Grocery	Miscellaneous	Pool Pump	1 unit	Existing	0.00	10	\$246.30	0%	at stock turnover	\$0.00	0.00	0.00	Southern California Edison
Grocery	Miscellaneous	Pool Heater	1 unit	Existing	0.00	15	\$3,546.07	0%	at stock turnover	\$0.00	0.00	0.00	AEG Research
Grocery	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Grocery	Cooling	Air-Cooled Chiller	1 kBTU/hr	New	50.99	20	\$26.36	19%	at stock turnover	\$0.04	36.42	36.42	Annual Energy Outlook, 2015
Grocery	Cooling	Water-Cooled Chiller	1 kBTU/hr	New	71.67	25	\$12.65	12%	at stock turnover	\$0.01	27.22	27.22	Annual Energy Outlook, 2015
Grocery	Cooling	RTU	1 kBTU/hr	New	8.62	15	\$6.75	62%	at stock turnover	\$0.07	804.62	804.62	Annual Energy Outlook, 2015
Grocery	Cooling	Room AC	1 kBTU/hr	New	26.39	15	\$23.62	3%	at stock turnover	\$0.08	70.03	70.03	Annual Energy Outlook, 2015
Grocery	Cooling	Evaporative AC	11 per TR	New	0.00	15	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	New Buildings Institute Study, 2006
Grocery	Cooling	Air-Source Heat Pump	1 kBTU/hr	New	11.93	15	\$21.65	5%	at stock turnover	\$0.13	58.80	58.80	Annual Energy Outlook, 2015
Grocery	Heating	Air-Source Heat Pump	1 kBTU/hr	New	2.01	15	\$21.65	5%	at stock turnover	\$0.13	9.93	9.93	Annual Energy Outlook, 2015
Grocery	Cooling	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	3%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Grocery	Heating	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	3%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Grocery	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Grocery	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	31%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Grocery	Ventilation	Ventilation	1000 CFM	New	7,685.16	20	\$1,219.71	100%	at stock turnover	\$0.01	1,114.61	1,114.61	AEG-BEST
Grocery	Water Heating	Water Heater	65 gallons	New	2,164.03	13	\$3,537.01	45%	at stock turnover	\$0.15	1,349.57	1,349.57	7th Power Plan
Grocery	Interior Lighting	Screw-in	lamps	New	117.46	8	\$3.95	100%	at stock turnover	\$0.00	435.65	466.58	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Grocery	Interior Lighting	Linear Lighting	lamps	New	205.88	17	\$52.83	100%	at stock turnover	\$0.02	9,083.53	8,767.83	7th Power Plan
Grocery	Interior Lighting	High-Bay Fixtures	lamps	New	1,204.19	15	\$123.86	100%	at stock turnover	\$0.01	3,929.63	3,728.75	Annual Energy Outlook, 2015
Grocery	Exterior Lighting	Screw-in	lamps	New	72.75	8	\$3.95	100%	at stock turnover	\$0.01	252.83	270.78	7th Power Plan
Grocery	Exterior Lighting	Linear Lighting	lamps	New	134.49	17	\$52.83	100%	at stock turnover	\$0.03	690.07	666.09	7th Power Plan
Grocery	Exterior Lighting	Area Lighting	lamps	New	1,116.49	15	\$44.55	100%	at stock turnover	\$0.00	3,699.10	3,570.17	Annual Energy Outlook, 2015
Grocery	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	New	1,507.00	11	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Grocery	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	New	605.00	15	\$0.00	17%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Grocery	Refrigeration	Glass Door Display	1 unit	New	767.00	15	\$0.00	93%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Grocery	Refrigeration	Open Display Case	1 unit	New	1,438.00	10	\$0.00	93%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Grocery	Refrigeration	Icemaker	1 unit	New	443.88	9	\$1,073.62	54%	at stock turnover	\$0.31	103.18	103.62	ENERGY STAR
Grocery	Refrigeration	Vending Machine	1 unit	New	81.00	10	\$42.74	54%	at stock turnover	\$0.06	39.65	39.65	EIA 2011-2012 Ref. Case
Grocery	Food Preparation	Oven	1 unit	New	15,104.75	10	\$1,087.12	79%	at stock turnover	\$0.01	89.36	89.36	RTF Workbook
Grocery	Food Preparation	Fryer	1 unit	New	2,881.11	10	\$782.02	92%	at stock turnover	\$0.03	303.61	303.61	RTF Workbook
Grocery	Food Preparation	Dishwasher	1 unit	New	1,348.33	15	\$564.57	24%	at stock turnover	\$0.04	27.44	27.44	ENERGY STAR
Grocery	Food Preparation	Hot Food Container	1 unit	New	802.23	20	\$490.95	24%	at stock turnover	\$0.04	131.98	131.98	RTF Workbook
Grocery	Food Preparation	Steamer	1 unit	New	66,188.82	9	\$837.45	24%	at stock turnover	\$0.00	382.28	382.28	RTF Workbook
Grocery	Office Equipment	Desktop Computer	1 unit	New	123.52	5	\$0.01	125%	at stock turnover	\$0.00	104.45	104.45	7th Power Plan
Grocery	Office Equipment	Laptop	1 unit	New	36.86	4	\$0.01	125%	at stock turnover	\$0.00	9.31	9.31	7th Power Plan
Grocery	Office Equipment	Monitor	1 unit	New	30.65	5	\$0.01	125%	at stock turnover	\$0.00	6.54	6.54	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Grocery	Office Equipment	Server	1 unit	New	74.10	4	\$0.01	125%	at stock turnover	\$0.00	59.95	59.95	AEG Research
Grocery	Office Equipment	Printer/Copier/Fax	1 unit	New	223.00	6	\$0.01	125%	at stock turnover	\$0.00	3.05	3.05	ENERGY STAR
Grocery	Office Equipment	POS Terminal	1 unit	New	123.52	5	\$0.01	44%	at stock turnover	\$0.00	71.67	71.67	7th Power Plan
Grocery	Miscellaneous	Non-HVAC Motors	1 unit	New	0.00	15	\$0.00	107%	at stock turnover	\$0.00	0.00	0.00	N/A
Grocery	Miscellaneous	Pool Pump	1 unit	New	0.00	10	\$246.30	0%	at stock turnover	\$0.00	0.00	0.00	Southern California Edison
Grocery	Miscellaneous	Pool Heater	1 unit	New	0.00	15	\$3,546.07	0%	at stock turnover	\$0.00	0.00	0.00	AEG Research
Grocery	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Health	Cooling	Air-Cooled Chiller	1 kBTU/hr	Existing	58.37	20	\$26.36	17%	at stock turnover	\$0.03	2,314.38	2,314.38	Annual Energy Outlook, 2015
Health	Cooling	Water-Cooled Chiller	1 kBTU/hr	Existing	89.63	25	\$12.65	10%	at stock turnover	\$0.01	14,215.75	14,215.75	Annual Energy Outlook, 2015
Health	Cooling	RTU	1 kBTU/hr	Existing	8.32	15	\$6.75	55%	at stock turnover	\$0.07	257.92	257.92	Annual Energy Outlook, 2015
Health	Cooling	Room AC	1 kBTU/hr	Existing	31.29	15	\$23.62	3%	at stock turnover	\$0.06	34.04	34.04	Annual Energy Outlook, 2015
Health	Cooling	Evaporative AC	11 per TR	Existing	0.00	15	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	New Buildings Institute Study, 2006
Health	Cooling	Air-Source Heat Pump	1 kBTU/hr	Existing	16.01	15	\$21.65	4%	at stock turnover	\$0.09	19.11	19.11	Annual Energy Outlook, 2015
Health	Heating	Air-Source Heat Pump	1 kBTU/hr	Existing	4.35	15	\$21.65	4%	at stock turnover	\$0.09	5.19	5.19	Annual Energy Outlook, 2015
Health	Cooling	Geothermal Heat Pump	1 kBTU/hr	Existing	38.88	25	\$26.36	3%	at stock turnover	\$0.03	52.66	52.66	Annual Energy Outlook, 2015
Health	Heating	Geothermal Heat Pump	1 kBTU/hr	Existing	15.29	25	\$26.36	3%	at stock turnover	\$0.03	20.72	20.72	Annual Energy Outlook, 2015
Health	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Health	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	31%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Health	Ventilation	Ventilation	1000 CFM	Existing	6,109.88	20	\$1,219.71	100%	at stock turnover	\$0.01	2,512.13	2,512.13	AEG-BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Health	Water Heating	Water Heater	65 gallons	Existing	2,164.02	13	\$3,537.01	45%	at stock turnover	\$0.15	2,188.68	2,188.68	7th Power Plan
Health	Interior Lighting	Screw-in	lamps	Existing	107.70	8	\$3.95	100%	at stock turnover	\$0.01	1,911.02	2,889.28	7th Power Plan
Health	Interior Lighting	Linear Lighting	lamps	Existing	176.71	17	\$52.83	100%	at stock turnover	\$0.02	17,695.21	16,827.11	7th Power Plan
Health	Interior Lighting	High-Bay Fixtures	lamps	Existing	1,167.34	15	\$123.86	100%	at stock turnover	\$0.01	11,651.30	10,769.98	Annual Energy Outlook, 2015
Health	Exterior Lighting	Screw-in	lamps	Existing	76.17	8	\$3.95	100%	at stock turnover	\$0.01	118.60	179.31	7th Power Plan
Health	Exterior Lighting	Linear Lighting	lamps	Existing	133.72	17	\$52.83	100%	at stock turnover	\$0.03	356.56	339.07	7th Power Plan
Health	Exterior Lighting	Area Lighting	lamps	Existing	1,109.90	15	\$44.55	100%	at stock turnover	\$0.00	2,835.24	2,683.13	Annual Energy Outlook, 2015
Health	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	Existing	1,507.00	11	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Health	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	Existing	605.00	15	\$0.00	14%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Health	Refrigeration	Glass Door Display	1 unit	Existing	767.00	15	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Health	Refrigeration	Open Display Case	1 unit	Existing	1,438.00	10	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Health	Refrigeration	Icemaker	1 unit	Existing	443.88	9	\$1,073.62	45%	at stock turnover	\$0.31	32.84	33.17	ENERGY STAR
Health	Refrigeration	Vending Machine	1 unit	Existing	81.00	10	\$42.74	45%	at stock turnover	\$0.06	23.22	23.22	EIA 2011-2012 Ref. Case
Health	Food Preparation	Oven	1 unit	Existing	15,104.75	10	\$1,087.12	66%	at stock turnover	\$0.01	399.62	399.62	RTF Workbook
Health	Food Preparation	Fryer	1 unit	Existing	2,881.11	10	\$782.02	76%	at stock turnover	\$0.03	425.90	425.90	RTF Workbook
Health	Food Preparation	Dishwasher	1 unit	Existing	1,348.33	15	\$564.57	20%	at stock turnover	\$0.04	48.73	48.73	ENERGY STAR
Health	Food Preparation	Hot Food Container	1 unit	Existing	802.23	20	\$490.95	20%	at stock turnover	\$0.04	72.40	72.40	RTF Workbook
Health	Food Preparation	Steamer	1 unit	Existing	66,188.82	9	\$837.45	20%	at stock turnover	\$0.00	861.55	861.55	RTF Workbook
Health	Office Equipment	Desktop Computer	1 unit	Existing	123.52	5	\$0.01	100%	at stock turnover	\$0.00	947.12	947.12	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Health	Office Equipment	Laptop	1 unit	Existing	36.86	4	\$0.01	100%	at stock turnover	\$0.00	46.34	46.34	7th Power Plan
Health	Office Equipment	Monitor	1 unit	Existing	30.65	5	\$0.01	100%	at stock turnover	\$0.00	59.30	59.30	7th Power Plan
Health	Office Equipment	Server	1 unit	Existing	74.10	4	\$0.01	100%	at stock turnover	\$0.00	105.19	105.19	AEG Research
Health	Office Equipment	Printer/Copier/Fax	1 unit	Existing	223.00	6	\$0.01	100%	at stock turnover	\$0.00	21.54	21.54	ENERGY STAR
Health	Office Equipment	POS Terminal	1 unit	Existing	123.52	5	\$0.01	40%	at stock turnover	\$0.00	107.51	107.51	7th Power Plan
Health	Miscellaneous	Non-HVAC Motors	1 unit	Existing	0.00	15	\$0.00	90%	at stock turnover	\$0.00	0.00	0.00	N/A
Health	Miscellaneous	Pool Pump	1 unit	Existing	0.00	10	\$246.30	0%	at stock turnover	\$0.00	0.00	0.00	Southern California Edison
Health	Miscellaneous	Pool Heater	1 unit	Existing	0.00	15	\$3,546.07	0%	at stock turnover	\$0.00	0.00	0.00	AEG Research
Health	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Health	Cooling	Air-Cooled Chiller	1 kBTU/hr	New	42.63	20	\$26.36	19%	at stock turnover	\$0.04	2,465.61	2,465.61	Annual Energy Outlook, 2015
Health	Cooling	Water-Cooled Chiller	1 kBTU/hr	New	66.35	25	\$12.65	12%	at stock turnover	\$0.01	13,243.71	13,243.71	Annual Energy Outlook, 2015
Health	Cooling	RTU	1 kBTU/hr	New	6.37	15	\$6.75	62%	at stock turnover	\$0.09	228.60	228.60	Annual Energy Outlook, 2015
Health	Cooling	Room AC	1 kBTU/hr	New	23.15	15	\$23.62	3%	at stock turnover	\$0.09	29.16	29.16	Annual Energy Outlook, 2015
Health	Cooling	Evaporative AC	11 per TR	New	0.00	15	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	New Buildings Institute Study, 2006
Health	Cooling	Air-Source Heat Pump	1 kBTU/hr	New	11.75	15	\$21.65	5%	at stock turnover	\$0.11	17.17	17.17	Annual Energy Outlook, 2015
Health	Heating	Air-Source Heat Pump	1 kBTU/hr	New	4.22	15	\$21.65	5%	at stock turnover	\$0.11	6.17	6.17	Annual Energy Outlook, 2015
Health	Cooling	Geothermal Heat Pump	1 kBTU/hr	New	37.28	25	\$26.36	3%	at stock turnover	\$0.04	65.12	65.12	Annual Energy Outlook, 2015
Health	Heating	Geothermal Heat Pump	1 kBTU/hr	New	7.45	25	\$26.36	3%	at stock turnover	\$0.04	13.02	13.02	Annual Energy Outlook, 2015
Health	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Health	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	31%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Health	Ventilation	Ventilation	1000 CFM	New	5,260.23	20	\$1,219.71	100%	at stock turnover	\$0.02	3,899.30	3,899.30	AEG-BEST
Health	Water Heating	Water Heater	65 gallons	New	2,164.02	13	\$3,537.01	45%	at stock turnover	\$0.15	2,319.18	2,319.18	7th Power Plan
Health	Interior Lighting	Screw-in	lamps	New	107.22	8	\$3.95	100%	at stock turnover	\$0.01	1,982.27	2,124.01	7th Power Plan
Health	Interior Lighting	Linear Lighting	lamps	New	176.71	17	\$52.83	100%	at stock turnover	\$0.02	17,882.08	17,257.91	7th Power Plan
Health	Interior Lighting	High-Bay Fixtures	lamps	New	1,191.85	15	\$123.86	100%	at stock turnover	\$0.01	13,952.32	13,279.41	Annual Energy Outlook, 2015
Health	Exterior Lighting	Screw-in	lamps	New	75.82	8	\$3.95	100%	at stock turnover	\$0.01	123.02	131.82	7th Power Plan
Health	Exterior Lighting	Linear Lighting	lamps	New	133.72	17	\$52.83	100%	at stock turnover	\$0.03	360.33	347.75	7th Power Plan
Health	Exterior Lighting	Area Lighting	lamps	New	1,109.90	15	\$44.55	100%	at stock turnover	\$0.00	3,318.80	3,202.66	Annual Energy Outlook, 2015
Health	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	New	1,507.00	11	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Health	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	New	605.00	15	\$0.00	17%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Health	Refrigeration	Glass Door Display	1 unit	New	767.00	15	\$0.00	93%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Health	Refrigeration	Open Display Case	1 unit	New	1,438.00	10	\$0.00	93%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Health	Refrigeration	Icemaker	1 unit	New	443.88	9	\$1,073.62	54%	at stock turnover	\$0.31	50.85	51.07	ENERGY STAR
Health	Refrigeration	Vending Machine	1 unit	New	81.00	10	\$42.74	54%	at stock turnover	\$0.06	26.11	26.11	EIA 2011-2012 Ref. Case
Health	Food Preparation	Oven	1 unit	New	15,104.75	10	\$1,087.12	79%	at stock turnover	\$0.01	1,225.56	1,225.56	RTF Workbook
Health	Food Preparation	Fryer	1 unit	New	2,881.11	10	\$782.02	92%	at stock turnover	\$0.03	609.55	609.55	RTF Workbook
Health	Food Preparation	Dishwasher	1 unit	New	1,348.33	15	\$564.57	24%	at stock turnover	\$0.04	72.37	72.37	ENERGY STAR
Health	Food Preparation	Hot Food Container	1 unit	New	802.23	20	\$490.95	24%	at stock turnover	\$0.04	120.72	120.72	RTF Workbook

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Health	Food Preparation	Steamer	1 unit	New	66,188.82	9	\$837.45	24%	at stock turnover	\$0.00	1,277.41	1,277.41	RTF Workbook
Health	Office Equipment	Desktop Computer	1 unit	New	123.52	5	\$0.01	125%	at stock turnover	\$0.00	847.19	847.19	7th Power Plan
Health	Office Equipment	Laptop	1 unit	New	36.86	4	\$0.01	125%	at stock turnover	\$0.00	44.90	44.90	7th Power Plan
Health	Office Equipment	Monitor	1 unit	New	30.65	5	\$0.01	125%	at stock turnover	\$0.00	53.04	53.04	7th Power Plan
Health	Office Equipment	Server	1 unit	New	74.10	4	\$0.01	125%	at stock turnover	\$0.00	94.83	94.83	AEG Research
Health	Office Equipment	Printer/Copier/Fax	1 unit	New	223.00	6	\$0.01	125%	at stock turnover	\$0.00	24.40	24.40	ENERGY STAR
Health	Office Equipment	POS Terminal	1 unit	New	123.52	5	\$0.01	44%	at stock turnover	\$0.00	103.19	103.19	7th Power Plan
Health	Miscellaneous	Non-HVAC Motors	1 unit	New	0.00	15	\$0.00	107%	at stock turnover	\$0.00	0.00	0.00	N/A
Health	Miscellaneous	Pool Pump	1 unit	New	0.00	10	\$246.30	0%	at stock turnover	\$0.00	0.00	0.00	Southern California Edison
Health	Miscellaneous	Pool Heater	1 unit	New	0.00	15	\$3,546.07	0%	at stock turnover	\$0.00	0.00	0.00	AEG Research
Health	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
College	Cooling	Air-Cooled Chiller	1 kBTU/hr	Existing	38.50	20	\$26.36	17%	at stock turnover	\$0.05	5,343.20	5,343.20	Annual Energy Outlook, 2015
College	Cooling	Water-Cooled Chiller	1 kBTU/hr	Existing	0.00	25	\$12.65	10%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
College	Cooling	RTU	1 kBTU/hr	Existing	3.65	15	\$6.75	55%	at stock turnover	\$0.16	985.25	985.25	Annual Energy Outlook, 2015
College	Cooling	Room AC	1 kBTU/hr	Existing	13.71	15	\$23.62	3%	at stock turnover	\$0.15	240.60	240.60	Annual Energy Outlook, 2015
College	Cooling	Evaporative AC	11 per TR	Existing	0.00	15	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	New Buildings Institute Study, 2006
College	Cooling	Air-Source Heat Pump	1 kBTU/hr	Existing	7.02	15	\$21.65	4%	at stock turnover	\$0.18	159.62	159.62	Annual Energy Outlook, 2015
College	Heating	Air-Source Heat Pump	1 kBTU/hr	Existing	2.92	15	\$21.65	4%	at stock turnover	\$0.18	66.43	66.43	Annual Energy Outlook, 2015
College	Cooling	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	3%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
College	Heating	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	3%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
College	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
College	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	31%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
College	Ventilation	Ventilation	1000 CFM	Existing	1,297.11	20	\$1,219.71	100%	at stock turnover	\$0.07	3,873.69	3,873.69	AEG-BEST
College	Water Heating	Water Heater	65 gallons	Existing	2,163.97	13	\$3,537.01	45%	at stock turnover	\$0.15	6,782.43	6,782.43	7th Power Plan
College	Interior Lighting	Screw-in	lamps	Existing	60.42	8	\$3.95	100%	at stock turnover	\$0.01	546.08	808.87	7th Power Plan
College	Interior Lighting	Linear Lighting	lamps	Existing	98.82	17	\$52.83	100%	at stock turnover	\$0.04	16,119.05	15,318.60	7th Power Plan
College	Interior Lighting	High-Bay Fixtures	lamps	Existing	662.74	15	\$123.86	100%	at stock turnover	\$0.02	10,273.82	9,508.10	Annual Energy Outlook, 2015
College	Exterior Lighting	Screw-in	lamps	Existing	73.59	8	\$3.95	100%	at stock turnover	\$0.01	66.87	99.05	7th Power Plan
College	Exterior Lighting	Linear Lighting	lamps	Existing	125.52	17	\$52.83	100%	at stock turnover	\$0.03	5,520.31	5,246.18	7th Power Plan
College	Exterior Lighting	Area Lighting	lamps	Existing	841.74	15	\$44.55	100%	at stock turnover	\$0.00	2,006.63	1,897.69	Annual Energy Outlook, 2015
College	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	Existing	1,507.00	11	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
College	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	Existing	605.00	15	\$0.00	14%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
College	Refrigeration	Glass Door Display	1 unit	Existing	767.00	15	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
College	Refrigeration	Open Display Case	1 unit	Existing	1,438.00	10	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
College	Refrigeration	Icemaker	1 unit	Existing	443.88	9	\$1,073.62	45%	at stock turnover	\$0.31	7.78	7.86	ENERGY STAR
College	Refrigeration	Vending Machine	1 unit	Existing	81.00	10	\$42.74	45%	at stock turnover	\$0.06	7.97	7.97	EIA 2011-2012 Ref. Case
College	Food Preparation	Oven	1 unit	Existing	15,104.75	10	\$1,087.12	66%	at stock turnover	\$0.01	125.54	125.54	RTF Workbook
College	Food Preparation	Fryer	1 unit	Existing	2,881.11	10	\$782.02	76%	at stock turnover	\$0.03	53.93	53.93	RTF Workbook

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
College	Food Preparation	Dishwasher	1 unit	Existing	1,348.33	15	\$564.57	20%	at stock turnover	\$0.04	16.14	16.14	ENERGY STAR
College	Food Preparation	Hot Food Container	1 unit	Existing	802.23	20	\$490.95	20%	at stock turnover	\$0.04	24.02	24.02	RTF Workbook
College	Food Preparation	Steamer	1 unit	Existing	66,188.82	9	\$837.45	20%	at stock turnover	\$0.00	284.64	284.64	RTF Workbook
College	Office Equipment	Desktop Computer	1 unit	Existing	123.52	5	\$0.01	100%	at stock turnover	\$0.00	1,394.87	1,394.87	7th Power Plan
College	Office Equipment	Laptop	1 unit	Existing	36.86	4	\$0.01	100%	at stock turnover	\$0.00	50.96	50.96	7th Power Plan
College	Office Equipment	Monitor	1 unit	Existing	30.65	5	\$0.01	100%	at stock turnover	\$0.00	87.33	87.33	7th Power Plan
College	Office Equipment	Server	1 unit	Existing	74.10	4	\$0.01	100%	at stock turnover	\$0.00	153.83	153.83	AEG Research
College	Office Equipment	Printer/Copier/Fax	1 unit	Existing	223.00	6	\$0.01	100%	at stock turnover	\$0.00	39.31	39.31	ENERGY STAR
College	Office Equipment	POS Terminal	1 unit	Existing	123.52	5	\$0.01	40%	at stock turnover	\$0.00	78.71	78.71	7th Power Plan
College	Miscellaneous	Non-HVAC Motors	1 unit	Existing	0.00	15	\$0.00	90%	at stock turnover	\$0.00	0.00	0.00	N/A
College	Miscellaneous	Pool Pump	1 unit	Existing	1,432.30	10	\$246.30	0%	at stock turnover	\$0.02	194.56	194.56	Southern California Edison
College	Miscellaneous	Pool Heater	1 unit	Existing	15,277.63	15	\$3,546.07	0%	at stock turnover	\$0.02	135.88	135.88	AEG Research
College	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
College	Cooling	Air-Cooled Chiller	1 kBtu/hr	New	33.24	20	\$26.36	19%	at stock turnover	\$0.06	7,918.36	7,918.36	Annual Energy Outlook, 2015
College	Cooling	Water-Cooled Chiller	1 kBtu/hr	New	0.00	25	\$12.65	12%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
College	Cooling	RTU	1 kBtu/hr	New	2.67	15	\$6.75	62%	at stock turnover	\$0.21	986.80	986.80	Annual Energy Outlook, 2015
College	Cooling	Room AC	1 kBtu/hr	New	10.55	15	\$23.62	3%	at stock turnover	\$0.19	223.09	223.09	Annual Energy Outlook, 2015
College	Cooling	Evaporative AC	11 per TR	New	0.00	15	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	New Buildings Institute Study, 2006
College	Cooling	Air-Source Heat Pump	1 kBtu/hr	New	5.15	15	\$21.65	5%	at stock turnover	\$0.23	169.30	169.30	Annual Energy Outlook, 2015

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
College	Heating	Air-Source Heat Pump	1 kBTU/hr	New	2.83	15	\$21.65	5%	at stock turnover	\$0.23	93.21	93.21	Annual Energy Outlook, 2015
College	Cooling	Geothermal Heat Pump	1 kBTU/hr	New	15.63	25	\$26.36	3%	at stock turnover	\$0.07	44.06	44.06	Annual Energy Outlook, 2015
College	Heating	Geothermal Heat Pump	1 kBTU/hr	New	10.64	25	\$26.36	3%	at stock turnover	\$0.07	29.99	29.99	Annual Energy Outlook, 2015
College	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
College	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	31%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
College	Ventilation	Ventilation	1000 CFM	New	1,313.18	20	\$1,219.71	100%	at stock turnover	\$0.07	6,017.97	6,017.97	AEG-BEST
College	Water Heating	Water Heater	65 gallons	New	2,163.97	13	\$3,537.01	45%	at stock turnover	\$0.15	7,493.08	7,493.08	7th Power Plan
College	Interior Lighting	Screw-in	lamps	New	59.93	8	\$3.95	100%	at stock turnover	\$0.01	588.65	625.40	7th Power Plan
College	Interior Lighting	Linear Lighting	lamps	New	98.82	17	\$52.83	100%	at stock turnover	\$0.04	16,943.79	16,348.14	7th Power Plan
College	Interior Lighting	High-Bay Fixtures	lamps	New	668.73	15	\$123.86	100%	at stock turnover	\$0.02	12,670.68	12,065.55	Annual Energy Outlook, 2015
College	Exterior Lighting	Screw-in	lamps	New	73.00	8	\$3.95	100%	at stock turnover	\$0.01	72.08	76.58	7th Power Plan
College	Exterior Lighting	Linear Lighting	lamps	New	125.52	17	\$52.83	100%	at stock turnover	\$0.03	5,802.76	5,598.77	7th Power Plan
College	Exterior Lighting	Area Lighting	lamps	New	841.74	15	\$44.55	100%	at stock turnover	\$0.00	2,443.99	2,357.90	Annual Energy Outlook, 2015
College	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	New	1,507.00	11	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
College	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	New	605.00	15	\$0.00	17%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
College	Refrigeration	Glass Door Display	1 unit	New	767.00	15	\$0.00	93%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
College	Refrigeration	Open Display Case	1 unit	New	1,438.00	10	\$0.00	93%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
College	Refrigeration	Icemaker	1 unit	New	0.00	9	\$1,073.62	54%	at stock turnover	\$0.00	0.00	0.00	ENERGY STAR
College	Refrigeration	Vending Machine	1 unit	New	81.00	10	\$42.74	54%	at stock turnover	\$0.06	11.89	11.89	EIA 2011-2012 Ref. Case

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
College	Food Preparation	Oven	1 unit	New	15,104.75	10	\$1,087.12	79%	at stock turnover	\$0.01	187.42	187.42	RTF Workbook
College	Food Preparation	Fryer	1 unit	New	2,881.11	10	\$782.02	92%	at stock turnover	\$0.03	80.51	80.51	RTF Workbook
College	Food Preparation	Dishwasher	1 unit	New	1,348.33	15	\$564.57	24%	at stock turnover	\$0.04	24.97	24.97	ENERGY STAR
College	Food Preparation	Hot Food Container	1 unit	New	802.23	20	\$490.95	24%	at stock turnover	\$0.04	41.60	41.60	RTF Workbook
College	Food Preparation	Steamer	1 unit	New	66,188.82	9	\$837.45	24%	at stock turnover	\$0.00	440.87	440.87	RTF Workbook
College	Office Equipment	Desktop Computer	1 unit	New	123.52	5	\$0.01	125%	at stock turnover	\$0.00	1,293.42	1,293.42	7th Power Plan
College	Office Equipment	Laptop	1 unit	New	36.86	4	\$0.01	125%	at stock turnover	\$0.00	51.40	51.40	7th Power Plan
College	Office Equipment	Monitor	1 unit	New	30.65	5	\$0.01	125%	at stock turnover	\$0.00	80.98	80.98	7th Power Plan
College	Office Equipment	Server	1 unit	New	74.10	4	\$0.01	125%	at stock turnover	\$0.00	144.66	144.66	AEG Research
College	Office Equipment	Printer/Copier/Fax	1 unit	New	223.00	6	\$0.01	125%	at stock turnover	\$0.00	46.50	46.50	ENERGY STAR
College	Office Equipment	POS Terminal	1 unit	New	123.52	5	\$0.01	44%	at stock turnover	\$0.00	78.62	78.62	7th Power Plan
College	Miscellaneous	Non-HVAC Motors	1 unit	New	0.00	15	\$0.00	107%	at stock turnover	\$0.00	0.00	0.00	N/A
College	Miscellaneous	Pool Pump	1 unit	New	1,432.30	10	\$246.30	0%	at stock turnover	\$0.02	292.24	292.24	Southern California Edison
College	Miscellaneous	Pool Heater	1 unit	New	15,277.63	15	\$3,546.07	0%	at stock turnover	\$0.02	207.52	207.52	AEG Research
College	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
School	Cooling	Air-Cooled Chiller	1 kBTU/hr	Existing	22.99	20	\$26.36	17%	at stock turnover	\$0.08	4,175.79	4,175.79	Annual Energy Outlook, 2015
School	Cooling	Water-Cooled Chiller	1 kBTU/hr	Existing	0.00	25	\$12.65	10%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
School	Cooling	RTU	1 kBTU/hr	Existing	2.18	15	\$6.75	55%	at stock turnover	\$0.26	772.69	772.69	Annual Energy Outlook, 2015
School	Cooling	Room AC	1 kBTU/hr	Existing	8.19	15	\$23.62	3%	at stock turnover	\$0.24	188.69	188.69	Annual Energy Outlook, 2015

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
School	Cooling	Evaporative AC	11 per TR	Existing	0.00	15	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	New Buildings Institute Study, 2006
School	Cooling	Air-Source Heat Pump	1 kBTU/hr	Existing	4.19	15	\$21.65	4%	at stock turnover	\$0.29	154.29	154.29	Annual Energy Outlook, 2015
School	Heating	Air-Source Heat Pump	1 kBTU/hr	Existing	2.14	15	\$21.65	4%	at stock turnover	\$0.29	78.84	78.84	Annual Energy Outlook, 2015
School	Cooling	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	3%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
School	Heating	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	3%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
School	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
School	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	31%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
School	Ventilation	Ventilation	1000 CFM	Existing	867.41	20	\$1,219.71	100%	at stock turnover	\$0.10	3,338.43	3,338.43	AEG-BEST
School	Water Heating	Water Heater	65 gallons	Existing	2,163.97	13	\$3,537.01	45%	at stock turnover	\$0.15	4,652.78	4,652.78	7th Power Plan
School	Interior Lighting	Screw-in	lamps	Existing	43.73	8	\$3.95	100%	at stock turnover	\$0.01	912.85	1,342.66	7th Power Plan
School	Interior Lighting	Linear Lighting	lamps	Existing	75.76	17	\$52.83	100%	at stock turnover	\$0.05	16,712.20	15,898.34	7th Power Plan
School	Interior Lighting	High-Bay Fixtures	lamps	Existing	496.53	15	\$123.86	100%	at stock turnover	\$0.02	9,048.47	8,386.90	Annual Energy Outlook, 2015
School	Exterior Lighting	Screw-in	lamps	Existing	75.16	8	\$3.95	100%	at stock turnover	\$0.01	31.60	46.48	7th Power Plan
School	Exterior Lighting	Linear Lighting	lamps	Existing	128.48	17	\$52.83	100%	at stock turnover	\$0.03	7,257.57	6,904.14	7th Power Plan
School	Exterior Lighting	Area Lighting	lamps	Existing	771.02	15	\$44.55	100%	at stock turnover	\$0.00	1,210.04	1,145.59	Annual Energy Outlook, 2015
School	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	Existing	1,507.00	11	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
School	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	Existing	605.00	15	\$0.00	14%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
School	Refrigeration	Glass Door Display	1 unit	Existing	767.00	15	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
School	Refrigeration	Open Display Case	1 unit	Existing	1,438.00	10	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
School	Refrigeration	Icemaker	1 unit	Existing	443.88	9	\$1,073.62	45%	at stock turnover	\$0.31	35.89	36.25	ENERGY STAR
School	Refrigeration	Vending Machine	1 unit	Existing	81.00	10	\$42.74	45%	at stock turnover	\$0.06	36.67	36.67	EIA 2011-2012 Ref. Case
School	Food Preparation	Oven	1 unit	Existing	15,104.75	10	\$1,087.12	66%	at stock turnover	\$0.01	499.83	499.83	RTF Workbook
School	Food Preparation	Fryer	1 unit	Existing	2,881.11	10	\$782.02	76%	at stock turnover	\$0.03	194.17	194.17	RTF Workbook
School	Food Preparation	Dishwasher	1 unit	Existing	1,348.33	15	\$564.57	20%	at stock turnover	\$0.04	24.22	24.22	ENERGY STAR
School	Food Preparation	Hot Food Container	1 unit	Existing	802.23	20	\$490.95	20%	at stock turnover	\$0.04	35.95	35.95	RTF Workbook
School	Food Preparation	Steamer	1 unit	Existing	66,188.82	9	\$837.45	20%	at stock turnover	\$0.00	428.86	428.86	RTF Workbook
School	Office Equipment	Desktop Computer	1 unit	Existing	123.52	5	\$0.01	100%	at stock turnover	\$0.00	1,485.86	1,485.86	7th Power Plan
School	Office Equipment	Laptop	1 unit	Existing	36.86	4	\$0.01	100%	at stock turnover	\$0.00	72.90	72.90	7th Power Plan
School	Office Equipment	Monitor	1 unit	Existing	30.65	5	\$0.01	100%	at stock turnover	\$0.00	93.03	93.03	7th Power Plan
School	Office Equipment	Server	1 unit	Existing	74.10	4	\$0.01	100%	at stock turnover	\$0.00	331.46	331.46	AEG Research
School	Office Equipment	Printer/Copier/Fax	1 unit	Existing	223.00	6	\$0.01	100%	at stock turnover	\$0.00	33.97	33.97	ENERGY STAR
School	Office Equipment	POS Terminal	1 unit	Existing	123.52	5	\$0.01	40%	at stock turnover	\$0.00	25.01	25.01	7th Power Plan
School	Miscellaneous	Non-HVAC Motors	1 unit	Existing	0.00	15	\$0.00	90%	at stock turnover	\$0.00	0.00	0.00	N/A
School	Miscellaneous	Pool Pump	1 unit	Existing	1,432.30	10	\$246.30	0%	at stock turnover	\$0.02	21.06	21.06	Southern California Edison
School	Miscellaneous	Pool Heater	1 unit	Existing	15,277.63	15	\$3,546.07	0%	at stock turnover	\$0.02	3.05	3.05	AEG Research
School	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
School	Cooling	Air-Cooled Chiller	1 kBTU/hr	New	19.85	20	\$26.36	19%	at stock turnover	\$0.10	5,394.05	5,394.05	Annual Energy Outlook, 2015
School	Cooling	Water-Cooled Chiller	1 kBTU/hr	New	0.00	25	\$12.65	12%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
School	Cooling	RTU	1 kBTU/hr	New	1.60	15	\$6.75	62%	at stock turnover	\$0.36	704.53	704.53	Annual Energy Outlook, 2015
School	Cooling	Room AC	1 kBTU/hr	New	6.30	15	\$23.62	3%	at stock turnover	\$0.32	164.10	164.10	Annual Energy Outlook, 2015
School	Cooling	Evaporative AC	11 per TR	New	0.00	15	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	New Buildings Institute Study, 2006
School	Cooling	Air-Source Heat Pump	1 kBTU/hr	New	3.07	15	\$21.65	5%	at stock turnover	\$0.35	162.31	162.31	Annual Energy Outlook, 2015
School	Heating	Air-Source Heat Pump	1 kBTU/hr	New	2.08	15	\$21.65	5%	at stock turnover	\$0.35	109.71	109.71	Annual Energy Outlook, 2015
School	Cooling	Geothermal Heat Pump	1 kBTU/hr	New	9.33	25	\$26.36	3%	at stock turnover	\$0.10	266.84	266.84	Annual Energy Outlook, 2015
School	Heating	Geothermal Heat Pump	1 kBTU/hr	New	7.80	25	\$26.36	3%	at stock turnover	\$0.10	223.02	223.02	Annual Energy Outlook, 2015
School	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
School	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	31%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
School	Ventilation	Ventilation	1000 CFM	New	878.15	20	\$1,219.71	100%	at stock turnover	\$0.10	4,872.19	4,872.19	AEG-BEST
School	Water Heating	Water Heater	65 gallons	New	2,163.97	13	\$3,537.01	45%	at stock turnover	\$0.15	4,804.39	4,804.39	7th Power Plan
School	Interior Lighting	Screw-in	lamps	New	43.38	8	\$3.95	100%	at stock turnover	\$0.01	924.18	980.72	7th Power Plan
School	Interior Lighting	Linear Lighting	lamps	New	75.76	17	\$52.83	100%	at stock turnover	\$0.05	16,480.89	15,908.10	7th Power Plan
School	Interior Lighting	High-Bay Fixtures	lamps	New	501.02	15	\$123.86	100%	at stock turnover	\$0.02	10,463.22	9,968.79	Annual Energy Outlook, 2015
School	Exterior Lighting	Screw-in	lamps	New	74.55	8	\$3.95	100%	at stock turnover	\$0.01	31.99	33.95	7th Power Plan
School	Exterior Lighting	Linear Lighting	lamps	New	128.48	17	\$52.83	100%	at stock turnover	\$0.03	7,157.12	6,908.38	7th Power Plan
School	Exterior Lighting	Area Lighting	lamps	New	771.02	15	\$44.55	100%	at stock turnover	\$0.00	1,381.97	1,333.80	Annual Energy Outlook, 2015
School	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	New	1,507.00	11	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
School	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	New	605.00	15	\$0.00	17%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
School	Refrigeration	Glass Door Display	1 unit	New	767.00	15	\$0.00	93%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
School	Refrigeration	Open Display Case	1 unit	New	1,438.00	10	\$0.00	93%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
School	Refrigeration	Icemaker	1 unit	New	0.00	9	\$1,073.62	54%	at stock turnover	\$0.00	0.00	0.00	ENERGY STAR
School	Refrigeration	Vending Machine	1 unit	New	81.00	10	\$42.74	54%	at stock turnover	\$0.06	51.13	51.13	EIA 2011-2012 Ref. Case
School	Food Preparation	Oven	1 unit	New	15,104.75	10	\$1,087.12	79%	at stock turnover	\$0.01	696.92	696.92	RTF Workbook
School	Food Preparation	Fryer	1 unit	New	2,881.11	10	\$782.02	92%	at stock turnover	\$0.03	270.73	270.73	RTF Workbook
School	Food Preparation	Dishwasher	1 unit	New	1,348.33	15	\$564.57	24%	at stock turnover	\$0.04	35.07	35.07	ENERGY STAR
School	Food Preparation	Hot Food Container	1 unit	New	802.23	20	\$490.95	24%	at stock turnover	\$0.04	58.54	58.54	RTF Workbook
School	Food Preparation	Steamer	1 unit	New	66,188.82	9	\$837.45	24%	at stock turnover	\$0.00	618.91	618.91	RTF Workbook
School	Office Equipment	Desktop Computer	1 unit	New	123.52	5	\$0.01	125%	at stock turnover	\$0.00	1,299.69	1,299.69	7th Power Plan
School	Office Equipment	Laptop	1 unit	New	36.86	4	\$0.01	125%	at stock turnover	\$0.00	68.89	68.89	7th Power Plan
School	Office Equipment	Monitor	1 unit	New	30.65	5	\$0.01	125%	at stock turnover	\$0.00	81.37	81.37	7th Power Plan
School	Office Equipment	Server	1 unit	New	74.10	4	\$0.01	125%	at stock turnover	\$0.00	291.12	291.12	AEG Research
School	Office Equipment	Printer/Copier/Fax	1 unit	New	223.00	6	\$0.01	125%	at stock turnover	\$0.00	37.47	37.47	ENERGY STAR
School	Office Equipment	POS Terminal	1 unit	New	123.52	5	\$0.01	44%	at stock turnover	\$0.00	20.75	20.75	7th Power Plan
School	Miscellaneous	Non-HVAC Motors	1 unit	New	0.00	15	\$0.00	107%	at stock turnover	\$0.00	0.00	0.00	N/A
School	Miscellaneous	Pool Pump	1 unit	New	1,432.30	10	\$246.30	0%	at stock turnover	\$0.02	29.48	29.48	Southern California Edison
School	Miscellaneous	Pool Heater	1 unit	New	15,277.63	15	\$3,546.07	0%	at stock turnover	\$0.02	4.36	4.36	AEG Research
School	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Lodging	Cooling	Air-Cooled Chiller	1 kBTU/hr	Existing	12.16	20	\$26.36	17%	at stock turnover	\$0.16	79.62	79.62	Annual Energy Outlook, 2015
Lodging	Cooling	Water-Cooled Chiller	1 kBTU/hr	Existing	19.06	25	\$12.65	10%	at stock turnover	\$0.04	452.76	452.76	Annual Energy Outlook, 2015
Lodging	Cooling	RTU	1 kBTU/hr	Existing	4.95	15	\$6.75	55%	at stock turnover	\$0.11	304.54	304.54	Annual Energy Outlook, 2015
Lodging	Cooling	Room AC	1 kBTU/hr	Existing	18.23	15	\$23.62	3%	at stock turnover	\$0.11	2,757.28	2,757.28	Annual Energy Outlook, 2015
Lodging	Cooling	Evaporative AC	11 per TR	Existing	0.00	15	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	New Buildings Institute Study, 2006
Lodging	Cooling	Air-Source Heat Pump	1 kBTU/hr	Existing	9.63	15	\$21.65	4%	at stock turnover	\$0.16	135.24	135.24	Annual Energy Outlook, 2015
Lodging	Heating	Air-Source Heat Pump	1 kBTU/hr	Existing	1.88	15	\$21.65	4%	at stock turnover	\$0.16	26.44	26.44	Annual Energy Outlook, 2015
Lodging	Cooling	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	3%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Lodging	Heating	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	3%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Lodging	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Lodging	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	31%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Lodging	Ventilation	Ventilation	1000 CFM	Existing	1,493.46	20	\$1,219.71	100%	at stock turnover	\$0.06	1,288.57	1,288.57	AEG-BEST
Lodging	Water Heating	Water Heater	65 gallons	Existing	2,164.00	13	\$3,537.01	45%	at stock turnover	\$0.15	8,621.48	8,621.48	7th Power Plan
Lodging	Interior Lighting	Screw-in	lamps	Existing	51.63	8	\$3.95	100%	at stock turnover	\$0.01	4,306.00	6,286.29	7th Power Plan
Lodging	Interior Lighting	Linear Lighting	lamps	Existing	82.75	17	\$52.83	100%	at stock turnover	\$0.05	2,813.89	2,680.92	7th Power Plan
Lodging	Interior Lighting	High-Bay Fixtures	lamps	Existing	671.50	15	\$123.86	100%	at stock turnover	\$0.02	10,784.66	10,020.73	Annual Energy Outlook, 2015
Lodging	Exterior Lighting	Screw-in	lamps	Existing	74.50	8	\$3.95	100%	at stock turnover	\$0.01	169.59	247.58	7th Power Plan
Lodging	Exterior Lighting	Linear Lighting	lamps	Existing	131.00	17	\$52.83	100%	at stock turnover	\$0.03	157.91	150.45	7th Power Plan
Lodging	Exterior Lighting	Area Lighting	lamps	Existing	1,164.18	15	\$44.55	100%	at stock turnover	\$0.00	11,216.05	10,635.94	Annual Energy Outlook, 2015

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Lodging	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	Existing	1,507.00	11	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Lodging	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	Existing	605.00	15	\$0.00	14%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Lodging	Refrigeration	Glass Door Display	1 unit	Existing	767.00	15	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Lodging	Refrigeration	Open Display Case	1 unit	Existing	1,438.00	10	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Lodging	Refrigeration	Icemaker	1 unit	Existing	443.88	9	\$1,073.62	45%	at stock turnover	\$0.31	39.95	40.32	ENERGY STAR
Lodging	Refrigeration	Vending Machine	1 unit	Existing	81.00	10	\$42.74	45%	at stock turnover	\$0.06	46.12	46.12	EIA 2011-2012 Ref. Case
Lodging	Food Preparation	Oven	1 unit	Existing	15,104.75	10	\$1,087.12	66%	at stock turnover	\$0.01	81.68	81.68	RTF Workbook
Lodging	Food Preparation	Fryer	1 unit	Existing	2,881.11	10	\$782.02	76%	at stock turnover	\$0.03	110.82	110.82	RTF Workbook
Lodging	Food Preparation	Dishwasher	1 unit	Existing	1,348.33	15	\$564.57	20%	at stock turnover	\$0.04	23.99	23.99	ENERGY STAR
Lodging	Food Preparation	Hot Food Container	1 unit	Existing	802.23	20	\$490.95	20%	at stock turnover	\$0.04	35.50	35.50	RTF Workbook
Lodging	Food Preparation	Steamer	1 unit	Existing	66,188.82	9	\$837.45	20%	at stock turnover	\$0.00	427.76	427.76	RTF Workbook
Lodging	Office Equipment	Desktop Computer	1 unit	Existing	123.52	5	\$0.01	100%	at stock turnover	\$0.00	261.56	261.56	7th Power Plan
Lodging	Office Equipment	Laptop	1 unit	Existing	36.86	4	\$0.01	100%	at stock turnover	\$0.00	32.39	32.39	7th Power Plan
Lodging	Office Equipment	Monitor	1 unit	Existing	30.65	5	\$0.01	100%	at stock turnover	\$0.00	16.38	16.38	7th Power Plan
Lodging	Office Equipment	Server	1 unit	Existing	74.10	4	\$0.01	100%	at stock turnover	\$0.00	148.24	148.24	AEG Research
Lodging	Office Equipment	Printer/Copier/Fax	1 unit	Existing	223.00	6	\$0.01	100%	at stock turnover	\$0.00	6.12	6.12	ENERGY STAR
Lodging	Office Equipment	POS Terminal	1 unit	Existing	123.52	5	\$0.01	40%	at stock turnover	\$0.00	35.39	35.39	7th Power Plan
Lodging	Miscellaneous	Non-HVAC Motors	1 unit	Existing	0.00	15	\$0.00	90%	at stock turnover	\$0.00	0.00	0.00	N/A
Lodging	Miscellaneous	Pool Pump	1 unit	Existing	1,432.30	10	\$246.30	0%	at stock turnover	\$0.02	75.63	75.63	Southern California Edison

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Lodging	Miscellaneous	Pool Heater	1 unit	Existing	15,277.63	15	\$3,546.07	0%	at stock turnover	\$0.02	46.40	46.40	AEG Research
Lodging	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Lodging	Cooling	Air-Cooled Chiller	1 kBTU/hr	New	11.00	20	\$26.36	19%	at stock turnover	\$0.17	111.20	111.20	Annual Energy Outlook, 2015
Lodging	Cooling	Water-Cooled Chiller	1 kBTU/hr	New	17.35	25	\$12.65	12%	at stock turnover	\$0.05	550.33	550.33	Annual Energy Outlook, 2015
Lodging	Cooling	RTU	1 kBTU/hr	New	4.97	15	\$6.75	62%	at stock turnover	\$0.11	372.63	372.63	Annual Energy Outlook, 2015
Lodging	Cooling	Room AC	1 kBTU/hr	New	13.48	15	\$23.62	3%	at stock turnover	\$0.15	2,484.43	2,484.43	Annual Energy Outlook, 2015
Lodging	Cooling	Evaporative AC	11 per TR	New	0.00	15	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	New Buildings Institute Study, 2006
Lodging	Cooling	Air-Source Heat Pump	1 kBTU/hr	New	9.68	15	\$21.65	5%	at stock turnover	\$0.16	169.28	169.28	Annual Energy Outlook, 2015
Lodging	Heating	Air-Source Heat Pump	1 kBTU/hr	New	1.68	15	\$21.65	5%	at stock turnover	\$0.16	29.31	29.31	Annual Energy Outlook, 2015
Lodging	Cooling	Geothermal Heat Pump	1 kBTU/hr	New	35.56	25	\$26.36	3%	at stock turnover	\$0.04	284.11	284.11	Annual Energy Outlook, 2015
Lodging	Heating	Geothermal Heat Pump	1 kBTU/hr	New	5.31	25	\$26.36	3%	at stock turnover	\$0.04	42.47	42.47	Annual Energy Outlook, 2015
Lodging	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Lodging	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	31%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Lodging	Ventilation	Ventilation	1000 CFM	New	1,255.07	20	\$1,219.71	100%	at stock turnover	\$0.07	1,427.15	1,427.15	AEG-BEST
Lodging	Water Heating	Water Heater	65 gallons	New	2,164.00	13	\$3,537.01	45%	at stock turnover	\$0.15	7,973.46	7,973.46	7th Power Plan
Lodging	Interior Lighting	Screw-in	lamps	New	51.68	8	\$3.95	100%	at stock turnover	\$0.01	3,936.74	4,190.64	7th Power Plan
Lodging	Interior Lighting	Linear Lighting	lamps	New	82.75	17	\$52.83	100%	at stock turnover	\$0.05	2,499.50	2,414.13	7th Power Plan
Lodging	Interior Lighting	High-Bay Fixtures	lamps	New	695.53	15	\$123.86	100%	at stock turnover	\$0.01	11,520.53	10,999.80	Annual Energy Outlook, 2015
Lodging	Exterior Lighting	Screw-in	lamps	New	74.56	8	\$3.95	100%	at stock turnover	\$0.01	155.04	165.04	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Lodging	Exterior Lighting	Linear Lighting	lamps	New	131.00	17	\$52.83	100%	at stock turnover	\$0.03	140.27	135.47	7th Power Plan
Lodging	Exterior Lighting	Area Lighting	lamps	New	1,164.18	15	\$44.55	100%	at stock turnover	\$0.00	11,529.77	11,134.34	Annual Energy Outlook, 2015
Lodging	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	New	1,507.00	11	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Lodging	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	New	605.00	15	\$0.00	17%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Lodging	Refrigeration	Glass Door Display	1 unit	New	767.00	15	\$0.00	93%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Lodging	Refrigeration	Open Display Case	1 unit	New	1,438.00	10	\$0.00	93%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Lodging	Refrigeration	Icemaker	1 unit	New	443.88	9	\$1,073.62	54%	at stock turnover	\$0.31	52.03	52.25	ENERGY STAR
Lodging	Refrigeration	Vending Machine	1 unit	New	81.00	10	\$42.74	54%	at stock turnover	\$0.06	53.41	53.41	EIA 2011-2012 Ref. Case
Lodging	Food Preparation	Oven	1 unit	New	15,104.75	10	\$1,087.12	79%	at stock turnover	\$0.01	91.61	91.61	RTF Workbook
Lodging	Food Preparation	Fryer	1 unit	New	2,881.11	10	\$782.02	92%	at stock turnover	\$0.03	128.33	128.33	RTF Workbook
Lodging	Food Preparation	Dishwasher	1 unit	New	1,348.33	15	\$564.57	24%	at stock turnover	\$0.04	28.98	28.98	ENERGY STAR
Lodging	Food Preparation	Hot Food Container	1 unit	New	802.23	20	\$490.95	24%	at stock turnover	\$0.04	48.51	48.51	RTF Workbook
Lodging	Food Preparation	Steamer	1 unit	New	66,188.82	9	\$837.45	24%	at stock turnover	\$0.00	510.99	510.99	RTF Workbook
Lodging	Office Equipment	Desktop Computer	1 unit	New	123.52	5	\$0.01	125%	at stock turnover	\$0.00	207.59	207.59	7th Power Plan
Lodging	Office Equipment	Laptop	1 unit	New	36.86	4	\$0.01	125%	at stock turnover	\$0.00	27.55	27.55	7th Power Plan
Lodging	Office Equipment	Monitor	1 unit	New	30.65	5	\$0.01	125%	at stock turnover	\$0.00	13.00	13.00	7th Power Plan
Lodging	Office Equipment	Server	1 unit	New	74.10	4	\$0.01	125%	at stock turnover	\$0.00	116.49	116.49	AEG Research
Lodging	Office Equipment	Printer/Copier/Fax	1 unit	New	223.00	6	\$0.01	125%	at stock turnover	\$0.00	6.01	6.01	ENERGY STAR
Lodging	Office Equipment	POS Terminal	1 unit	New	123.52	5	\$0.01	44%	at stock turnover	\$0.00	29.51	29.51	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Lodging	Miscellaneous	Non-HVAC Motors	1 unit	New	0.00	15	\$0.00	107%	at stock turnover	\$0.00	0.00	0.00	N/A
Lodging	Miscellaneous	Pool Pump	1 unit	New	1,432.30	10	\$246.30	0%	at stock turnover	\$0.02	94.46	94.46	Southern California Edison
Lodging	Miscellaneous	Pool Heater	1 unit	New	15,277.63	15	\$3,546.07	0%	at stock turnover	\$0.02	59.64	59.64	AEG Research
Lodging	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Warehouse	Cooling	Air-Cooled Chiller	1 kBTU/hr	Existing	0.00	20	\$26.36	17%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Warehouse	Cooling	Water-Cooled Chiller	1 kBTU/hr	Existing	0.00	25	\$12.65	10%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Warehouse	Cooling	RTU	1 kBTU/hr	Existing	4.88	15	\$6.75	55%	at stock turnover	\$0.12	1,177.41	1,177.41	Annual Energy Outlook, 2015
Warehouse	Cooling	Room AC	1 kBTU/hr	Existing	18.37	15	\$23.62	3%	at stock turnover	\$0.11	290.60	290.60	Annual Energy Outlook, 2015
Warehouse	Cooling	Evaporative AC	11 per TR	Existing	0.00	15	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	New Buildings Institute Study, 2006
Warehouse	Cooling	Air-Source Heat Pump	1 kBTU/hr	Existing	9.41	15	\$21.65	4%	at stock turnover	\$0.12	175.52	175.52	Annual Energy Outlook, 2015
Warehouse	Heating	Air-Source Heat Pump	1 kBTU/hr	Existing	5.68	15	\$21.65	4%	at stock turnover	\$0.12	105.89	105.89	Annual Energy Outlook, 2015
Warehouse	Cooling	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	3%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Warehouse	Heating	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	3%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Warehouse	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Warehouse	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	31%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Warehouse	Ventilation	Ventilation	1000 CFM	Existing	1,685.38	20	\$1,219.71	100%	at stock turnover	\$0.05	3,438.74	3,438.74	AEG-BEST
Warehouse	Water Heating	Water Heater	65 gallons	Existing	2,164.03	13	\$3,537.01	45%	at stock turnover	\$0.15	3,883.72	3,883.72	7th Power Plan
Warehouse	Interior Lighting	Screw-in	lamps	Existing	55.66	8	\$3.95	100%	at stock turnover	\$0.01	2,378.09	4,497.95	7th Power Plan
Warehouse	Interior Lighting	Linear Lighting	lamps	Existing	75.32	17	\$52.83	100%	at stock turnover	\$0.05	11,584.68	11,026.20	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Warehouse	Interior Lighting	High-Bay Fixtures	lamps	Existing	450.57	15	\$123.86	100%	at stock turnover	\$0.02	60,504.54	55,701.16	Annual Energy Outlook, 2015
Warehouse	Exterior Lighting	Screw-in	lamps	Existing	97.27	8	\$3.95	100%	at stock turnover	\$0.01	727.78	1,376.53	7th Power Plan
Warehouse	Exterior Lighting	Linear Lighting	lamps	Existing	139.75	17	\$52.83	100%	at stock turnover	\$0.03	3,130.78	2,979.85	7th Power Plan
Warehouse	Exterior Lighting	Area Lighting	lamps	Existing	1,020.17	15	\$44.55	100%	at stock turnover	\$0.00	15,733.15	14,903.38	Annual Energy Outlook, 2015
Warehouse	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	Existing	1,507.00	11	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Warehouse	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	Existing	605.00	15	\$0.00	14%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Warehouse	Refrigeration	Glass Door Display	1 unit	Existing	767.00	15	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Warehouse	Refrigeration	Open Display Case	1 unit	Existing	1,438.00	10	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Warehouse	Refrigeration	Icemaker	1 unit	Existing	443.88	9	\$1,073.62	45%	at stock turnover	\$0.31	118.04	119.17	ENERGY STAR
Warehouse	Refrigeration	Vending Machine	1 unit	Existing	81.00	10	\$42.74	45%	at stock turnover	\$0.06	23.44	23.44	EIA 2011-2012 Ref. Case
Warehouse	Food Preparation	Oven	1 unit	Existing	15,104.75	10	\$1,087.12	66%	at stock turnover	\$0.01	8.62	8.62	RTF Workbook
Warehouse	Food Preparation	Fryer	1 unit	Existing	2,881.11	10	\$782.02	76%	at stock turnover	\$0.03	3.70	3.70	RTF Workbook
Warehouse	Food Preparation	Dishwasher	1 unit	Existing	1,348.33	15	\$564.57	20%	at stock turnover	\$0.04	1.11	1.11	ENERGY STAR
Warehouse	Food Preparation	Hot Food Container	1 unit	Existing	802.23	20	\$490.95	20%	at stock turnover	\$0.04	1.64	1.64	RTF Workbook
Warehouse	Food Preparation	Steamer	1 unit	Existing	66,188.82	9	\$837.45	20%	at stock turnover	\$0.00	19.62	19.62	RTF Workbook
Warehouse	Office Equipment	Desktop Computer	1 unit	Existing	123.52	5	\$0.01	100%	at stock turnover	\$0.00	1,465.15	1,465.15	7th Power Plan
Warehouse	Office Equipment	Laptop	1 unit	Existing	36.86	4	\$0.01	100%	at stock turnover	\$0.00	144.29	144.29	7th Power Plan
Warehouse	Office Equipment	Monitor	1 unit	Existing	30.65	5	\$0.01	100%	at stock turnover	\$0.00	91.73	91.73	7th Power Plan
Warehouse	Office Equipment	Server	1 unit	Existing	74.10	4	\$0.01	100%	at stock turnover	\$0.00	1,522.15	1,522.15	AEG Research

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Warehouse	Office Equipment	Printer/Copier/Fax	1 unit	Existing	223.00	6	\$0.01	100%	at stock turnover	\$0.00	33.74	33.74	ENERGY STAR
Warehouse	Office Equipment	POS Terminal	1 unit	Existing	123.52	5	\$0.01	40%	at stock turnover	\$0.00	518.83	518.83	7th Power Plan
Warehouse	Miscellaneous	Non-HVAC Motors	1 unit	Existing	0.00	15	\$0.00	90%	at stock turnover	\$0.00	0.00	0.00	N/A
Warehouse	Miscellaneous	Pool Pump	1 unit	Existing	0.00	10	\$246.30	0%	at stock turnover	\$0.00	0.00	0.00	Southern California Edison
Warehouse	Miscellaneous	Pool Heater	1 unit	Existing	0.00	15	\$3,546.07	0%	at stock turnover	\$0.00	0.00	0.00	AEG Research
Warehouse	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Warehouse	Cooling	Air-Cooled Chiller	1 kBTU/hr	New	0.00	20	\$26.36	19%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Warehouse	Cooling	Water-Cooled Chiller	1 kBTU/hr	New	0.00	25	\$12.65	12%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Warehouse	Cooling	RTU	1 kBTU/hr	New	4.15	15	\$6.75	62%	at stock turnover	\$0.14	1,091.78	1,091.78	Annual Energy Outlook, 2015
Warehouse	Cooling	Room AC	1 kBTU/hr	New	13.59	15	\$23.62	3%	at stock turnover	\$0.15	234.69	234.69	Annual Energy Outlook, 2015
Warehouse	Cooling	Evaporative AC	11 per TR	New	0.00	15	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	New Buildings Institute Study, 2006
Warehouse	Cooling	Air-Source Heat Pump	1 kBTU/hr	New	7.94	15	\$21.65	5%	at stock turnover	\$0.14	170.85	170.85	Annual Energy Outlook, 2015
Warehouse	Heating	Air-Source Heat Pump	1 kBTU/hr	New	5.51	15	\$21.65	5%	at stock turnover	\$0.14	118.57	118.57	Annual Energy Outlook, 2015
Warehouse	Cooling	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	3%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Warehouse	Heating	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	3%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Warehouse	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Warehouse	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	31%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Warehouse	Ventilation	Ventilation	1000 CFM	New	1,451.00	20	\$1,219.71	100%	at stock turnover	\$0.06	3,469.11	3,469.11	AEG-BEST
Warehouse	Water Heating	Water Heater	65 gallons	New	2,164.03	13	\$3,537.01	45%	at stock turnover	\$0.15	3,867.86	3,867.86	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Warehouse	Interior Lighting	Screw-in	lamps	New	55.72	8	\$3.95	100%	at stock turnover	\$0.01	2,328.92	2,717.71	7th Power Plan
Warehouse	Interior Lighting	Linear Lighting	lamps	New	75.32	17	\$52.83	100%	at stock turnover	\$0.05	11,039.82	10,658.38	7th Power Plan
Warehouse	Interior Lighting	High-Bay Fixtures	lamps	New	451.21	15	\$123.86	100%	at stock turnover	\$0.02	67,194.00	63,710.53	Annual Energy Outlook, 2015
Warehouse	Exterior Lighting	Screw-in	lamps	New	97.37	8	\$3.95	100%	at stock turnover	\$0.01	712.73	831.71	7th Power Plan
Warehouse	Exterior Lighting	Linear Lighting	lamps	New	139.75	17	\$52.83	100%	at stock turnover	\$0.03	2,983.53	2,880.45	7th Power Plan
Warehouse	Exterior Lighting	Area Lighting	lamps	New	1,020.17	15	\$44.55	100%	at stock turnover	\$0.00	17,359.44	16,757.68	Annual Energy Outlook, 2015
Warehouse	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	New	1,507.00	11	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Warehouse	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	New	605.00	15	\$0.00	17%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Warehouse	Refrigeration	Glass Door Display	1 unit	New	767.00	15	\$0.00	93%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Warehouse	Refrigeration	Open Display Case	1 unit	New	1,438.00	10	\$0.00	93%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Warehouse	Refrigeration	Icemaker	1 unit	New	443.88	9	\$1,073.62	54%	at stock turnover	\$0.31	140.60	141.19	ENERGY STAR
Warehouse	Refrigeration	Vending Machine	1 unit	New	81.00	10	\$42.74	54%	at stock turnover	\$0.06	27.01	27.01	EIA 2011-2012 Ref. Case
Warehouse	Food Preparation	Oven	1 unit	New	15,104.75	10	\$1,087.12	79%	at stock turnover	\$0.01	9.93	9.93	RTF Workbook
Warehouse	Food Preparation	Fryer	1 unit	New	2,881.11	10	\$782.02	92%	at stock turnover	\$0.03	3.91	3.91	RTF Workbook
Warehouse	Food Preparation	Dishwasher	1 unit	New	1,348.33	15	\$564.57	24%	at stock turnover	\$0.04	1.32	1.32	ENERGY STAR
Warehouse	Food Preparation	Hot Food Container	1 unit	New	802.23	20	\$490.95	24%	at stock turnover	\$0.04	2.03	2.03	RTF Workbook
Warehouse	Food Preparation	Steamer	1 unit	New	66,188.82	9	\$837.45	24%	at stock turnover	\$0.00	21.42	21.42	RTF Workbook
Warehouse	Office Equipment	Desktop Computer	1 unit	New	123.52	5	\$0.01	125%	at stock turnover	\$0.00	1,241.99	1,241.99	7th Power Plan
Warehouse	Office Equipment	Laptop	1 unit	New	36.86	4	\$0.01	125%	at stock turnover	\$0.00	131.68	131.68	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Warehouse	Office Equipment	Monitor	1 unit	New	30.65	5	\$0.01	125%	at stock turnover	\$0.00	77.76	77.76	7th Power Plan
Warehouse	Office Equipment	Server	1 unit	New	74.10	4	\$0.01	125%	at stock turnover	\$0.00	1,278.11	1,278.11	AEG Research
Warehouse	Office Equipment	Printer/Copier/Fax	1 unit	New	223.00	6	\$0.01	125%	at stock turnover	\$0.00	35.85	35.85	ENERGY STAR
Warehouse	Office Equipment	POS Terminal	1 unit	New	123.52	5	\$0.01	44%	at stock turnover	\$0.00	467.25	467.25	7th Power Plan
Warehouse	Miscellaneous	Non-HVAC Motors	1 unit	New	0.00	15	\$0.00	107%	at stock turnover	\$0.00	0.00	0.00	N/A
Warehouse	Miscellaneous	Pool Pump	1 unit	New	0.00	10	\$246.30	0%	at stock turnover	\$0.00	0.00	0.00	Southern California Edison
Warehouse	Miscellaneous	Pool Heater	1 unit	New	0.00	15	\$3,546.07	0%	at stock turnover	\$0.00	0.00	0.00	AEG Research
Warehouse	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Warehouse, Controlled Atm.	Cooling	Air-Cooled Chiller	1 kBTU/hr	Existing	26.54	20	\$26.36	17%	at stock turnover	\$0.07	123.87	123.87	Annual Energy Outlook, 2015
Warehouse, Controlled Atm.	Cooling	Water-Cooled Chiller	1 kBTU/hr	Existing	36.26	25	\$12.65	10%	at stock turnover	\$0.02	18.81	18.81	Annual Energy Outlook, 2015
Warehouse, Controlled Atm.	Cooling	RTU	1 kBTU/hr	Existing	4.17	15	\$6.75	55%	at stock turnover	\$0.14	30.45	30.45	Annual Energy Outlook, 2015
Warehouse, Controlled Atm.	Cooling	Room AC	1 kBTU/hr	Existing	15.69	15	\$23.62	3%	at stock turnover	\$0.13	6.90	6.90	Annual Energy Outlook, 2015
Warehouse, Controlled Atm.	Cooling	Evaporative AC	11 per TR	Existing	0.00	15	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	New Buildings Institute Study, 2006
Warehouse, Controlled Atm.	Cooling	Air-Source Heat Pump	1 kBTU/hr	Existing	8.04	15	\$21.65	4%	at stock turnover	\$0.14	4.06	4.06	Annual Energy Outlook, 2015
Warehouse, Controlled Atm.	Heating	Air-Source Heat Pump	1 kBTU/hr	Existing	4.66	15	\$21.65	4%	at stock turnover	\$0.14	2.35	2.35	Annual Energy Outlook, 2015
Warehouse, Controlled Atm.	Cooling	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	3%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Warehouse, Controlled Atm.	Heating	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	3%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Warehouse, Controlled Atm.	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Warehouse, Controlled Atm.	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	31%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Warehouse, Controlled Atm.	Ventilation	Ventilation	1000 CFM	Existing	5,001.87	20	\$1,219.71	100%	at stock turnover	\$0.02	256.06	256.06	AEG-BEST
Warehouse, Controlled Atm.	Water Heating	Water Heater	65 gallons	Existing	2,164.03	13	\$3,537.01	45%	at stock turnover	\$0.15	166.31	166.31	7th Power Plan
Warehouse, Controlled Atm.	Interior Lighting	Screw-in	lamps	Existing	55.66	8	\$3.95	100%	at stock turnover	\$0.01	59.67	112.85	7th Power Plan
Warehouse, Controlled Atm.	Interior Lighting	Linear Lighting	lamps	Existing	75.32	17	\$52.83	100%	at stock turnover	\$0.05	290.66	276.65	7th Power Plan
Warehouse, Controlled Atm.	Interior Lighting	High-Bay Fixtures	lamps	Existing	450.57	15	\$123.86	100%	at stock turnover	\$0.02	1,518.06	1,397.54	Annual Energy Outlook, 2015
Warehouse, Controlled Atm.	Exterior Lighting	Screw-in	lamps	Existing	97.27	8	\$3.95	100%	at stock turnover	\$0.01	18.26	34.54	7th Power Plan
Warehouse, Controlled Atm.	Exterior Lighting	Linear Lighting	lamps	Existing	139.75	17	\$52.83	100%	at stock turnover	\$0.03	78.55	74.76	7th Power Plan
Warehouse, Controlled Atm.	Exterior Lighting	Area Lighting	lamps	Existing	1,020.17	15	\$44.55	100%	at stock turnover	\$0.00	394.74	373.93	Annual Energy Outlook, 2015
Warehouse, Controlled Atm.	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	Existing	1,507.00	11	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Warehouse, Controlled Atm.	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	Existing	605.00	15	\$0.00	14%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Warehouse, Controlled Atm.	Refrigeration	Glass Door Display	1 unit	Existing	767.00	15	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Warehouse, Controlled Atm.	Refrigeration	Open Display Case	1 unit	Existing	1,438.00	10	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Warehouse, Controlled Atm.	Refrigeration	Icemaker	1 unit	Existing	443.88	9	\$1,073.62	45%	at stock turnover	\$0.31	179.83	181.56	ENERGY STAR
Warehouse, Controlled Atm.	Refrigeration	Vending Machine	1 unit	Existing	81.00	10	\$42.74	45%	at stock turnover	\$0.06	35.71	35.71	EIA 2011-2012 Ref. Case
Warehouse, Controlled Atm.	Food Preparation	Oven	1 unit	Existing	15,104.75	10	\$1,087.12	66%	at stock turnover	\$0.01	8.51	8.51	RTF Workbook
Warehouse, Controlled Atm.	Food Preparation	Fryer	1 unit	Existing	2,881.11	10	\$782.02	76%	at stock turnover	\$0.03	3.66	3.66	RTF Workbook
Warehouse, Controlled Atm.	Food Preparation	Dishwasher	1 unit	Existing	1,348.33	15	\$564.57	20%	at stock turnover	\$0.04	1.09	1.09	ENERGY STAR
Warehouse, Controlled Atm.	Food Preparation	Hot Food Container	1 unit	Existing	802.23	20	\$490.95	20%	at stock turnover	\$0.04	1.62	1.62	RTF Workbook
Warehouse, Controlled Atm.	Food Preparation	Steamer	1 unit	Existing	66,188.82	9	\$837.45	20%	at stock turnover	\$0.00	19.37	19.37	RTF Workbook

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Warehouse, Controlled Atm.	Office Equipment	Desktop Computer	1 unit	Existing	123.52	5	\$0.01	100%	at stock turnover	\$0.00	26.17	26.17	7th Power Plan
Warehouse, Controlled Atm.	Office Equipment	Laptop	1 unit	Existing	36.86	4	\$0.01	100%	at stock turnover	\$0.00	2.58	2.58	7th Power Plan
Warehouse, Controlled Atm.	Office Equipment	Monitor	1 unit	Existing	30.65	5	\$0.01	100%	at stock turnover	\$0.00	1.64	1.64	7th Power Plan
Warehouse, Controlled Atm.	Office Equipment	Server	1 unit	Existing	74.10	4	\$0.01	100%	at stock turnover	\$0.00	27.19	27.19	AEG Research
Warehouse, Controlled Atm.	Office Equipment	Printer/Copier/Fax	1 unit	Existing	223.00	6	\$0.01	100%	at stock turnover	\$0.00	0.60	0.60	ENERGY STAR
Warehouse, Controlled Atm.	Office Equipment	POS Terminal	1 unit	Existing	123.52	5	\$0.01	40%	at stock turnover	\$0.00	9.27	9.27	7th Power Plan
Warehouse, Controlled Atm.	Miscellaneous	Non-HVAC Motors	1 unit	Existing	0.00	15	\$0.00	90%	at stock turnover	\$0.00	0.00	0.00	N/A
Warehouse, Controlled Atm.	Miscellaneous	Pool Pump	1 unit	Existing	0.00	10	\$246.30	0%	at stock turnover	\$0.00	0.00	0.00	Southern California Edison
Warehouse, Controlled Atm.	Miscellaneous	Pool Heater	1 unit	Existing	0.00	15	\$3,546.07	0%	at stock turnover	\$0.00	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Warehouse, Controlled Atm.	Cooling	Air-Cooled Chiller	1 kBTU/hr	New	22.45	20	\$26.36	19%	at stock turnover	\$0.08	144.46	144.46	Annual Energy Outlook, 2015
Warehouse, Controlled Atm.	Cooling	Water-Cooled Chiller	1 kBTU/hr	New	30.86	25	\$12.65	12%	at stock turnover	\$0.03	19.07	19.07	Annual Energy Outlook, 2015
Warehouse, Controlled Atm.	Cooling	RTU	1 kBTU/hr	New	3.54	15	\$6.75	62%	at stock turnover	\$0.16	28.23	28.23	Annual Energy Outlook, 2015
Warehouse, Controlled Atm.	Cooling	Room AC	1 kBTU/hr	New	11.60	15	\$23.62	3%	at stock turnover	\$0.17	5.57	5.57	Annual Energy Outlook, 2015
Warehouse, Controlled Atm.	Cooling	Evaporative AC	11 per TR	New	0.00	15	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	New Buildings Institute Study, 2006
Warehouse, Controlled Atm.	Cooling	Air-Source Heat Pump	1 kBTU/hr	New	6.78	15	\$21.65	5%	at stock turnover	\$0.16	3.95	3.95	Annual Energy Outlook, 2015
Warehouse, Controlled Atm.	Heating	Air-Source Heat Pump	1 kBTU/hr	New	4.52	15	\$21.65	5%	at stock turnover	\$0.16	2.63	2.63	Annual Energy Outlook, 2015
Warehouse, Controlled Atm.	Cooling	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	3%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Warehouse, Controlled Atm.	Heating	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	3%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Warehouse, Controlled Atm.	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Warehouse, Controlled Atm.	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	31%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Warehouse, Controlled Atm.	Ventilation	Ventilation	1000 CFM	New	4,306.30	20	\$1,219.71	100%	at stock turnover	\$0.02	258.32	258.32	AEG-BEST
Warehouse, Controlled Atm.	Water Heating	Water Heater	65 gallons	New	2,164.03	13	\$3,537.01	45%	at stock turnover	\$0.15	165.63	165.63	7th Power Plan
Warehouse, Controlled Atm.	Interior Lighting	Screw-in	lamps	New	55.72	8	\$3.95	100%	at stock turnover	\$0.01	58.43	68.19	7th Power Plan
Warehouse, Controlled Atm.	Interior Lighting	Linear Lighting	lamps	New	75.32	17	\$52.83	100%	at stock turnover	\$0.05	276.99	267.42	7th Power Plan
Warehouse, Controlled Atm.	Interior Lighting	High-Bay Fixtures	lamps	New	451.21	15	\$123.86	100%	at stock turnover	\$0.02	1,685.90	1,598.50	Annual Energy Outlook, 2015
Warehouse, Controlled Atm.	Exterior Lighting	Screw-in	lamps	New	97.37	8	\$3.95	100%	at stock turnover	\$0.01	17.88	20.87	7th Power Plan
Warehouse, Controlled Atm.	Exterior Lighting	Linear Lighting	lamps	New	139.75	17	\$52.83	100%	at stock turnover	\$0.03	74.86	72.27	7th Power Plan
Warehouse, Controlled Atm.	Exterior Lighting	Area Lighting	lamps	New	1,020.17	15	\$44.55	100%	at stock turnover	\$0.00	435.55	420.45	Annual Energy Outlook, 2015
Warehouse, Controlled Atm.	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	New	1,507.00	11	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Warehouse, Controlled Atm.	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	New	605.00	15	\$0.00	17%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Warehouse, Controlled Atm.	Refrigeration	Glass Door Display	1 unit	New	767.00	15	\$0.00	93%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Warehouse, Controlled Atm.	Refrigeration	Open Display Case	1 unit	New	1,438.00	10	\$0.00	93%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Warehouse, Controlled Atm.	Refrigeration	Icemaker	1 unit	New	443.88	9	\$1,073.62	54%	at stock turnover	\$0.31	214.21	215.11	ENERGY STAR
Warehouse, Controlled Atm.	Refrigeration	Vending Machine	1 unit	New	81.00	10	\$42.74	54%	at stock turnover	\$0.06	41.15	41.15	EIA 2011-2012 Ref. Case
Warehouse, Controlled Atm.	Food Preparation	Oven	1 unit	New	15,104.75	10	\$1,087.12	79%	at stock turnover	\$0.01	9.81	9.81	RTF Workbook
Warehouse, Controlled Atm.	Food Preparation	Fryer	1 unit	New	2,881.11	10	\$782.02	92%	at stock turnover	\$0.03	3.86	3.86	RTF Workbook
Warehouse, Controlled Atm.	Food Preparation	Dishwasher	1 unit	New	1,348.33	15	\$564.57	24%	at stock turnover	\$0.04	1.31	1.31	ENERGY STAR

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Warehouse, Controlled Atm.	Food Preparation	Hot Food Container	1 unit	New	802.23	20	\$490.95	24%	at stock turnover	\$0.04	2.00	2.00	RTF Workbook
Warehouse, Controlled Atm.	Food Preparation	Steamer	1 unit	New	66,188.82	9	\$837.45	24%	at stock turnover	\$0.00	21.15	21.15	RTF Workbook
Warehouse, Controlled Atm.	Office Equipment	Desktop Computer	1 unit	New	123.52	5	\$0.01	125%	at stock turnover	\$0.00	22.19	22.19	7th Power Plan
Warehouse, Controlled Atm.	Office Equipment	Laptop	1 unit	New	36.86	4	\$0.01	125%	at stock turnover	\$0.00	2.35	2.35	7th Power Plan
Warehouse, Controlled Atm.	Office Equipment	Monitor	1 unit	New	30.65	5	\$0.01	125%	at stock turnover	\$0.00	1.39	1.39	7th Power Plan
Warehouse, Controlled Atm.	Office Equipment	Server	1 unit	New	74.10	4	\$0.01	125%	at stock turnover	\$0.00	22.83	22.83	AEG Research
Warehouse, Controlled Atm.	Office Equipment	Printer/Copier/Fax	1 unit	New	223.00	6	\$0.01	125%	at stock turnover	\$0.00	0.64	0.64	ENERGY STAR
Warehouse, Controlled Atm.	Office Equipment	POS Terminal	1 unit	New	123.52	5	\$0.01	44%	at stock turnover	\$0.00	8.35	8.35	7th Power Plan
Warehouse, Controlled Atm.	Miscellaneous	Non-HVAC Motors	1 unit	New	0.00	15	\$0.00	107%	at stock turnover	\$0.00	0.00	0.00	N/A
Warehouse, Controlled Atm.	Miscellaneous	Pool Pump	1 unit	New	0.00	10	\$246.30	0%	at stock turnover	\$0.00	0.00	0.00	Southern California Edison
Warehouse, Controlled Atm.	Miscellaneous	Pool Heater	1 unit	New	0.00	15	\$3,546.07	0%	at stock turnover	\$0.00	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Data Center	Cooling	Air-Cooled Chiller	1 kBTU/hr	Existing	87.00	20	\$26.36	17%	at stock turnover	\$0.02	912.55	912.55	Annual Energy Outlook, 2015
Data Center	Cooling	Water-Cooled Chiller	1 kBTU/hr	Existing	122.68	25	\$12.65	10%	at stock turnover	\$0.01	792.43	792.43	Annual Energy Outlook, 2015
Data Center	Cooling	RTU	1 kBTU/hr	Existing	13.26	15	\$6.75	55%	at stock turnover	\$0.04	537.66	537.66	Annual Energy Outlook, 2015
Data Center	Cooling	Room AC	1 kBTU/hr	Existing	49.88	15	\$23.62	3%	at stock turnover	\$0.04	106.92	106.92	Annual Energy Outlook, 2015
Data Center	Cooling	Evaporative AC	11 per TR	Existing	0.00	15	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	New Buildings Institute Study, 2006
Data Center	Cooling	Air-Source Heat Pump	1 kBTU/hr	Existing	25.56	15	\$21.65	4%	at stock turnover	\$0.07	70.24	70.24	Annual Energy Outlook, 2015
Data Center	Heating	Air-Source Heat Pump	1 kBTU/hr	Existing	0.55	15	\$21.65	4%	at stock turnover	\$0.07	1.50	1.50	Annual Energy Outlook, 2015

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Data Center	Cooling	Geothermal Heat Pump	1 kBTU/hr	Existing	62.09	25	\$26.36	3%	at stock turnover	\$0.03	77.88	77.88	Annual Energy Outlook, 2015
Data Center	Heating	Geothermal Heat Pump	1 kBTU/hr	Existing	2.38	25	\$26.36	3%	at stock turnover	\$0.03	2.98	2.98	Annual Energy Outlook, 2015
Data Center	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Data Center	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	31%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Data Center	Ventilation	Ventilation	1000 CFM	Existing	3,848.56	20	\$1,219.71	100%	at stock turnover	\$0.02	3,726.87	3,726.87	AEG-BEST
Data Center	Water Heating	Water Heater	65 gallons	Existing	2,164.03	13	\$3,537.01	45%	at stock turnover	\$0.15	126.09	126.09	7th Power Plan
Data Center	Interior Lighting	Screw-in	lamps	Existing	68.64	8	\$3.95	100%	at stock turnover	\$0.01	147.73	279.41	7th Power Plan
Data Center	Interior Lighting	Linear Lighting	lamps	Existing	93.43	17	\$52.83	100%	at stock turnover	\$0.04	1,553.80	1,478.89	7th Power Plan
Data Center	Interior Lighting	High-Bay Fixtures	lamps	Existing	593.40	15	\$123.86	100%	at stock turnover	\$0.02	1,081.96	996.06	Annual Energy Outlook, 2015
Data Center	Exterior Lighting	Screw-in	lamps	Existing	89.87	8	\$3.95	100%	at stock turnover	\$0.01	20.67	39.10	7th Power Plan
Data Center	Exterior Lighting	Linear Lighting	lamps	Existing	121.74	17	\$52.83	100%	at stock turnover	\$0.03	95.76	91.14	7th Power Plan
Data Center	Exterior Lighting	Area Lighting	lamps	Existing	1,087.03	15	\$44.55	100%	at stock turnover	\$0.00	436.56	413.54	Annual Energy Outlook, 2015
Data Center	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	Existing	1,507.00	11	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Data Center	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	Existing	605.00	15	\$0.00	14%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Data Center	Refrigeration	Glass Door Display	1 unit	Existing	767.00	15	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Data Center	Refrigeration	Open Display Case	1 unit	Existing	1,438.00	10	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Data Center	Refrigeration	Icemaker	1 unit	Existing	443.88	9	\$1,073.62	45%	at stock turnover	\$0.31	0.14	0.14	ENERGY STAR
Data Center	Refrigeration	Vending Machine	1 unit	Existing	81.00	10	\$42.74	45%	at stock turnover	\$0.06	0.03	0.03	EIA 2011-2012 Ref. Case
Data Center	Food Preparation	Oven	1 unit	Existing	15,104.75	10	\$1,087.12	66%	at stock turnover	\$0.01	0.33	0.33	RTF Workbook

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Data Center	Food Preparation	Fryer	1 unit	Existing	2,881.11	10	\$782.02	76%	at stock turnover	\$0.03	0.14	0.14	RTF Workbook
Data Center	Food Preparation	Dishwasher	1 unit	Existing	1,348.33	15	\$564.57	20%	at stock turnover	\$0.04	0.04	0.04	ENERGY STAR
Data Center	Food Preparation	Hot Food Container	1 unit	Existing	802.23	20	\$490.95	20%	at stock turnover	\$0.04	0.06	0.06	RTF Workbook
Data Center	Food Preparation	Steamer	1 unit	Existing	66,188.82	9	\$837.45	20%	at stock turnover	\$0.00	0.76	0.76	RTF Workbook
Data Center	Office Equipment	Desktop Computer	1 unit	Existing	123.52	5	\$0.01	100%	at stock turnover	\$0.00	849.45	849.45	7th Power Plan
Data Center	Office Equipment	Laptop	1 unit	Existing	36.86	4	\$0.01	100%	at stock turnover	\$0.00	41.83	41.83	7th Power Plan
Data Center	Office Equipment	Monitor	1 unit	Existing	30.65	5	\$0.01	100%	at stock turnover	\$0.00	53.18	53.18	7th Power Plan
Data Center	Office Equipment	Server	1 unit	Existing	74.10	4	\$0.01	100%	at stock turnover	\$0.00	9,530.17	9,530.17	AEG Research
Data Center	Office Equipment	Printer/Copier/Fax	1 unit	Existing	223.00	6	\$0.01	100%	at stock turnover	\$0.00	19.56	19.56	ENERGY STAR
Data Center	Office Equipment	POS Terminal	1 unit	Existing	123.52	5	\$0.01	40%	at stock turnover	\$0.00	15.90	15.90	7th Power Plan
Data Center	Miscellaneous	Non-HVAC Motors	1 unit	Existing	0.00	15	\$0.00	90%	at stock turnover	\$0.00	0.00	0.00	N/A
Data Center	Miscellaneous	Pool Pump	1 unit	Existing	0.00	10	\$246.30	0%	at stock turnover	\$0.00	0.00	0.00	Southern California Edison
Data Center	Miscellaneous	Pool Heater	1 unit	Existing	0.00	15	\$3,546.07	0%	at stock turnover	\$0.00	0.00	0.00	AEG Research
Data Center	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Data Center	Cooling	Air-Cooled Chiller	1 kBTU/hr	New	73.59	20	\$26.36	19%	at stock turnover	\$0.03	995.79	995.79	Annual Energy Outlook, 2015
Data Center	Cooling	Water-Cooled Chiller	1 kBTU/hr	New	104.40	25	\$12.65	12%	at stock turnover	\$0.01	905.98	905.98	Annual Energy Outlook, 2015
Data Center	Cooling	RTU	1 kBTU/hr	New	11.26	15	\$6.75	62%	at stock turnover	\$0.05	466.48	466.48	Annual Energy Outlook, 2015
Data Center	Cooling	Room AC	1 kBTU/hr	New	36.90	15	\$23.62	3%	at stock turnover	\$0.05	80.79	80.79	Annual Energy Outlook, 2015
Data Center	Cooling	Evaporative AC	11 per TR	New	0.00	15	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	New Buildings Institute Study, 2006

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Data Center	Cooling	Air-Source Heat Pump	1 kBTU/hr	New	21.56	15	\$21.65	5%	at stock turnover	\$0.08	80.36	80.36	Annual Energy Outlook, 2015
Data Center	Heating	Air-Source Heat Pump	1 kBTU/hr	New	0.53	15	\$21.65	5%	at stock turnover	\$0.08	1.98	1.98	Annual Energy Outlook, 2015
Data Center	Cooling	Geothermal Heat Pump	1 kBTU/hr	New	47.36	25	\$26.36	3%	at stock turnover	\$0.04	85.18	85.18	Annual Energy Outlook, 2015
Data Center	Heating	Geothermal Heat Pump	1 kBTU/hr	New	1.48	25	\$26.36	3%	at stock turnover	\$0.04	2.66	2.66	Annual Energy Outlook, 2015
Data Center	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Data Center	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	31%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Data Center	Ventilation	Ventilation	1000 CFM	New	3,313.37	20	\$1,219.71	100%	at stock turnover	\$0.03	3,759.77	3,759.77	AEG-BEST
Data Center	Water Heating	Water Heater	65 gallons	New	2,164.03	13	\$3,537.01	45%	at stock turnover	\$0.15	125.58	125.58	7th Power Plan
Data Center	Interior Lighting	Screw-in	lamps	New	68.71	8	\$3.95	100%	at stock turnover	\$0.01	144.67	168.82	7th Power Plan
Data Center	Interior Lighting	Linear Lighting	lamps	New	93.43	17	\$52.83	100%	at stock turnover	\$0.04	1,480.72	1,429.56	7th Power Plan
Data Center	Interior Lighting	High-Bay Fixtures	lamps	New	594.24	15	\$123.86	100%	at stock turnover	\$0.02	1,201.58	1,139.29	Annual Energy Outlook, 2015
Data Center	Exterior Lighting	Screw-in	lamps	New	89.96	8	\$3.95	100%	at stock turnover	\$0.01	20.25	23.63	7th Power Plan
Data Center	Exterior Lighting	Linear Lighting	lamps	New	121.74	17	\$52.83	100%	at stock turnover	\$0.03	91.26	88.10	7th Power Plan
Data Center	Exterior Lighting	Area Lighting	lamps	New	1,087.03	15	\$44.55	100%	at stock turnover	\$0.00	481.69	464.99	Annual Energy Outlook, 2015
Data Center	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	New	1,507.00	11	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Data Center	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	New	605.00	15	\$0.00	17%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Data Center	Refrigeration	Glass Door Display	1 unit	New	767.00	15	\$0.00	93%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Data Center	Refrigeration	Open Display Case	1 unit	New	1,438.00	10	\$0.00	93%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Data Center	Refrigeration	Icemaker	1 unit	New	443.88	9	\$1,073.62	54%	at stock turnover	\$0.31	0.15	0.15	ENERGY STAR

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Data Center	Refrigeration	Vending Machine	1 unit	New	81.00	10	\$42.74	54%	at stock turnover	\$0.06	0.03	0.03	EIA 2011-2012 Ref. Case
Data Center	Food Preparation	Oven	1 unit	New	15,104.75	10	\$1,087.12	79%	at stock turnover	\$0.01	0.35	0.35	RTF Workbook
Data Center	Food Preparation	Fryer	1 unit	New	2,881.11	10	\$782.02	92%	at stock turnover	\$0.03	0.15	0.15	RTF Workbook
Data Center	Food Preparation	Dishwasher	1 unit	New	1,348.33	15	\$564.57	24%	at stock turnover	\$0.04	0.05	0.05	ENERGY STAR
Data Center	Food Preparation	Hot Food Container	1 unit	New	802.23	20	\$490.95	24%	at stock turnover	\$0.04	0.08	0.08	RTF Workbook
Data Center	Food Preparation	Steamer	1 unit	New	66,188.82	9	\$837.45	24%	at stock turnover	\$0.00	0.83	0.83	RTF Workbook
Data Center	Office Equipment	Desktop Computer	1 unit	New	123.52	5	\$0.01	125%	at stock turnover	\$0.00	720.07	720.07	7th Power Plan
Data Center	Office Equipment	Laptop	1 unit	New	36.86	4	\$0.01	125%	at stock turnover	\$0.00	38.17	38.17	7th Power Plan
Data Center	Office Equipment	Monitor	1 unit	New	30.65	5	\$0.01	125%	at stock turnover	\$0.00	45.08	45.08	7th Power Plan
Data Center	Office Equipment	Server	1 unit	New	74.10	4	\$0.01	125%	at stock turnover	\$0.00	8,070.09	8,070.09	AEG Research
Data Center	Office Equipment	Printer/Copier/Fax	1 unit	New	223.00	6	\$0.01	125%	at stock turnover	\$0.00	20.79	20.79	ENERGY STAR
Data Center	Office Equipment	POS Terminal	1 unit	New	123.52	5	\$0.01	44%	at stock turnover	\$0.00	14.07	14.07	7th Power Plan
Data Center	Miscellaneous	Non-HVAC Motors	1 unit	New	0.00	15	\$0.00	107%	at stock turnover	\$0.00	0.00	0.00	N/A
Data Center	Miscellaneous	Pool Pump	1 unit	New	0.00	10	\$246.30	0%	at stock turnover	\$0.00	0.00	0.00	Southern California Edison
Data Center	Miscellaneous	Pool Heater	1 unit	New	0.00	15	\$3,546.07	0%	at stock turnover	\$0.00	0.00	0.00	AEG Research
Data Center	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Miscellaneous	Cooling	Air-Cooled Chiller	1 kBTU/hr	Existing	15.58	20	\$26.36	17%	at stock turnover	\$0.12	3,211.30	3,211.30	Annual Energy Outlook, 2015
Miscellaneous	Cooling	Water-Cooled Chiller	1 kBTU/hr	Existing	21.76	25	\$12.65	10%	at stock turnover	\$0.04	2,322.19	2,322.19	Annual Energy Outlook, 2015
Miscellaneous	Cooling	RTU	1 kBTU/hr	Existing	2.45	15	\$6.75	55%	at stock turnover	\$0.23	3,527.30	3,527.30	Annual Energy Outlook, 2015

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Miscellaneous	Cooling	Room AC	1 kBTU/hr	Existing	9.22	15	\$23.62	3%	at stock turnover	\$0.22	1,185.80	1,185.80	Annual Energy Outlook, 2015
Miscellaneous	Cooling	Evaporative AC	11 per TR	Existing	0.00	15	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	New Buildings Institute Study, 2006
Miscellaneous	Cooling	Air-Source Heat Pump	1 kBTU/hr	Existing	4.72	15	\$21.65	4%	at stock turnover	\$0.29	388.51	388.51	Annual Energy Outlook, 2015
Miscellaneous	Heating	Air-Source Heat Pump	1 kBTU/hr	Existing	1.51	15	\$21.65	4%	at stock turnover	\$0.29	124.31	124.31	Annual Energy Outlook, 2015
Miscellaneous	Cooling	Geothermal Heat Pump	1 kBTU/hr	Existing	11.48	25	\$26.36	3%	at stock turnover	\$0.10	166.56	166.56	Annual Energy Outlook, 2015
Miscellaneous	Heating	Geothermal Heat Pump	1 kBTU/hr	Existing	6.16	25	\$26.36	3%	at stock turnover	\$0.10	89.44	89.44	Annual Energy Outlook, 2015
Miscellaneous	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Miscellaneous	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	31%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Miscellaneous	Ventilation	Ventilation	1000 CFM	Existing	3,618.21	20	\$1,219.71	100%	at stock turnover	\$0.02	5,286.87	5,286.87	AEG-BEST
Miscellaneous	Water Heating	Water Heater	65 gallons	Existing	2,164.06	13	\$3,537.01	45%	at stock turnover	\$0.15	3,533.07	3,533.07	7th Power Plan
Miscellaneous	Interior Lighting	Screw-in	lamps	Existing	83.49	8	\$3.95	100%	at stock turnover	\$0.01	6,709.81	12,813.04	7th Power Plan
Miscellaneous	Interior Lighting	Linear Lighting	lamps	Existing	120.29	17	\$52.83	100%	at stock turnover	\$0.03	34,823.64	33,094.35	7th Power Plan
Miscellaneous	Interior Lighting	High-Bay Fixtures	lamps	Existing	773.73	15	\$123.86	100%	at stock turnover	\$0.01	35,060.05	32,342.21	Annual Energy Outlook, 2015
Miscellaneous	Exterior Lighting	Screw-in	lamps	Existing	91.89	8	\$3.95	100%	at stock turnover	\$0.01	1,299.67	2,481.85	7th Power Plan
Miscellaneous	Exterior Lighting	Linear Lighting	lamps	Existing	139.02	17	\$52.83	100%	at stock turnover	\$0.03	1,401.38	1,331.79	7th Power Plan
Miscellaneous	Exterior Lighting	Area Lighting	lamps	Existing	1,153.50	15	\$44.55	100%	at stock turnover	\$0.00	17,074.93	16,147.95	Annual Energy Outlook, 2015
Miscellaneous	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	Existing	1,507.00	11	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Miscellaneous	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	Existing	605.00	15	\$0.00	14%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Miscellaneous	Refrigeration	Glass Door Display	1 unit	Existing	767.00	15	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Miscellaneous	Refrigeration	Open Display Case	1 unit	Existing	1,438.00	10	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Miscellaneous	Refrigeration	Icemaker	1 unit	Existing	443.88	9	\$1,073.62	45%	at stock turnover	\$0.31	307.07	310.15	ENERGY STAR
Miscellaneous	Refrigeration	Vending Machine	1 unit	Existing	81.00	10	\$42.74	45%	at stock turnover	\$0.06	122.43	122.43	EIA 2011-2012 Ref. Case
Miscellaneous	Food Preparation	Oven	1 unit	Existing	15,104.75	10	\$1,087.12	66%	at stock turnover	\$0.01	642.81	642.81	RTF Workbook
Miscellaneous	Food Preparation	Fryer	1 unit	Existing	2,881.11	10	\$782.02	76%	at stock turnover	\$0.03	140.17	140.17	RTF Workbook
Miscellaneous	Food Preparation	Dishwasher	1 unit	Existing	1,348.33	15	\$564.57	20%	at stock turnover	\$0.04	10.26	10.26	ENERGY STAR
Miscellaneous	Food Preparation	Hot Food Container	1 unit	Existing	802.23	20	\$490.95	20%	at stock turnover	\$0.04	15.26	15.26	RTF Workbook
Miscellaneous	Food Preparation	Steamer	1 unit	Existing	66,188.82	9	\$837.45	20%	at stock turnover	\$0.00	180.89	180.89	RTF Workbook
Miscellaneous	Office Equipment	Desktop Computer	1 unit	Existing	123.52	5	\$0.01	100%	at stock turnover	\$0.00	2,409.66	2,409.66	7th Power Plan
Miscellaneous	Office Equipment	Laptop	1 unit	Existing	36.86	4	\$0.01	100%	at stock turnover	\$0.00	293.46	293.46	7th Power Plan
Miscellaneous	Office Equipment	Monitor	1 unit	Existing	30.65	5	\$0.01	100%	at stock turnover	\$0.00	150.86	150.86	7th Power Plan
Miscellaneous	Office Equipment	Server	1 unit	Existing	74.10	4	\$0.01	100%	at stock turnover	\$0.00	1,024.89	1,024.89	AEG Research
Miscellaneous	Office Equipment	Printer/Copier/Fax	1 unit	Existing	223.00	6	\$0.01	100%	at stock turnover	\$0.00	54.33	54.33	ENERGY STAR
Miscellaneous	Office Equipment	POS Terminal	1 unit	Existing	123.52	5	\$0.01	40%	at stock turnover	\$0.00	158.08	158.08	7th Power Plan
Miscellaneous	Miscellaneous	Non-HVAC Motors	1 unit	Existing	0.00	15	\$0.00	90%	at stock turnover	\$0.00	0.00	0.00	N/A
Miscellaneous	Miscellaneous	Pool Pump	1 unit	Existing	1,432.30	10	\$246.30	0%	at stock turnover	\$0.02	10.79	10.79	Southern California Edison
Miscellaneous	Miscellaneous	Pool Heater	1 unit	Existing	15,277.63	15	\$3,546.07	0%	at stock turnover	\$0.02	4.70	4.70	AEG Research
Miscellaneous	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Miscellaneous	Cooling	Air-Cooled Chiller	1 kBTU/hr	New	13.18	20	\$26.36	19%	at stock turnover	\$0.14	5,586.88	5,586.88	Annual Energy Outlook, 2015

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Miscellaneous	Cooling	Water-Cooled Chiller	1 kBTU/hr	New	18.52	25	\$12.65	12%	at stock turnover	\$0.04	3,503.21	3,503.21	Annual Energy Outlook, 2015
Miscellaneous	Cooling	RTU	1 kBTU/hr	New	1.85	15	\$6.75	62%	at stock turnover	\$0.31	4,353.74	4,353.74	Annual Energy Outlook, 2015
Miscellaneous	Cooling	Room AC	1 kBTU/hr	New	6.82	15	\$23.62	3%	at stock turnover	\$0.29	1,435.27	1,435.27	Annual Energy Outlook, 2015
Miscellaneous	Cooling	Evaporative AC	11 per TR	New	0.00	15	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	New Buildings Institute Study, 2006
Miscellaneous	Cooling	Air-Source Heat Pump	1 kBTU/hr	New	3.47	15	\$21.65	5%	at stock turnover	\$0.37	493.86	493.86	Annual Energy Outlook, 2015
Miscellaneous	Heating	Air-Source Heat Pump	1 kBTU/hr	New	1.47	15	\$21.65	5%	at stock turnover	\$0.37	209.04	209.04	Annual Energy Outlook, 2015
Miscellaneous	Cooling	Geothermal Heat Pump	1 kBTU/hr	New	10.83	25	\$26.36	3%	at stock turnover	\$0.11	285.74	285.74	Annual Energy Outlook, 2015
Miscellaneous	Heating	Geothermal Heat Pump	1 kBTU/hr	New	4.26	25	\$26.36	3%	at stock turnover	\$0.11	112.51	112.51	Annual Energy Outlook, 2015
Miscellaneous	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Miscellaneous	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	31%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Miscellaneous	Ventilation	Ventilation	1000 CFM	New	3,352.78	20	\$1,219.71	100%	at stock turnover	\$0.03	7,420.25	7,420.25	AEG-BEST
Miscellaneous	Water Heating	Water Heater	65 gallons	New	2,164.06	13	\$3,537.01	45%	at stock turnover	\$0.15	3,903.25	3,903.25	7th Power Plan
Miscellaneous	Interior Lighting	Screw-in	lamps	New	82.55	8	\$3.95	100%	at stock turnover	\$0.01	7,216.37	8,372.05	7th Power Plan
Miscellaneous	Interior Lighting	Linear Lighting	lamps	New	120.29	17	\$52.83	100%	at stock turnover	\$0.03	36,605.41	35,318.56	7th Power Plan
Miscellaneous	Interior Lighting	High-Bay Fixtures	lamps	New	763.19	15	\$123.86	100%	at stock turnover	\$0.01	42,417.88	40,270.04	Annual Energy Outlook, 2015
Miscellaneous	Exterior Lighting	Screw-in	lamps	New	90.85	8	\$3.95	100%	at stock turnover	\$0.01	1,397.79	1,621.64	7th Power Plan
Miscellaneous	Exterior Lighting	Linear Lighting	lamps	New	139.02	17	\$52.83	100%	at stock turnover	\$0.03	1,473.08	1,421.30	7th Power Plan
Miscellaneous	Exterior Lighting	Area Lighting	lamps	New	1,153.50	15	\$44.55	100%	at stock turnover	\$0.00	20,796.54	20,063.97	Annual Energy Outlook, 2015
Miscellaneous	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	New	1,507.00	11	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Miscellaneous	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	New	605.00	15	\$0.00	17%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Miscellaneous	Refrigeration	Glass Door Display	1 unit	New	767.00	15	\$0.00	93%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Miscellaneous	Refrigeration	Open Display Case	1 unit	New	1,438.00	10	\$0.00	93%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Miscellaneous	Refrigeration	Icemaker	1 unit	New	443.88	9	\$1,073.62	54%	at stock turnover	\$0.31	475.63	477.66	ENERGY STAR
Miscellaneous	Refrigeration	Vending Machine	1 unit	New	81.00	10	\$42.74	54%	at stock turnover	\$0.06	182.78	182.78	EIA 2011-2012 Ref. Case
Miscellaneous	Food Preparation	Oven	1 unit	New	15,104.75	10	\$1,087.12	79%	at stock turnover	\$0.01	959.62	959.62	RTF Workbook
Miscellaneous	Food Preparation	Fryer	1 unit	New	2,881.11	10	\$782.02	92%	at stock turnover	\$0.03	209.26	209.26	RTF Workbook
Miscellaneous	Food Preparation	Dishwasher	1 unit	New	1,348.33	15	\$564.57	24%	at stock turnover	\$0.04	15.87	15.87	ENERGY STAR
Miscellaneous	Food Preparation	Hot Food Container	1 unit	New	802.23	20	\$490.95	24%	at stock turnover	\$0.04	26.44	26.44	RTF Workbook
Miscellaneous	Food Preparation	Steamer	1 unit	New	66,188.82	9	\$837.45	24%	at stock turnover	\$0.00	280.18	280.18	RTF Workbook
Miscellaneous	Office Equipment	Desktop Computer	1 unit	New	123.52	5	\$0.01	125%	at stock turnover	\$0.00	2,234.40	2,234.40	7th Power Plan
Miscellaneous	Office Equipment	Laptop	1 unit	New	36.86	4	\$0.01	125%	at stock turnover	\$0.00	295.97	295.97	7th Power Plan
Miscellaneous	Office Equipment	Monitor	1 unit	New	30.65	5	\$0.01	125%	at stock turnover	\$0.00	139.89	139.89	7th Power Plan
Miscellaneous	Office Equipment	Server	1 unit	New	74.10	4	\$0.01	125%	at stock turnover	\$0.00	933.75	933.75	AEG Research
Miscellaneous	Office Equipment	Printer/Copier/Fax	1 unit	New	223.00	6	\$0.01	125%	at stock turnover	\$0.00	64.27	64.27	ENERGY STAR
Miscellaneous	Office Equipment	POS Terminal	1 unit	New	123.52	5	\$0.01	44%	at stock turnover	\$0.00	165.93	165.93	7th Power Plan
Miscellaneous	Miscellaneous	Non-HVAC Motors	1 unit	New	0.00	15	\$0.00	107%	at stock turnover	\$0.00	0.00	0.00	N/A
Miscellaneous	Miscellaneous	Pool Pump	1 unit	New	1,432.30	10	\$246.30	0%	at stock turnover	\$0.02	15.60	15.60	Southern California Edison
Miscellaneous	Miscellaneous	Pool Heater	1 unit	New	15,277.63	15	\$3,546.07	0%	at stock turnover	\$0.02	6.91	6.91	AEG Research

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Miscellaneous	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Large Office	Cooling	Insulation - Ceiling	sqft roof	Existing	0.09	45	\$1.28	15%	35%	\$0.05	346.57	392.49	Building Energy Simulation Tool
Large Office	Heating	Insulation - Ceiling	sqft roof	Existing	0.76	45	\$1.28	15%	35%	\$0.05	1,265.56	1,318.85	Building Energy Simulation Tool
Large Office	Ventilation	Insulation - Ceiling	sqft roof	Existing	0.45	45	\$1.28	15%	35%	\$0.05	1,764.01	2,057.22	Building Energy Simulation Tool
Large Office	Cooling	Insulation - Ducting	sqft duct	Existing	0.17	20	\$0.84	15%	35%	\$0.00	904.63	1,034.31	Building Energy Simulation Tool
Large Office	Heating	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.84	15%	35%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Large Office	Ventilation	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.84	15%	35%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Large Office	Cooling	Building Shell - Cool Roofs	sqft roof	Existing	0.66	20	\$0.78	45%	50%	\$1.68	630.25	665.82	Building Energy Simulation Tool
Large Office	Heating	Building Shell - Cool Roofs	sqft roof	Existing	-0.40	20	\$0.78	45%	50%	\$1.68	-173.18	-174.33	Building Energy Simulation Tool
Large Office	Ventilation	Building Shell - Cool Roofs	sqft roof	Existing	-0.24	20	\$0.78	45%	50%	\$1.68	-241.79	-270.18	Building Energy Simulation Tool
Large Office	Cooling	Insulation - Wall Cavity	sqft wall	Existing	-0.35	45	\$0.78	15%	35%	\$0.03	-1,145.24	-1,211.52	Building Energy Simulation Tool
Large Office	Heating	Insulation - Wall Cavity	sqft wall	Existing	1.26	45	\$0.78	15%	35%	\$0.03	1,844.73	1,855.03	Building Energy Simulation Tool
Large Office	Ventilation	Insulation - Wall Cavity	sqft wall	Existing	0.74	45	\$0.78	15%	35%	\$0.03	2,575.54	2,874.94	Building Energy Simulation Tool
Large Office	Cooling	HVAC - Duct Repair and Sealing	tonCool	Existing	6.61	18	\$0.57	15%	50%	\$10.00	353.93	414.80	Building Energy Simulation Tool
Large Office	Heating	HVAC - Duct Repair and Sealing	tonCool	Existing	-6.28	18	\$0.57	15%	50%	\$10.00	-152.81	-167.04	Building Energy Simulation Tool
Large Office	Ventilation	HVAC - Duct Repair and Sealing	tonCool	Existing	-3.91	18	\$0.57	15%	50%	\$10.00	-226.97	-271.08	Building Energy Simulation Tool
Large Office	Cooling	Windows - High Efficiency Glazing	sqft window	Existing	7.59	30	\$35.93	48%	48%	\$0.07	0.00	0.00	7th Power Plan
Large Office	Heating	Windows - High Efficiency Glazing	sqft window	Existing	13.10	30	\$35.93	48%	48%	\$0.07	0.00	0.00	7th Power Plan
Large Office	Ventilation	Windows - High Efficiency Glazing	sqft window	Existing	4.70	30	\$35.93	48%	48%	\$0.07	0.00	0.00	7th Power Plan

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Large Office	Cooling	Chiller - Chilled Water Reset	ChillCtrl	Existing	4,335.21	10	\$884.85	15%	75%	\$0.02	740.51	812.42	AEG-BEST
Large Office	Cooling	Chiller - Chilled Water Variable-Flow System	HP cool	Existing	525.44	15	\$332.55	15%	75%	\$0.05	12,473.64	13,708.43	AEG-BEST
Large Office	Cooling	Chiller - Variable Speed Fans	HP fan	Existing	1,130.06	15	\$208.36	15%	75%	\$0.01	2,690.71	2,933.76	New Jersey TRM
Large Office	Cooling	Water-Cooled Chiller - Condenser Water Reset	ChillCtrl	Existing	33,701.83	10	\$884.85	15%	75%	\$0.00	2,186.02	2,401.85	AEG-BEST
Large Office	Cooling	HVAC - Economizer	HP cool	Existing	144.54	10	\$168.42	18%	75%	\$0.11	10,425.48	12,151.82	AEG-BEST
Large Office	Heating	Space Heating - Heat Recovery Ventilator	CFM	Existing	2.81	14	\$5.08	3%	75%	\$0.15	4,969.01	5,356.63	7th Power Plan
Large Office	Ventilation	Ventilation - ECM on VAV Boxes	sqft	Existing	0.49	18	\$0.25	15%	20%	\$0.04	1,470.76	1,660.62	7th Power Plan
Large Office	Ventilation	Ventilation - Variable Speed Control	sqft	Existing	0.04	15	\$181.39	13%	50%	\$305.78	996.90	1,278.29	AEG-BEST
Large Office	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.02	15	\$0.25	15%	75%	\$0.75	912.86	1,164.95	7th Power Plan
Large Office	Cooling	Destratification Fans (HVLS)	Strat Fan	Existing	4,459.41	15	\$7,270.90	15%	30%	\$0.05	3,519.61	4,069.03	AEG Research
Large Office	Heating	Destratification Fans (HVLS)	Strat Fan	Existing	7,296.54	15	\$7,270.90	15%	30%	\$0.05	2,598.91	2,720.25	AEG Research
Large Office	Cooling	RTU - Maintenance	tonCool	Existing	64.13	3	\$35.00	15%	45%	\$0.13	1,997.91	2,427.82	AEG Research
Large Office	Cooling	RTU - Advanced Controls	sqft	Existing	0.10	15	\$0.07	15%	45%	\$0.05	1,029.71	1,111.21	7th Power Plan
Large Office	Cooling	RTU - Evaporative Precooler	tonCool	Existing	125.79	15	\$681.62	15%	75%	\$0.37	6,814.48	7,514.81	AEG Research
Large Office	Cooling	Ductless Mini Split Heat Pump	tonCool	Existing	290.50	15	\$3,359.26	15%	25%	\$0.45	145.47	182.19	7th Power Plan
Large Office	Heating	Ductless Mini Split Heat Pump	tonCool	Existing	231.09	15	\$3,359.26	15%	25%	\$0.45	1,344.81	1,483.20	7th Power Plan
Large Office	Cooling	Thermostat - WiFi/Interactive	sqft	Existing	0.57	5	\$0.66	30%	40%	\$0.08	3,164.90	3,587.56	7th Power Plan
Large Office	Heating	Thermostat - WiFi/Interactive	sqft	Existing	0.47	5	\$0.66	30%	40%	\$0.08	1,166.67	1,254.66	7th Power Plan
Large Office	Ventilation	Thermostat - WiFi/Interactive	sqft	Existing	0.30	5	\$0.66	30%	40%	\$0.08	1,731.54	2,036.92	7th Power Plan
Large Office	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	Existing	86.22	10	\$8.35	25%	65%	\$0.01	226.80	405.62	Illinois TRM
Large Office	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	Existing	89.08	10	\$11.64	25%	65%	\$0.01	116.60	210.83	7th Power Plan

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Large Office	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	Existing	57.35	15	\$36.75	15%	25%	\$0.03	31.05	48.85	Hawaii TRM
Large Office	Water Heating	Water Heater - Pipe Insulation	PipeFeet	Existing	266.41	15	\$14.88	16%	75%	\$0.00	430.66	739.95	AEG-BEST
Large Office	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	Existing	55.81	4	\$144.04	25%	65%	\$0.33	139.18	262.84	7th Power Plan
Large Office	Water Heating	Water Heater - Thermostat Setback	WHunits	Existing	58.19	2	\$5.00	15%	75%	\$0.02	206.97	382.02	Illinois TRM
Large Office	Water Heating	Water Heater - Solar System	PipeFeet	Existing	900.04	20	\$215.28	1%	30%	\$0.01	700.00	1,245.96	AEG-BEST
Large Office	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.30	15	\$0.35	3%	23%	\$0.07	4,424.86	5,643.82	7th Power Plan
Large Office	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.41	15	\$0.58	3%	23%	\$0.08	5,967.69	7,775.99	7th Power Plan
Large Office	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	Existing	149.98	15	\$54.41	1%	3%	\$0.02	132.15	198.58	7th Power Plan
Large Office	Interior Lighting	Interior Lighting - Timeclocks and Timers	occ sens	Existing	0.00	8	\$111.67	7%	15%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Large Office	Interior Lighting	Interior Lighting - Skylights	1000 sqft	Existing	0.00	15	\$1,006.35	15%	25%	\$0.00	0.00	0.00	AEG Research
Large Office	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	1000 sqft	Existing	201.71	16	\$1,807.69	5%	15%	\$0.49	1,148.63	1,848.15	7th Power Plan
Large Office	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	Existing	1,962.27	11	\$30.80	15%	50%	\$0.00	4,185.60	6,009.06	Illinois TRM
Large Office	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	ELtg Watts	Existing	1.16	8	\$0.63	15%	25%	\$0.05	2,828.87	4,429.66	7th Power Plan
Large Office	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	Existing	70.19	8	\$55.10	15%	25%	\$0.07	1,385.04	2,277.34	Pacific Gas and Electric Research
Large Office	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	Existing	86.16	7	\$3,400.00	15%	30%	\$3.70	2,530.59	4,226.45	AEG Research
Large Office	Refrigeration	Refrigeration - Anti-Sweat Heater	Fridge Feet	Existing	11.13	8	\$48.18	0%	0%	\$0.52	0.00	0.00	7th Power Plan
Large Office	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	Existing	13.04	4	\$10.44	0%	0%	\$0.17	0.00	0.00	Michigan Energy Measures Database
Large Office	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	Existing	106.13	16	\$165.20	0%	0%	\$0.12	0.00	0.00	7th Power Plan
Large Office	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	Existing	19.14	15	\$335.85	0%	0%	\$1.38	0.00	0.00	7th Power Plan

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Large Office	Refrigeration	Refrigeration - Strip Curtain	Walkin Door	Existing	16.42	2	\$10.41	0%	0%	\$0.26	0.00	0.00	7th Power Plan
Large Office	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	Existing	0.30	15	\$45.43	0%	0%	\$11.84	0.00	0.00	Annual Energy Outlook, 2015
Large Office	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	Existing	6.24	15	\$313.82	0%	0%	\$3.94	0.00	0.00	Annual Energy Outlook, 2015
Large Office	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	Existing	71.29	10	\$506.05	0%	0%	\$0.73	0.00	0.00	Vermont TRM
Large Office	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	Existing	6.65	6	\$45.41	0%	0%	\$1.04	0.00	0.00	7th Power Plan
Large Office	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	Existing	0.54	8	\$3.72	0%	0%	\$0.84	0.00	0.00	7th Power Plan
Large Office	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	Existing	110.87	5	\$45.85	0%	0%	\$0.07	0.00	0.00	Illinois TRM
Large Office	Refrigeration	Grocery - ECMs for Display Cases	Fridge Case	Existing	27.57	16	\$165.20	0%	0%	\$0.45	0.00	0.00	7th Power Plan
Large Office	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	Existing	1,267.09	5	\$187.94	25%	75%	\$0.03	250.41	259.98	Illinois TRM
Large Office	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	Existing	4,002.83	18	\$8,526.67	25%	50%	\$0.14	2,403.34	2,770.56	7th Power Plan
Large Office	Office Equipment	Office Equipment - Smart Power Strips	Smart Strip	Existing	110.60	4	\$41.63	10%	50%	\$0.08	6,595.31	6,432.40	7th Power Plan
Large Office	Cooling	Lodging - Guest Room Controls	LodgUnit	Existing	238.79	15	\$260.00	0%	0%	\$0.15	0.00	0.00	AEG-BEST
Large Office	Heating	Lodging - Guest Room Controls	LodgUnit	Existing	-110.69	15	\$260.00	0%	0%	\$0.15	0.00	0.00	AEG-BEST
Large Office	Office Equipment	Data Center - Best Practice Measures	sqft	Existing	0.03	5	\$0.00	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Office	Cooling	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Office	Ventilation	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Office	Interior Lighting	Data Center - Commercially Available Measures	sqft	Existing	0.02	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Office	Office Equipment	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Office	Cooling	Data Center - Cutting Edge Measures	sqft	Existing	0.05	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx

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Large Office	Office Equipment	Data Center - Cutting Edge Measures	sqft	Existing	0.00	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Office	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	Existing	6,919.11	18	\$4,092.80	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Large Office	Miscellaneous	Pool Pump - Timer	perBldg	Existing	0.00	10	\$85.22	15%	75%	\$0.00	0.00	0.00	Ontario Power TRM
Large Office	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	Existing	6,137.83	6	\$35.93	1%	3%	\$0.00	0.00	354.95	7th Power Plan
Large Office	Cooling	Advanced New Construction Designs	sqft	Existing	0.75	25	\$4.11	0%	0%	\$0.06	0.00	0.00	AEG Research
Large Office	Heating	Advanced New Construction Designs	sqft	Existing	0.83	25	\$4.11	0%	0%	\$0.06	0.00	0.00	AEG Research
Large Office	Ventilation	Advanced New Construction Designs	sqft	Existing	0.42	25	\$4.11	0%	0%	\$0.06	0.00	0.00	AEG Research
Large Office	Water Heating	Advanced New Construction Designs	sqft	Existing	0.13	25	\$4.11	0%	0%	\$0.06	0.00	0.00	AEG Research
Large Office	Interior Lighting	Advanced New Construction Designs	sqft	Existing	0.69	25	\$4.11	0%	0%	\$0.06	0.00	0.00	AEG Research
Large Office	Exterior Lighting	Advanced New Construction Designs	sqft	Existing	0.31	25	\$4.11	0%	0%	\$0.06	0.00	0.00	AEG Research
Large Office	Cooling	Strategic Energy Management	sqft	Existing	0.18	3	\$0.17	3%	14%	\$0.01	1,190.53	1,372.16	AEG Research
Large Office	Heating	Strategic Energy Management	sqft	Existing	0.15	3	\$0.17	3%	14%	\$0.01	453.87	473.63	AEG Research
Large Office	Ventilation	Strategic Energy Management	sqft	Existing	0.09	3	\$0.17	3%	14%	\$0.01	626.17	765.85	AEG Research
Large Office	Water Heating	Strategic Energy Management	sqft	Existing	0.02	3	\$0.17	3%	14%	\$0.01	57.52	108.29	AEG Research
Large Office	Interior Lighting	Strategic Energy Management	sqft	Existing	0.10	3	\$0.17	3%	14%	\$0.01	640.59	962.22	AEG Research
Large Office	Exterior Lighting	Strategic Energy Management	sqft	Existing	0.04	3	\$0.17	3%	14%	\$0.01	284.27	465.94	AEG Research
Large Office	Refrigeration	Strategic Energy Management	sqft	Existing	0.01	3	\$0.17	3%	14%	\$0.01	48.21	56.80	AEG Research
Large Office	Office Equipment	Strategic Energy Management	sqft	Existing	0.13	3	\$0.17	3%	14%	\$0.01	1,026.78	998.39	AEG Research
Large Office	Cooling	Commissioning	sqft	Existing	0.25	3	\$0.40	0%	0%	\$0.02	0.00	0.00	AEG Research
Large Office	Heating	Commissioning	sqft	Existing	0.21	3	\$0.40	0%	0%	\$0.02	0.00	0.00	AEG Research
Large Office	Ventilation	Commissioning	sqft	Existing	0.12	3	\$0.40	0%	0%	\$0.02	0.00	0.00	AEG Research

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Large Office	Water Heating	Commissioning	sqft	Existing	0.01	3	\$0.40	0%	0%	\$0.02	0.00	0.00	AEG Research
Large Office	Interior Lighting	Commissioning	sqft	Existing	0.11	3	\$0.40	0%	0%	\$0.02	0.00	0.00	AEG Research
Large Office	Exterior Lighting	Commissioning	sqft	Existing	0.05	3	\$0.40	0%	0%	\$0.02	0.00	0.00	AEG Research
Large Office	Refrigeration	Commissioning	sqft	Existing	0.02	3	\$0.40	0%	0%	\$0.02	0.00	0.00	AEG Research
Large Office	Cooling	Retrocommissioning	sqft	Existing	0.25	3	\$0.26	11%	59%	\$0.02	7,430.14	8,404.07	AEG Research
Large Office	Heating	Retrocommissioning	sqft	Existing	0.21	3	\$0.26	11%	59%	\$0.02	2,832.65	2,901.49	AEG Research
Large Office	Ventilation	Retrocommissioning	sqft	Existing	0.12	3	\$0.26	11%	59%	\$0.02	3,907.92	4,690.28	AEG Research
Large Office	Water Heating	Retrocommissioning	sqft	Existing	0.01	3	\$0.26	11%	59%	\$0.02	117.09	219.02	AEG Research
Large Office	Interior Lighting	Retrocommissioning	sqft	Existing	0.11	3	\$0.26	11%	59%	\$0.02	3,313.42	4,898.41	AEG Research
Large Office	Exterior Lighting	Retrocommissioning	sqft	Existing	0.05	3	\$0.26	11%	59%	\$0.02	1,470.35	2,371.72	AEG Research
Large Office	Refrigeration	Retrocommissioning	sqft	Existing	0.02	3	\$0.26	11%	59%	\$0.02	512.78	585.09	AEG Research
Large Office	Interior Lighting	Fruit Storage - Lighting Controls	sqft	Existing	0.08	10	\$0.09	0%	0%	\$0.08	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Office	Refrigeration	Fruit Storage Refrigeration Retrofit	sqft	Existing	0.05	10	\$1.09	0%	0%	\$2.31	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Office	Refrigeration	Fruit Storage Refrigeration Tuneup	sqft	Existing	0.01	3	\$0.23	0%	0%	\$5.11	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Office	Refrigeration	Fruit Storage Retrofit - CO2 Scrub	sqft	Existing	0.02	10	\$3.13	0%	0%	\$13.69	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Office	Refrigeration	Fruit Storage Retrofit - Membrane	sqft	Existing	0.00	10	\$0.68	0%	0%	\$14.86	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Office	Cooling	Insulation - Ceiling	sqft roof	New	0.00	45	\$1.28	15%	50%	\$0.15	0.00	0.00	Building Energy Simulation Tool
Large Office	Heating	Insulation - Ceiling	sqft roof	New	0.28	45	\$1.28	15%	50%	\$0.15	433.50	431.95	Building Energy Simulation Tool
Large Office	Ventilation	Insulation - Ceiling	sqft roof	New	0.14	45	\$1.28	15%	50%	\$0.15	562.27	586.48	Building Energy Simulation Tool
Large Office	Cooling	Insulation - Ducting	sqft duct	New	0.23	20	\$0.84	15%	50%	\$0.00	1,400.42	1,420.46	Building Energy Simulation Tool
Large Office	Heating	Insulation - Ducting	sqft duct	New	0.00	20	\$0.84	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool

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Large Office	Ventilation	Insulation - Ducting	sqft duct	New	0.00	20	\$0.84	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Large Office	Cooling	Building Shell - Cool Roofs	sqft roof	New	0.08	20	\$0.78	45%	50%	\$10.00	43.66	45.23	Building Energy Simulation Tool
Large Office	Heating	Building Shell - Cool Roofs	sqft roof	New	-0.14	20	\$0.78	45%	50%	\$10.00	-30.40	-30.62	Building Energy Simulation Tool
Large Office	Ventilation	Building Shell - Cool Roofs	sqft roof	New	-0.07	20	\$0.78	45%	50%	\$10.00	-39.58	-41.74	Building Energy Simulation Tool
Large Office	Cooling	Insulation - Wall Cavity	sqft wall	New	-0.01	45	\$0.78	15%	50%	\$0.10	-17.16	-17.58	Building Energy Simulation Tool
Large Office	Heating	Insulation - Wall Cavity	sqft wall	New	0.28	45	\$0.78	15%	50%	\$0.10	363.93	364.45	Building Energy Simulation Tool
Large Office	Ventilation	Insulation - Wall Cavity	sqft wall	New	0.14	45	\$0.78	15%	50%	\$0.10	468.48	486.41	Building Energy Simulation Tool
Large Office	Cooling	HVAC - Duct Repair and Sealing	tonCool	New	17.34	18	\$0.57	15%	35%	\$0.00	316.21	324.11	Building Energy Simulation Tool
Large Office	Heating	HVAC - Duct Repair and Sealing	tonCool	New	8.84	18	\$0.57	15%	35%	\$0.00	62.15	62.32	Building Energy Simulation Tool
Large Office	Ventilation	HVAC - Duct Repair and Sealing	tonCool	New	4.36	18	\$0.57	15%	35%	\$0.00	80.00	83.34	Building Energy Simulation Tool
Large Office	Cooling	Windows - High Efficiency Glazing	sqft window	New	5.57	30	\$35.93	66%	66%	\$0.09	0.00	0.00	7th Power Plan
Large Office	Heating	Windows - High Efficiency Glazing	sqft window	New	13.54	30	\$35.93	66%	66%	\$0.09	0.00	0.00	7th Power Plan
Large Office	Ventilation	Windows - High Efficiency Glazing	sqft window	New	3.93	30	\$35.93	66%	66%	\$0.09	0.00	0.00	7th Power Plan
Large Office	Cooling	Chiller - Chilled Water Reset	ChillCtrl	New	3,440.59	10	\$884.85	15%	75%	\$0.02	154.42	163.38	AEG-BEST
Large Office	Cooling	Chiller - Chilled Water Variable-Flow System	HP cool	New	413.80	15	\$332.55	15%	75%	\$0.06	3,278.46	3,439.38	AEG-BEST
Large Office	Cooling	Chiller - Variable Speed Fans	HP fan	New	893.30	15	\$208.36	15%	75%	\$0.02	704.03	739.77	New Jersey TRM
Large Office	Cooling	Water-Cooled Chiller - Condenser Water Reset	ChillCtrl	New	32,530.42	10	\$884.85	15%	75%	\$0.00	555.31	587.75	AEG-BEST
Large Office	Cooling	HVAC - Economizer	HP cool	New	103.19	10	\$168.42	18%	75%	\$0.15	2,009.00	2,115.19	AEG-BEST
Large Office	Heating	Space Heating - Heat Recovery Ventilator	CFM	New	2.82	14	\$5.08	6%	75%	\$0.15	1,367.28	1,369.51	7th Power Plan

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Large Office	Ventilation	Ventilation - ECM on VAV Boxes	sqft	New	0.43	18	\$0.25	15%	20%	\$0.04	684.87	713.66	7th Power Plan
Large Office	Ventilation	Ventilation - Variable Speed Control	sqft	New	0.04	15	\$181.39	19%	50%	\$322.07	241.38	266.29	AEG-BEST
Large Office	Ventilation	Ventilation - Demand Controlled	sqft	New	0.02	15	\$0.25	15%	75%	\$0.79	263.73	291.11	7th Power Plan
Large Office	Cooling	Destratification Fans (HVLS)	Strat Fan	New	3,170.17	15	\$7,270.90	15%	30%	\$0.06	853.79	892.08	AEG Research
Large Office	Heating	Destratification Fans (HVLS)	Strat Fan	New	7,174.91	15	\$7,270.90	15%	30%	\$0.06	739.26	741.35	AEG Research
Large Office	Cooling	RTU - Maintenance	tonCool	New	83.72	3	\$35.00	15%	45%	\$0.11	219.13	241.18	AEG Research
Large Office	Cooling	RTU - Advanced Controls	sqft	New	0.13	15	\$0.07	15%	45%	\$0.04	698.15	718.97	7th Power Plan
Large Office	Cooling	RTU - Evaporative Precooler	tonCool	New	162.33	15	\$681.62	15%	75%	\$0.29	6,132.40	6,201.74	AEG Research
Large Office	Cooling	Ductless Mini Split Heat Pump	tonCool	New	363.13	15	\$3,359.26	15%	25%	\$0.39	79.00	84.95	7th Power Plan
Large Office	Heating	Ductless Mini Split Heat Pump	tonCool	New	245.98	15	\$3,359.26	15%	25%	\$0.39	522.60	532.41	7th Power Plan
Large Office	Cooling	Thermostat - WiFi/Interactive	sqft	New	0.42	5	\$0.66	30%	40%	\$0.09	165.55	178.37	7th Power Plan
Large Office	Heating	Thermostat - WiFi/Interactive	sqft	New	0.49	5	\$0.66	30%	40%	\$0.09	73.84	74.28	7th Power Plan
Large Office	Ventilation	Thermostat - WiFi/Interactive	sqft	New	0.25	5	\$0.66	30%	40%	\$0.09	95.77	104.78	7th Power Plan
Large Office	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	New	23.07	10	\$8.35	25%	65%	\$0.02	43.09	68.93	Illinois TRM
Large Office	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	New	23.97	10	\$11.64	25%	65%	\$0.03	22.48	35.86	7th Power Plan
Large Office	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	New	49.06	15	\$36.75	15%	25%	\$0.03	13.66	17.42	Hawaii TRM
Large Office	Water Heating	Water Heater - Pipe Insulation	PipeFeet	New	216.32	15	\$14.88	1%	75%	\$0.00	148.90	221.79	AEG-BEST
Large Office	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	New	15.79	4	\$144.04	25%	65%	\$0.97	11.85	20.98	7th Power Plan
Large Office	Water Heating	Water Heater - Thermostat Setback	WHunits	New	49.42	2	\$5.00	15%	75%	\$0.02	6.45	11.75	Illinois TRM
Large Office	Water Heating	Water Heater - Solar System	PipeFeet	New	753.11	20	\$215.28	1%	30%	\$0.01	209.29	309.30	AEG-BEST
Large Office	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.29	15	\$0.35	11%	23%	\$0.07	2,354.77	2,797.20	7th Power Plan

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Large Office	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.39	15	\$0.58	11%	23%	\$0.08	3,237.70	3,865.16	7th Power Plan
Large Office	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	New	140.23	15	\$54.41	1%	3%	\$0.02	32.02	43.64	7th Power Plan
Large Office	Interior Lighting	Interior Lighting - Timeclocks and Timers	occ sens	New	0.00	8	\$111.67	7%	15%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Large Office	Interior Lighting	Interior Lighting - Skylights	1000 sqft	New	0.00	15	\$1,006.35	18%	25%	\$0.00	0.00	0.00	AEG Research
Large Office	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	1000 sqft	New	176.88	16	\$1,807.69	5%	15%	\$0.51	334.99	449.41	7th Power Plan
Large Office	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	New	1,685.61	11	\$30.80	15%	50%	\$0.00	937.72	1,242.67	Illinois TRM
Large Office	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	ELtg Watts	New	0.95	8	\$0.63	15%	25%	\$0.05	479.07	736.55	7th Power Plan
Large Office	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	New	59.69	8	\$55.10	15%	25%	\$0.07	252.06	384.60	Pacific Gas and Electric Research
Large Office	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	New	72.89	7	\$3,400.00	15%	30%	\$3.68	397.21	633.30	AEG Research
Large Office	Refrigeration	Refrigeration - Anti-Sweat Heater	Fridge Feet	New	8.97	8	\$48.18	0%	0%	\$0.68	0.00	0.00	7th Power Plan
Large Office	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	New	10.72	4	\$10.44	0%	0%	\$0.22	0.00	0.00	Michigan Energy Measures Database
Large Office	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	New	92.67	16	\$165.20	0%	0%	\$0.14	0.00	0.00	7th Power Plan
Large Office	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	New	18.65	15	\$335.85	0%	0%	\$1.47	0.00	0.00	7th Power Plan
Large Office	Refrigeration	Refrigeration - Strip Curtain	Walkin Door	New	15.25	2	\$10.41	0%	0%	\$0.29	0.00	0.00	7th Power Plan
Large Office	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBtuh	New	0.29	15	\$45.43	0%	0%	\$12.66	0.00	0.00	Annual Energy Outlook, 2015
Large Office	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	New	6.08	15	\$313.82	0%	0%	\$4.22	0.00	0.00	Annual Energy Outlook, 2015
Large Office	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	New	62.25	10	\$506.05	0%	0%	\$0.87	0.00	0.00	Vermont TRM
Large Office	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	New	6.36	6	\$45.41	0%	0%	\$1.13	0.00	0.00	7th Power Plan
Large Office	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	New	0.51	8	\$3.72	0%	0%	\$0.91	0.00	0.00	7th Power Plan

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Large Office	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	New	108.33	5	\$45.85	0%	0%	\$0.08	0.00	0.00	Illinois TRM
Large Office	Refrigeration	Grocery - ECMs for Display Cases	Fridge Case	New	26.35	16	\$165.20	0%	0%	\$0.49	0.00	0.00	7th Power Plan
Large Office	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	New	1,241.81	5	\$187.94	25%	75%	\$0.03	32.06	32.44	Illinois TRM
Large Office	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	New	3,600.87	18	\$8,526.67	25%	50%	\$0.15	1,167.09	1,216.88	7th Power Plan
Large Office	Office Equipment	Office Equipment - Smart Power Strips	Smart Strip	New	134.56	4	\$41.63	10%	50%	\$0.06	636.15	610.62	7th Power Plan
Large Office	Cooling	Lodging - Guest Room Controls	LodgUnit	New	281.00	15	\$260.00	0%	0%	\$0.10	0.00	0.00	AEG-BEST
Large Office	Heating	Lodging - Guest Room Controls	LodgUnit	New	-110.26	15	\$260.00	0%	0%	\$0.10	0.00	0.00	AEG-BEST
Large Office	Office Equipment	Data Center - Best Practice Measures	sqft	New	0.03	5	\$0.00	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Office	Cooling	Data Center - Commercially Available Measures	sqft	New	0.01	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Office	Ventilation	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Office	Interior Lighting	Data Center - Commercially Available Measures	sqft	New	0.02	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Office	Office Equipment	Data Center - Commercially Available Measures	sqft	New	0.01	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Office	Cooling	Data Center - Cutting Edge Measures	sqft	New	0.04	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Office	Office Equipment	Data Center - Cutting Edge Measures	sqft	New	0.00	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Office	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	New	6,085.21	18	\$4,092.80	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Large Office	Miscellaneous	Pool Pump - Timer	perBldg	New	0.00	10	\$85.22	15%	75%	\$0.00	0.00	0.00	Ontario Power TRM
Large Office	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	New	2,045.94	6	\$35.93	1%	3%	\$0.00	0.00	29.04	7th Power Plan
Large Office	Cooling	Advanced New Construction Designs	sqft	New	0.77	25	\$4.11	10%	30%	\$0.07	5,870.07	5,983.56	AEG Research
Large Office	Heating	Advanced New Construction Designs	sqft	New	0.91	25	\$4.11	10%	30%	\$0.07	2,688.92	2,677.83	AEG Research

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Large Office	Ventilation	Advanced New Construction Designs	sqft	New	0.46	25	\$4.11	10%	30%	\$0.07	3,487.69	3,651.36	AEG Research
Large Office	Water Heating	Advanced New Construction Designs	sqft	New	0.11	25	\$4.11	10%	30%	\$0.07	385.58	467.61	AEG Research
Large Office	Interior Lighting	Advanced New Construction Designs	sqft	New	0.58	25	\$4.11	10%	30%	\$0.07	3,875.31	4,495.30	AEG Research
Large Office	Exterior Lighting	Advanced New Construction Designs	sqft	New	0.24	25	\$4.11	10%	30%	\$0.07	1,692.65	1,994.67	AEG Research
Large Office	Cooling	Strategic Energy Management	sqft	New	0.13	3	\$0.16	3%	14%	\$0.01	51.66	56.25	AEG Research
Large Office	Heating	Strategic Energy Management	sqft	New	0.15	3	\$0.16	3%	14%	\$0.01	22.70	22.79	AEG Research
Large Office	Ventilation	Strategic Energy Management	sqft	New	0.07	3	\$0.16	3%	14%	\$0.01	29.05	31.79	AEG Research
Large Office	Water Heating	Strategic Energy Management	sqft	New	0.02	3	\$0.16	3%	14%	\$0.01	3.16	5.60	AEG Research
Large Office	Interior Lighting	Strategic Energy Management	sqft	New	0.09	3	\$0.16	3%	14%	\$0.01	33.18	51.80	AEG Research
Large Office	Exterior Lighting	Strategic Energy Management	sqft	New	0.04	3	\$0.16	3%	14%	\$0.01	13.94	24.00	AEG Research
Large Office	Refrigeration	Strategic Energy Management	sqft	New	0.01	3	\$0.16	3%	14%	\$0.01	2.97	3.18	AEG Research
Large Office	Office Equipment	Strategic Energy Management	sqft	New	0.15	3	\$0.16	3%	14%	\$0.01	62.26	60.42	AEG Research
Large Office	Cooling	Commissioning	sqft	New	0.18	3	\$0.32	11%	59%	\$0.01	312.62	341.56	AEG Research
Large Office	Heating	Commissioning	sqft	New	0.20	3	\$0.32	11%	59%	\$0.01	137.37	138.41	AEG Research
Large Office	Ventilation	Commissioning	sqft	New	0.10	3	\$0.32	11%	59%	\$0.01	175.78	193.03	AEG Research
Large Office	Water Heating	Commissioning	sqft	New	0.01	3	\$0.32	11%	59%	\$0.01	6.37	11.30	AEG Research
Large Office	Interior Lighting	Commissioning	sqft	New	0.11	3	\$0.32	11%	59%	\$0.01	167.26	261.89	AEG Research
Large Office	Exterior Lighting	Commissioning	sqft	New	0.04	3	\$0.32	11%	59%	\$0.01	70.27	121.32	AEG Research
Large Office	Refrigeration	Commissioning	sqft	New	0.02	3	\$0.32	11%	59%	\$0.01	29.95	32.32	AEG Research
Large Office	Cooling	Retrocommissioning	sqft	New	0.18	3	\$0.20	0%	0%	\$0.01	0.00	0.00	AEG Research
Large Office	Heating	Retrocommissioning	sqft	New	0.20	3	\$0.20	0%	0%	\$0.01	0.00	0.00	AEG Research
Large Office	Ventilation	Retrocommissioning	sqft	New	0.10	3	\$0.20	0%	0%	\$0.01	0.00	0.00	AEG Research

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Large Office	Water Heating	Retrocommissioning	sqft	New	0.01	3	\$0.20	0%	0%	\$0.01	0.00	0.00	AEG Research
Large Office	Interior Lighting	Retrocommissioning	sqft	New	0.11	3	\$0.20	0%	0%	\$0.01	0.00	0.00	AEG Research
Large Office	Exterior Lighting	Retrocommissioning	sqft	New	0.04	3	\$0.20	0%	0%	\$0.01	0.00	0.00	AEG Research
Large Office	Refrigeration	Retrocommissioning	sqft	New	0.02	3	\$0.20	0%	0%	\$0.01	0.00	0.00	AEG Research
Large Office	Interior Lighting	Fruit Storage - Lighting Controls	sqft	New	0.07	10	\$0.09	0%	0%	\$0.08	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Office	Refrigeration	Fruit Storage Refrigeration Retrofit	sqft	New	0.06	10	\$1.09	0%	0%	\$2.06	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Office	Refrigeration	Fruit Storage Refrigeration Tuneup	sqft	New	0.01	3	\$0.23	0%	0%	\$4.56	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Office	Refrigeration	Fruit Storage Retrofit - CO2 Scrub	sqft	New	0.03	10	\$3.13	0%	0%	\$12.21	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Office	Refrigeration	Fruit Storage Retrofit - Membrane	sqft	New	0.01	10	\$0.68	0%	0%	\$13.25	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Office	Cooling	Insulation - Ceiling	sqft roof	Existing	0.15	45	\$1.28	15%	35%	\$0.12	1,525.98	1,704.75	Building Energy Simulation Tool
Small Office	Heating	Insulation - Ceiling	sqft roof	Existing	0.30	45	\$1.28	15%	35%	\$0.12	873.03	940.87	Building Energy Simulation Tool
Small Office	Ventilation	Insulation - Ceiling	sqft roof	Existing	0.06	45	\$1.28	15%	35%	\$0.12	681.87	850.53	Building Energy Simulation Tool
Small Office	Cooling	Insulation - Ducting	sqft duct	Existing	0.34	20	\$0.84	15%	35%	\$0.00	904.13	969.67	Building Energy Simulation Tool
Small Office	Heating	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.84	15%	35%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Small Office	Ventilation	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.84	15%	35%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Small Office	Cooling	Building Shell - Cool Roofs	sqft roof	Existing	0.53	20	\$0.78	45%	50%	\$0.21	1,480.44	1,520.39	Building Energy Simulation Tool
Small Office	Heating	Building Shell - Cool Roofs	sqft roof	Existing	-0.22	20	\$0.78	45%	50%	\$0.21	-166.34	-169.71	Building Energy Simulation Tool
Small Office	Ventilation	Building Shell - Cool Roofs	sqft roof	Existing	-0.04	20	\$0.78	45%	50%	\$0.21	-126.05	-149.32	Building Energy Simulation Tool
Small Office	Cooling	Insulation - Wall Cavity	sqft wall	Existing	-0.27	45	\$0.78	15%	35%	\$0.04	-1,108.62	-1,141.69	Building Energy Simulation Tool

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Small Office	Heating	Insulation - Wall Cavity	sqft wall	Existing	1.22	45	\$0.78	15%	35%	\$0.04	1,334.14	1,359.26	Building Energy Simulation Tool
Small Office	Ventilation	Insulation - Wall Cavity	sqft wall	Existing	0.23	45	\$0.78	15%	35%	\$0.04	1,010.94	1,195.89	Building Energy Simulation Tool
Small Office	Cooling	HVAC - Duct Repair and Sealing	tonCool	Existing	5.04	18	\$0.57	15%	50%	\$10.00	261.41	293.59	Building Energy Simulation Tool
Small Office	Heating	HVAC - Duct Repair and Sealing	tonCool	Existing	-7.20	18	\$0.57	15%	50%	\$10.00	-99.92	-112.49	Building Energy Simulation Tool
Small Office	Ventilation	HVAC - Duct Repair and Sealing	tonCool	Existing	-1.46	18	\$0.57	15%	50%	\$10.00	-83.61	-105.59	Building Energy Simulation Tool
Small Office	Cooling	Windows - High Efficiency Glazing	sqft window	Existing	7.42	30	\$35.93	48%	48%	\$0.09	0.00	0.00	7th Power Plan
Small Office	Heating	Windows - High Efficiency Glazing	sqft window	Existing	13.03	30	\$35.93	48%	48%	\$0.09	0.00	0.00	7th Power Plan
Small Office	Ventilation	Windows - High Efficiency Glazing	sqft window	Existing	1.46	30	\$35.93	48%	48%	\$0.09	0.00	0.00	7th Power Plan
Small Office	Cooling	Chiller - Chilled Water Reset	ChillCtrl	Existing	0.00	10	\$884.85	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Small Office	Cooling	Chiller - Chilled Water Variable-Flow System	HP cool	Existing	0.00	15	\$332.55	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Small Office	Cooling	Chiller - Variable Speed Fans	HP fan	Existing	0.00	15	\$208.36	15%	75%	\$0.00	0.00	0.00	New Jersey TRM
Small Office	Cooling	Water-Cooled Chiller - Condenser Water Reset	ChillCtrl	Existing	0.00	10	\$884.85	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Small Office	Cooling	HVAC - Economizer	HP cool	Existing	187.14	10	\$168.42	18%	75%	\$0.09	13,218.54	14,207.27	AEG-BEST
Small Office	Heating	Space Heating - Heat Recovery Ventilator	CFM	Existing	3.64	14	\$5.08	3%	75%	\$0.12	3,763.75	4,021.09	7th Power Plan
Small Office	Ventilation	Ventilation - ECM on VAV Boxes	sqft	Existing	0.19	18	\$0.25	15%	20%	\$0.08	555.93	674.85	7th Power Plan
Small Office	Ventilation	Ventilation - Variable Speed Control	sqft	Existing	0.05	15	\$181.39	13%	25%	\$255.19	344.35	472.79	AEG-BEST
Small Office	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.01	15	\$0.25	15%	25%	\$1.72	59.72	81.93	7th Power Plan
Small Office	Cooling	Destratification Fans (HVLS)	Strat Fan	Existing	5,640.95	15	\$7,270.90	15%	15%	\$0.04	0.00	0.00	AEG Research
Small Office	Heating	Destratification Fans (HVLS)	Strat Fan	Existing	9,140.27	15	\$7,270.90	15%	15%	\$0.04	0.00	0.00	AEG Research
Small Office	Cooling	RTU - Maintenance	tonCool	Existing	80.94	3	\$35.00	15%	45%	\$0.12	3,497.92	3,881.62	AEG Research
Small Office	Cooling	RTU - Advanced Controls	sqft	Existing	0.25	15	\$0.07	15%	45%	\$0.02	3,593.52	3,679.29	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Small Office	Cooling	RTU - Evaporative Precooler	tonCool	Existing	158.45	15	\$681.62	15%	75%	\$0.32	11,915.97	12,589.43	AEG Research
Small Office	Cooling	Ductless Mini Split Heat Pump	tonCool	Existing	361.86	15	\$3,359.26	15%	75%	\$0.36	998.03	1,182.15	7th Power Plan
Small Office	Heating	Ductless Mini Split Heat Pump	tonCool	Existing	323.58	15	\$3,359.26	15%	75%	\$0.36	4,235.05	4,601.56	7th Power Plan
Small Office	Cooling	Thermostat - WiFi/Interactive	sqft	Existing	0.73	5	\$0.66	30%	40%	\$0.08	3,937.11	4,230.63	7th Power Plan
Small Office	Heating	Thermostat - WiFi/Interactive	sqft	Existing	0.61	5	\$0.66	30%	40%	\$0.08	883.69	944.34	7th Power Plan
Small Office	Ventilation	Thermostat - WiFi/Interactive	sqft	Existing	0.12	5	\$0.66	30%	40%	\$0.08	704.54	861.06	7th Power Plan
Small Office	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	Existing	16.32	10	\$8.35	25%	65%	\$0.03	132.34	239.65	Illinois TRM
Small Office	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	Existing	16.87	10	\$11.64	25%	65%	\$0.04	68.04	124.57	7th Power Plan
Small Office	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	Existing	61.01	15	\$36.75	0%	0%	\$0.03	0.00	0.00	Hawaii TRM
Small Office	Water Heating	Water Heater - Pipe Insulation	PipeFeet	Existing	51.17	15	\$14.88	16%	75%	\$0.01	256.44	440.63	AEG-BEST
Small Office	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	Existing	10.72	4	\$144.04	25%	65%	\$1.70	82.96	156.35	7th Power Plan
Small Office	Water Heating	Water Heater - Thermostat Setback	WHunits	Existing	61.91	2	\$5.00	15%	75%	\$0.02	134.44	235.80	Illinois TRM
Small Office	Water Heating	Water Heater - Solar System	PipeFeet	Existing	170.50	20	\$215.28	1%	30%	\$0.05	408.69	735.60	AEG-BEST
Small Office	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.33	15	\$0.35	3%	23%	\$0.06	4,911.24	6,203.40	7th Power Plan
Small Office	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.46	15	\$0.58	3%	23%	\$0.07	6,623.75	8,546.79	7th Power Plan
Small Office	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	Existing	100.90	15	\$54.41	1%	3%	\$0.03	146.72	217.80	7th Power Plan
Small Office	Interior Lighting	Interior Lighting - Timeclocks and Timers	occ sens	Existing	0.00	8	\$111.67	7%	15%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Small Office	Interior Lighting	Interior Lighting - Skylights	1000 sqft	Existing	0.00	15	\$1,006.35	15%	25%	\$0.00	0.00	0.00	AEG Research
Small Office	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	1000 sqft	Existing	176.50	16	\$1,807.69	5%	15%	\$0.56	985.18	1,591.87	7th Power Plan

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Small Office	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	Existing	1,707.11	11	\$30.80	15%	50%	\$0.00	3,562.70	5,159.43	Illinois TRM
Small Office	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	ELtg Watts	Existing	2.54	8	\$0.63	15%	25%	\$0.02	3,103.20	5,008.30	7th Power Plan
Small Office	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	Existing	86.76	8	\$55.10	15%	25%	\$0.06	1,569.12	2,609.07	Pacific Gas and Electric Research
Small Office	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	Existing	104.12	7	\$3,400.00	15%	30%	\$3.04	2,776.00	4,780.05	AEG Research
Small Office	Refrigeration	Refrigeration - Anti-Sweat Heater	Fridge Feet	Existing	0.00	8	\$48.18	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Small Office	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	Existing	9.04	4	\$10.44	0%	0%	\$0.24	0.00	0.00	Michigan Energy Measures Database
Small Office	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	Existing	54.37	16	\$165.20	0%	0%	\$0.23	0.00	0.00	7th Power Plan
Small Office	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	Existing	5.31	15	\$335.85	0%	0%	\$4.87	0.00	0.00	7th Power Plan
Small Office	Refrigeration	Refrigeration - Strip Curtain	Walkin Door	Existing	0.00	2	\$10.41	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Small Office	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBtuh	Existing	0.08	15	\$45.43	0%	0%	\$41.92	0.00	0.00	Annual Energy Outlook, 2015
Small Office	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	Existing	1.73	15	\$313.82	0%	0%	\$13.97	0.00	0.00	Annual Energy Outlook, 2015
Small Office	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	Existing	36.52	10	\$506.05	0%	0%	\$1.40	0.00	0.00	Vermont TRM
Small Office	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	Existing	0.00	6	\$45.41	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Small Office	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	Existing	0.00	8	\$3.72	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Small Office	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	Existing	0.00	5	\$45.85	0%	0%	\$0.00	0.00	0.00	Illinois TRM
Small Office	Refrigeration	Grocery - ECMs for Display Cases	Fridge Case	Existing	0.00	16	\$165.20	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Small Office	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	Existing	1,257.00	5	\$187.94	25%	75%	\$0.03	52.29	54.76	Illinois TRM
Small Office	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	Existing	1,578.52	18	\$8,526.67	25%	50%	\$0.33	928.99	1,145.29	7th Power Plan
Small Office	Office Equipment	Office Equipment - Smart Power Strips	Smart Strip	Existing	76.46	4	\$41.63	10%	50%	\$0.11	4,575.88	4,311.52	7th Power Plan

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Small Office	Cooling	Lodging - Guest Room Controls	LodgUnit	Existing	282.77	15	\$260.00	0%	0%	\$0.16	0.00	0.00	AEG-BEST
Small Office	Heating	Lodging - Guest Room Controls	LodgUnit	Existing	-151.33	15	\$260.00	0%	0%	\$0.16	0.00	0.00	AEG-BEST
Small Office	Office Equipment	Data Center - Best Practice Measures	sqft	Existing	0.06	5	\$0.00	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Office	Cooling	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Office	Ventilation	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Office	Interior Lighting	Data Center - Commercially Available Measures	sqft	Existing	0.03	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Office	Office Equipment	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Office	Cooling	Data Center - Cutting Edge Measures	sqft	Existing	0.06	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Office	Office Equipment	Data Center - Cutting Edge Measures	sqft	Existing	0.00	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Office	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	Existing	520.46	18	\$4,092.80	0%	0%	\$0.47	0.00	0.00	7th Power Plan
Small Office	Miscellaneous	Pool Pump - Timer	perBldg	Existing	0.00	10	\$85.22	15%	75%	\$0.00	0.00	0.00	Ontario Power TRM
Small Office	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	Existing	1,307.23	6	\$35.93	1%	3%	\$0.00	0.00	370.58	7th Power Plan
Small Office	Cooling	Advanced New Construction Designs	sqft	Existing	0.86	25	\$4.11	0%	0%	\$0.06	0.00	0.00	AEG Research
Small Office	Heating	Advanced New Construction Designs	sqft	Existing	1.01	25	\$4.11	0%	0%	\$0.06	0.00	0.00	AEG Research
Small Office	Ventilation	Advanced New Construction Designs	sqft	Existing	0.17	25	\$4.11	0%	0%	\$0.06	0.00	0.00	AEG Research
Small Office	Water Heating	Advanced New Construction Designs	sqft	Existing	0.12	25	\$4.11	0%	0%	\$0.06	0.00	0.00	AEG Research
Small Office	Interior Lighting	Advanced New Construction Designs	sqft	Existing	0.77	25	\$4.11	0%	0%	\$0.06	0.00	0.00	AEG Research
Small Office	Exterior Lighting	Advanced New Construction Designs	sqft	Existing	0.35	25	\$4.11	0%	0%	\$0.06	0.00	0.00	AEG Research
Small Office	Cooling	Strategic Energy Management	sqft	Existing	0.23	3	\$0.17	3%	14%	\$0.01	1,515.31	1,595.07	AEG Research

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Small Office	Heating	Strategic Energy Management	sqft	Existing	0.19	3	\$0.17	3%	14%	\$0.01	339.06	354.48	AEG Research
Small Office	Ventilation	Strategic Energy Management	sqft	Existing	0.04	3	\$0.17	3%	14%	\$0.01	256.92	328.45	AEG Research
Small Office	Water Heating	Strategic Energy Management	sqft	Existing	0.02	3	\$0.17	3%	14%	\$0.01	34.66	64.69	AEG Research
Small Office	Interior Lighting	Strategic Energy Management	sqft	Existing	0.11	3	\$0.17	3%	14%	\$0.01	730.65	1,067.45	AEG Research
Small Office	Exterior Lighting	Strategic Energy Management	sqft	Existing	0.05	3	\$0.17	3%	14%	\$0.01	303.77	521.41	AEG Research
Small Office	Refrigeration	Strategic Energy Management	sqft	Existing	0.00	3	\$0.17	3%	14%	\$0.01	6.18	8.01	AEG Research
Small Office	Office Equipment	Strategic Energy Management	sqft	Existing	0.09	3	\$0.17	3%	14%	\$0.01	712.39	669.21	AEG Research
Small Office	Cooling	Commissioning	sqft	Existing	0.31	3	\$0.45	0%	0%	\$0.02	0.00	0.00	AEG Research
Small Office	Heating	Commissioning	sqft	Existing	0.26	3	\$0.45	0%	0%	\$0.02	0.00	0.00	AEG Research
Small Office	Ventilation	Commissioning	sqft	Existing	0.05	3	\$0.45	0%	0%	\$0.02	0.00	0.00	AEG Research
Small Office	Water Heating	Commissioning	sqft	Existing	0.01	3	\$0.45	0%	0%	\$0.02	0.00	0.00	AEG Research
Small Office	Interior Lighting	Commissioning	sqft	Existing	0.13	3	\$0.45	0%	0%	\$0.02	0.00	0.00	AEG Research
Small Office	Exterior Lighting	Commissioning	sqft	Existing	0.06	3	\$0.45	0%	0%	\$0.02	0.00	0.00	AEG Research
Small Office	Refrigeration	Commissioning	sqft	Existing	0.00	3	\$0.45	0%	0%	\$0.02	0.00	0.00	AEG Research
Small Office	Cooling	Retrocommissioning	sqft	Existing	0.32	3	\$0.29	11%	59%	\$0.02	9,107.13	9,615.54	AEG Research
Small Office	Heating	Retrocommissioning	sqft	Existing	0.27	3	\$0.29	11%	59%	\$0.02	2,037.80	2,136.89	AEG Research
Small Office	Ventilation	Retrocommissioning	sqft	Existing	0.05	3	\$0.29	11%	59%	\$0.02	1,544.14	1,980.06	AEG Research
Small Office	Water Heating	Retrocommissioning	sqft	Existing	0.01	3	\$0.29	11%	59%	\$0.02	69.43	130.01	AEG Research
Small Office	Interior Lighting	Retrocommissioning	sqft	Existing	0.13	3	\$0.29	11%	59%	\$0.02	3,659.40	5,362.89	AEG Research
Small Office	Exterior Lighting	Retrocommissioning	sqft	Existing	0.06	3	\$0.29	11%	59%	\$0.02	1,571.23	2,653.80	AEG Research
Small Office	Refrigeration	Retrocommissioning	sqft	Existing	0.00	3	\$0.29	11%	59%	\$0.02	65.70	82.49	AEG Research
Small Office	Interior Lighting	Fruit Storage - Lighting Controls	sqft	Existing	0.09	10	\$0.09	0%	0%	\$0.08	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx

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Small Office	Refrigeration	Fruit Storage Refrigeration Retrofit	sqft	Existing	0.01	10	\$1.09	0%	0%	\$16.41	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Office	Refrigeration	Fruit Storage Refrigeration Tuneup	sqft	Existing	0.00	3	\$0.23	0%	0%	\$36.33	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Office	Refrigeration	Fruit Storage Retrofit - CO2 Scrub	sqft	Existing	0.00	10	\$3.13	0%	0%	\$97.28	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Office	Refrigeration	Fruit Storage Retrofit - Membrane	sqft	Existing	0.00	10	\$0.68	0%	0%	\$105.57	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Office	Cooling	Insulation - Ceiling	sqft roof	New	0.00	45	\$1.28	15%	50%	\$0.23	0.00	0.00	Building Energy Simulation Tool
Small Office	Heating	Insulation - Ceiling	sqft roof	New	0.24	45	\$1.28	15%	50%	\$0.23	693.43	698.55	Building Energy Simulation Tool
Small Office	Ventilation	Insulation - Ceiling	sqft roof	New	0.03	45	\$1.28	15%	50%	\$0.23	426.59	470.39	Building Energy Simulation Tool
Small Office	Cooling	Insulation - Ducting	sqft duct	New	0.50	20	\$0.84	15%	50%	\$0.00	1,475.62	1,487.88	Building Energy Simulation Tool
Small Office	Heating	Insulation - Ducting	sqft duct	New	0.00	20	\$0.84	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Small Office	Ventilation	Insulation - Ducting	sqft duct	New	0.00	20	\$0.84	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Small Office	Cooling	Building Shell - Cool Roofs	sqft roof	New	0.09	20	\$0.78	45%	50%	\$10.00	150.45	154.76	Building Energy Simulation Tool
Small Office	Heating	Building Shell - Cool Roofs	sqft roof	New	-0.09	20	\$0.78	45%	50%	\$10.00	-38.55	-38.87	Building Energy Simulation Tool
Small Office	Ventilation	Building Shell - Cool Roofs	sqft roof	New	-0.01	20	\$0.78	45%	50%	\$10.00	-24.28	-26.86	Building Energy Simulation Tool
Small Office	Cooling	Insulation - Wall Cavity	sqft wall	New	-0.02	45	\$0.78	15%	50%	\$1.01	-84.30	-85.05	Building Energy Simulation Tool
Small Office	Heating	Insulation - Wall Cavity	sqft wall	New	0.05	45	\$0.78	15%	50%	\$1.01	54.99	55.23	Building Energy Simulation Tool
Small Office	Ventilation	Insulation - Wall Cavity	sqft wall	New	0.01	45	\$0.78	15%	50%	\$1.01	33.83	36.88	Building Energy Simulation Tool
Small Office	Cooling	HVAC - Duct Repair and Sealing	tonCool	New	23.57	18	\$0.57	15%	35%	\$0.00	428.44	432.45	Building Energy Simulation Tool
Small Office	Heating	HVAC - Duct Repair and Sealing	tonCool	New	23.18	18	\$0.57	15%	35%	\$0.00	103.10	103.61	Building Energy Simulation Tool
Small Office	Ventilation	HVAC - Duct Repair and Sealing	tonCool	New	3.23	18	\$0.57	15%	35%	\$0.00	63.42	69.49	Building Energy Simulation Tool

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Small Office	Cooling	Windows - High Efficiency Glazing	sqft window	New	4.94	30	\$35.93	66%	66%	\$0.11	0.00	0.00	7th Power Plan
Small Office	Heating	Windows - High Efficiency Glazing	sqft window	New	12.72	30	\$35.93	66%	66%	\$0.11	0.00	0.00	7th Power Plan
Small Office	Ventilation	Windows - High Efficiency Glazing	sqft window	New	1.04	30	\$35.93	66%	66%	\$0.11	0.00	0.00	7th Power Plan
Small Office	Cooling	Chiller - Chilled Water Reset	ChillCtrl	New	0.00	10	\$884.85	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Small Office	Cooling	Chiller - Chilled Water Variable-Flow System	HP cool	New	0.00	15	\$332.55	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Small Office	Cooling	Chiller - Variable Speed Fans	HP fan	New	0.00	15	\$208.36	15%	75%	\$0.00	0.00	0.00	New Jersey TRM
Small Office	Cooling	Water-Cooled Chiller - Condenser Water Reset	ChillCtrl	New	0.00	10	\$884.85	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Small Office	Cooling	HVAC - Economizer	HP cool	New	120.72	10	\$168.42	18%	75%	\$0.14	2,318.81	2,384.32	AEG-BEST
Small Office	Heating	Space Heating - Heat Recovery Ventilator	CFM	New	3.43	14	\$5.08	6%	75%	\$0.13	1,048.68	1,055.98	7th Power Plan
Small Office	Ventilation	Ventilation - ECM on VAV Boxes	sqft	New	0.14	18	\$0.25	15%	20%	\$0.09	238.06	260.63	7th Power Plan
Small Office	Ventilation	Ventilation - Variable Speed Control	sqft	New	0.03	15	\$181.39	19%	25%	\$294.79	42.09	50.21	AEG-BEST
Small Office	Ventilation	Ventilation - Demand Controlled	sqft	New	0.01	15	\$0.25	15%	25%	\$1.98	15.35	18.31	7th Power Plan
Small Office	Cooling	Destratification Fans (HVLS)	Strat Fan	New	3,728.52	15	\$7,270.90	15%	15%	\$0.05	0.00	0.00	AEG Research
Small Office	Heating	Destratification Fans (HVLS)	Strat Fan	New	8,629.54	15	\$7,270.90	15%	15%	\$0.05	0.00	0.00	AEG Research
Small Office	Cooling	RTU - Maintenance	tonCool	New	108.89	3	\$35.00	15%	45%	\$0.09	397.59	413.31	AEG Research
Small Office	Cooling	RTU - Advanced Controls	sqft	New	0.32	15	\$0.07	15%	45%	\$0.02	2,520.67	2,553.08	7th Power Plan
Small Office	Cooling	RTU - Evaporative Precooler	tonCool	New	212.70	15	\$681.62	15%	75%	\$0.25	11,185.86	11,242.64	AEG Research
Small Office	Cooling	Ductless Mini Split Heat Pump	tonCool	New	461.70	15	\$3,359.26	15%	75%	\$0.32	575.90	613.40	7th Power Plan
Small Office	Heating	Ductless Mini Split Heat Pump	tonCool	New	335.89	15	\$3,359.26	15%	75%	\$0.32	1,601.51	1,637.51	7th Power Plan
Small Office	Cooling	Thermostat - WiFi/Interactive	sqft	New	0.48	5	\$0.66	30%	40%	\$0.10	184.18	199.47	7th Power Plan
Small Office	Heating	Thermostat - WiFi/Interactive	sqft	New	0.60	5	\$0.66	30%	40%	\$0.10	56.63	57.19	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Small Office	Ventilation	Thermostat - WiFi/Interactive	sqft	New	0.08	5	\$0.66	30%	40%	\$0.10	35.18	42.10	7th Power Plan
Small Office	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	New	13.52	10	\$8.35	25%	65%	\$0.03	26.03	41.54	Illinois TRM
Small Office	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	New	14.08	10	\$11.64	25%	65%	\$0.04	13.59	21.64	7th Power Plan
Small Office	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	New	50.52	15	\$36.75	0%	0%	\$0.03	0.00	0.00	Hawaii TRM
Small Office	Water Heating	Water Heater - Pipe Insulation	PipeFeet	New	41.55	15	\$14.88	1%	75%	\$0.01	88.67	132.08	AEG-BEST
Small Office	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	New	9.13	4	\$144.04	25%	65%	\$1.69	7.11	12.48	7th Power Plan
Small Office	Water Heating	Water Heater - Thermostat Setback	WHunits	New	50.73	2	\$5.00	15%	75%	\$0.02	3.91	7.06	Illinois TRM
Small Office	Water Heating	Water Heater - Solar System	PipeFeet	New	142.66	20	\$215.28	1%	30%	\$0.05	123.72	181.98	AEG-BEST
Small Office	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.32	15	\$0.35	11%	23%	\$0.06	2,597.74	3,080.12	7th Power Plan
Small Office	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.44	15	\$0.58	11%	23%	\$0.07	3,571.72	4,256.09	7th Power Plan
Small Office	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	New	93.87	15	\$54.41	1%	3%	\$0.03	35.29	48.11	7th Power Plan
Small Office	Interior Lighting	Interior Lighting - Timeclocks and Timers	occ sens	New	0.00	8	\$111.67	7%	15%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Small Office	Interior Lighting	Interior Lighting - Skylights	1000 sqft	New	0.00	15	\$1,006.35	18%	25%	\$0.00	0.00	0.00	AEG Research
Small Office	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	1000 sqft	New	152.10	16	\$1,807.69	5%	15%	\$0.59	285.05	381.13	7th Power Plan
Small Office	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	New	1,439.75	11	\$30.80	15%	50%	\$0.00	790.36	1,050.93	Illinois TRM
Small Office	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	ELtg Watts	New	2.03	8	\$0.63	15%	25%	\$0.02	517.54	817.31	7th Power Plan
Small Office	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fxt	New	70.35	8	\$55.10	15%	25%	\$0.06	272.37	427.11	Pacific Gas and Electric Research
Small Office	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fxt	New	86.19	7	\$3,400.00	15%	30%	\$3.06	432.50	704.46	AEG Research
Small Office	Refrigeration	Refrigeration - Anti-Sweat Heater	Fridge Feet	New	0.00	8	\$48.18	0%	0%	\$0.00	0.00	0.00	7th Power Plan

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Small Office	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	New	7.63	4	\$10.44	0%	0%	\$0.30	0.00	0.00	Michigan Energy Measures Database
Small Office	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	New	45.89	16	\$165.20	0%	0%	\$0.28	0.00	0.00	7th Power Plan
Small Office	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	New	4.93	15	\$335.85	0%	0%	\$5.52	0.00	0.00	7th Power Plan
Small Office	Refrigeration	Refrigeration - Strip Curtain	Walkin Door	New	0.00	2	\$10.41	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Small Office	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	New	0.08	15	\$45.43	0%	0%	\$47.52	0.00	0.00	Annual Energy Outlook, 2015
Small Office	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	New	1.61	15	\$313.82	0%	0%	\$15.83	0.00	0.00	Annual Energy Outlook, 2015
Small Office	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	New	30.82	10	\$506.05	0%	0%	\$1.74	0.00	0.00	Vermont TRM
Small Office	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	New	0.00	6	\$45.41	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Small Office	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	New	0.00	8	\$3.72	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Small Office	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	New	0.00	5	\$45.85	0%	0%	\$0.00	0.00	0.00	Illinois TRM
Small Office	Refrigeration	Grocery - ECMs for Display Cases	Fridge Case	New	0.00	16	\$165.20	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Small Office	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	New	1,235.90	5	\$187.94	25%	75%	\$0.03	6.73	6.84	Illinois TRM
Small Office	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	New	1,155.77	18	\$8,526.67	25%	50%	\$0.38	396.80	438.49	7th Power Plan
Small Office	Office Equipment	Office Equipment - Smart Power Strips	Smart Strip	New	91.40	4	\$41.63	10%	50%	\$0.09	427.17	403.87	7th Power Plan
Small Office	Cooling	Lodging - Guest Room Controls	LodgUnit	New	349.19	15	\$260.00	0%	0%	\$0.10	0.00	0.00	AEG-BEST
Small Office	Heating	Lodging - Guest Room Controls	LodgUnit	New	-148.53	15	\$260.00	0%	0%	\$0.10	0.00	0.00	AEG-BEST
Small Office	Office Equipment	Data Center - Best Practice Measures	sqft	New	0.06	5	\$0.00	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Office	Cooling	Data Center - Commercially Available Measures	sqft	New	0.01	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Office	Ventilation	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx

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Small Office	Interior Lighting	Data Center - Commercially Available Measures	sqft	New	0.03	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Office	Office Equipment	Data Center - Commercially Available Measures	sqft	New	0.01	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Office	Cooling	Data Center - Cutting Edge Measures	sqft	New	0.04	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Office	Office Equipment	Data Center - Cutting Edge Measures	sqft	New	0.00	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Office	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	New	383.18	18	\$4,092.80	0%	0%	\$0.54	0.00	0.00	7th Power Plan
Small Office	Miscellaneous	Pool Pump - Timer	perBldg	New	0.00	10	\$85.22	15%	75%	\$0.00	0.00	0.00	Ontario Power TRM
Small Office	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	New	1,307.23	6	\$35.93	1%	3%	\$0.00	0.00	30.32	7th Power Plan
Small Office	Cooling	Advanced New Construction Designs	sqft	New	0.90	25	\$4.11	10%	25%	\$0.06	5,055.44	5,144.77	AEG Research
Small Office	Heating	Advanced New Construction Designs	sqft	New	1.11	25	\$4.11	10%	25%	\$0.06	1,554.44	1,552.75	AEG Research
Small Office	Ventilation	Advanced New Construction Designs	sqft	New	0.16	25	\$4.11	10%	25%	\$0.06	965.62	1,058.18	AEG Research
Small Office	Water Heating	Advanced New Construction Designs	sqft	New	0.11	25	\$4.11	10%	25%	\$0.06	172.10	208.66	AEG Research
Small Office	Interior Lighting	Advanced New Construction Designs	sqft	New	0.64	25	\$4.11	10%	25%	\$0.06	3,203.35	3,703.33	AEG Research
Small Office	Exterior Lighting	Advanced New Construction Designs	sqft	New	0.27	25	\$4.11	10%	25%	\$0.06	1,371.42	1,626.19	AEG Research
Small Office	Cooling	Strategic Energy Management	sqft	New	0.15	3	\$0.14	3%	14%	\$0.01	59.18	61.47	AEG Research
Small Office	Heating	Strategic Energy Management	sqft	New	0.18	3	\$0.14	3%	14%	\$0.01	17.27	17.43	AEG Research
Small Office	Ventilation	Strategic Energy Management	sqft	New	0.02	3	\$0.14	3%	14%	\$0.01	10.62	12.86	AEG Research
Small Office	Water Heating	Strategic Energy Management	sqft	New	0.02	3	\$0.14	3%	14%	\$0.01	1.88	3.33	AEG Research
Small Office	Interior Lighting	Strategic Energy Management	sqft	New	0.10	3	\$0.14	3%	14%	\$0.01	36.57	57.15	AEG Research
Small Office	Exterior Lighting	Strategic Energy Management	sqft	New	0.04	3	\$0.14	3%	14%	\$0.01	14.99	26.84	AEG Research

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Small Office	Refrigeration	Strategic Energy Management	sqft	New	0.00	3	\$0.14	3%	14%	\$0.01	0.37	0.43	AEG Research
Small Office	Office Equipment	Strategic Energy Management	sqft	New	0.10	3	\$0.14	3%	14%	\$0.01	41.81	39.88	AEG Research
Small Office	Cooling	Commissioning	sqft	New	0.21	3	\$0.34	11%	59%	\$0.01	358.09	373.21	AEG Research
Small Office	Heating	Commissioning	sqft	New	0.25	3	\$0.34	11%	59%	\$0.01	104.49	105.86	AEG Research
Small Office	Ventilation	Commissioning	sqft	New	0.03	3	\$0.34	11%	59%	\$0.01	64.28	78.10	AEG Research
Small Office	Water Heating	Commissioning	sqft	New	0.01	3	\$0.34	11%	59%	\$0.01	3.85	6.78	AEG Research
Small Office	Interior Lighting	Commissioning	sqft	New	0.12	3	\$0.34	11%	59%	\$0.01	184.35	288.91	AEG Research
Small Office	Exterior Lighting	Commissioning	sqft	New	0.05	3	\$0.34	11%	59%	\$0.01	75.91	136.24	AEG Research
Small Office	Refrigeration	Commissioning	sqft	New	0.00	3	\$0.34	11%	59%	\$0.01	3.78	4.37	AEG Research
Small Office	Cooling	Retrocommissioning	sqft	New	0.21	3	\$0.21	0%	0%	\$0.01	0.00	0.00	AEG Research
Small Office	Heating	Retrocommissioning	sqft	New	0.24	3	\$0.21	0%	0%	\$0.01	0.00	0.00	AEG Research
Small Office	Ventilation	Retrocommissioning	sqft	New	0.03	3	\$0.21	0%	0%	\$0.01	0.00	0.00	AEG Research
Small Office	Water Heating	Retrocommissioning	sqft	New	0.01	3	\$0.21	0%	0%	\$0.01	0.00	0.00	AEG Research
Small Office	Interior Lighting	Retrocommissioning	sqft	New	0.12	3	\$0.21	0%	0%	\$0.01	0.00	0.00	AEG Research
Small Office	Exterior Lighting	Retrocommissioning	sqft	New	0.05	3	\$0.21	0%	0%	\$0.01	0.00	0.00	AEG Research
Small Office	Refrigeration	Retrocommissioning	sqft	New	0.00	3	\$0.21	0%	0%	\$0.01	0.00	0.00	AEG Research
Small Office	Interior Lighting	Fruit Storage - Lighting Controls	sqft	New	0.08	10	\$0.09	0%	0%	\$0.07	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Office	Refrigeration	Fruit Storage Refrigeration Retrofit	sqft	New	0.01	10	\$1.09	0%	0%	\$15.50	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Office	Refrigeration	Fruit Storage Refrigeration Tuneup	sqft	New	0.00	3	\$0.23	0%	0%	\$34.32	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Office	Refrigeration	Fruit Storage Retrofit - CO2 Scrub	sqft	New	0.00	10	\$3.13	0%	0%	\$91.89	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Office	Refrigeration	Fruit Storage Retrofit - Membrane	sqft	New	0.00	10	\$0.68	0%	0%	\$99.72	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Retail	Cooling	Insulation - Ceiling	sqft roof	Existing	0.00	45	\$1.28	15%	35%	\$0.05	0.00	0.00	Building Energy Simulation Tool

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Large Retail	Heating	Insulation - Ceiling	sqft roof	Existing	0.86	45	\$1.28	15%	35%	\$0.05	202.32	209.45	Building Energy Simulation Tool
Large Retail	Ventilation	Insulation - Ceiling	sqft roof	Existing	0.48	45	\$1.28	15%	35%	\$0.05	676.98	814.76	Building Energy Simulation Tool
Large Retail	Cooling	Insulation - Ducting	sqft duct	Existing	0.23	20	\$0.84	15%	35%	\$0.00	471.87	508.60	Building Energy Simulation Tool
Large Retail	Heating	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.84	15%	35%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Large Retail	Ventilation	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.84	15%	35%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Large Retail	Cooling	Building Shell - Cool Roofs	sqft roof	Existing	1.27	20	\$0.78	45%	50%	\$0.18	440.44	451.59	Building Energy Simulation Tool
Large Retail	Heating	Building Shell - Cool Roofs	sqft roof	Existing	-0.60	20	\$0.78	45%	50%	\$0.18	-35.65	-36.08	Building Energy Simulation Tool
Large Retail	Ventilation	Building Shell - Cool Roofs	sqft roof	Existing	-0.33	20	\$0.78	45%	50%	\$0.18	-120.68	-140.92	Building Energy Simulation Tool
Large Retail	Cooling	Insulation - Wall Cavity	sqft wall	Existing	-0.69	45	\$0.78	15%	35%	\$0.03	-941.23	-967.18	Building Energy Simulation Tool
Large Retail	Heating	Insulation - Wall Cavity	sqft wall	Existing	1.22	45	\$0.78	15%	35%	\$0.03	285.88	288.95	Building Energy Simulation Tool
Large Retail	Ventilation	Insulation - Wall Cavity	sqft wall	Existing	0.68	45	\$0.78	15%	35%	\$0.03	967.81	1,128.64	Building Energy Simulation Tool
Large Retail	Cooling	HVAC - Duct Repair and Sealing	tonCool	Existing	6.42	18	\$0.57	15%	25%	\$0.00	53.59	54.82	Building Energy Simulation Tool
Large Retail	Heating	HVAC - Duct Repair and Sealing	tonCool	Existing	3.97	18	\$0.57	15%	25%	\$0.00	5.64	5.76	Building Energy Simulation Tool
Large Retail	Ventilation	HVAC - Duct Repair and Sealing	tonCool	Existing	2.22	18	\$0.57	15%	25%	\$0.00	19.08	22.50	Building Energy Simulation Tool
Large Retail	Cooling	Windows - High Efficiency Glazing	sqft window	Existing	9.43	30	\$35.93	48%	48%	\$0.07	0.00	0.00	7th Power Plan
Large Retail	Heating	Windows - High Efficiency Glazing	sqft window	Existing	15.70	30	\$35.93	48%	48%	\$0.07	0.00	0.00	7th Power Plan
Large Retail	Ventilation	Windows - High Efficiency Glazing	sqft window	Existing	5.00	30	\$35.93	48%	48%	\$0.07	0.00	0.00	7th Power Plan
Large Retail	Cooling	Chiller - Chilled Water Reset	ChillCtrl	Existing	3,814.92	10	\$884.85	15%	75%	\$0.02	21.80	22.74	AEG-BEST
Large Retail	Cooling	Chiller - Chilled Water Variable-Flow System	HP cool	Existing	375.05	15	\$332.55	15%	75%	\$0.07	295.06	315.95	AEG-BEST

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Large Retail	Cooling	Chiller - Variable Speed Fans	HP fan	Existing	906.20	15	\$208.36	15%	75%	\$0.02	72.03	75.10	New Jersey TRM
Large Retail	Cooling	Water-Cooled Chiller - Condenser Water Reset	ChillCtrl	Existing	26,066.54	10	\$884.85	15%	75%	\$0.00	56.36	59.47	AEG-BEST
Large Retail	Cooling	HVAC - Economizer	HP cool	Existing	130.82	10	\$168.42	18%	75%	\$0.13	4,802.70	5,109.41	AEG-BEST
Large Retail	Heating	Space Heating - Heat Recovery Ventilator	CFM	Existing	1.24	14	\$5.08	3%	75%	\$0.34	775.55	836.91	7th Power Plan
Large Retail	Ventilation	Ventilation - ECM on VAV Boxes	sqft	Existing	0.52	18	\$0.25	15%	20%	\$0.03	552.68	651.89	7th Power Plan
Large Retail	Ventilation	Ventilation - Variable Speed Control	sqft	Existing	0.05	15	\$181.39	13%	50%	\$261.31	371.81	501.40	AEG-BEST
Large Retail	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.03	15	\$0.25	15%	75%	\$0.64	340.38	456.94	7th Power Plan
Large Retail	Cooling	Destratification Fans (HVLS)	Strat Fan	Existing	5,185.09	15	\$7,270.90	15%	30%	\$0.10	1,463.92	1,630.90	AEG Research
Large Retail	Heating	Destratification Fans (HVLS)	Strat Fan	Existing	0.17	15	\$7,270.90	15%	30%	\$0.10	0.01	0.01	AEG Research
Large Retail	Cooling	RTU - Maintenance	tonCool	Existing	56.46	3	\$35.00	15%	45%	\$0.17	1,291.43	1,423.25	AEG Research
Large Retail	Cooling	RTU - Advanced Controls	sqft	Existing	0.12	15	\$0.07	15%	45%	\$0.04	664.33	679.39	7th Power Plan
Large Retail	Cooling	RTU - Evaporative Precooler	tonCool	Existing	109.11	15	\$681.62	15%	75%	\$0.46	4,392.14	4,635.67	AEG Research
Large Retail	Cooling	Ductless Mini Split Heat Pump	tonCool	Existing	250.03	15	\$3,359.26	15%	25%	\$0.56	75.83	89.45	7th Power Plan
Large Retail	Heating	Ductless Mini Split Heat Pump	tonCool	Existing	191.32	15	\$3,359.26	15%	25%	\$0.56	189.15	204.81	7th Power Plan
Large Retail	Cooling	Thermostat - WiFi/Interactive	sqft	Existing	0.71	5	\$0.66	30%	40%	\$0.07	1,454.41	1,546.45	7th Power Plan
Large Retail	Heating	Thermostat - WiFi/Interactive	sqft	Existing	0.57	5	\$0.66	30%	40%	\$0.07	198.66	207.33	7th Power Plan
Large Retail	Ventilation	Thermostat - WiFi/Interactive	sqft	Existing	0.31	5	\$0.66	30%	40%	\$0.07	651.48	799.65	7th Power Plan
Large Retail	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	Existing	195.95	10	\$8.35	25%	65%	\$0.00	74.66	131.94	Illinois TRM
Large Retail	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	Existing	194.39	10	\$11.64	25%	65%	\$0.00	36.22	67.24	7th Power Plan
Large Retail	Water Heating	Water Heater - High Efficiency Circulation Pump	WHUnits	Existing	57.83	15	\$36.75	0%	0%	\$0.03	0.00	0.00	Hawaii TRM
Large Retail	Water Heating	Water Heater - Pipe Insulation	PipeFeet	Existing	605.39	15	\$14.88	16%	75%	\$0.00	141.87	241.06	AEG-BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Large Retail	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	Existing	127.30	4	\$144.04	25%	65%	\$0.15	46.30	85.77	7th Power Plan
Large Retail	Water Heating	Water Heater - Thermostat Setback	WHUnits	Existing	58.66	2	\$5.00	15%	75%	\$0.02	68.44	124.47	Illinois TRM
Large Retail	Water Heating	Water Heater - Solar System	PipeFeet	Existing	2,060.87	20	\$215.28	1%	30%	\$0.00	233.24	407.85	AEG-BEST
Large Retail	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.55	15	\$0.35	3%	23%	\$0.04	2,842.54	3,589.94	7th Power Plan
Large Retail	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.76	15	\$0.58	3%	23%	\$0.05	3,835.49	4,945.80	7th Power Plan
Large Retail	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	Existing	537.40	15	\$54.41	1%	3%	\$0.01	80.62	121.03	7th Power Plan
Large Retail	Interior Lighting	Interior Lighting - Timeclocks and Timers	occ sens	Existing	0.00	8	\$111.67	7%	15%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Large Retail	Interior Lighting	Interior Lighting - Skylights	1000 sqft	Existing	0.00	15	\$1,006.35	15%	30%	\$0.00	0.00	0.00	AEG Research
Large Retail	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	1000 sqft	Existing	354.01	16	\$1,807.69	5%	15%	\$0.28	690.99	1,102.91	7th Power Plan
Large Retail	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	Existing	3,439.35	11	\$30.80	15%	50%	\$0.00	2,508.91	3,585.14	Illinois TRM
Large Retail	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	ELtg Watts	Existing	1.73	8	\$0.63	15%	25%	\$0.03	736.70	1,109.54	7th Power Plan
Large Retail	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	Existing	58.05	8	\$55.10	15%	25%	\$0.08	361.55	570.51	Pacific Gas and Electric Research
Large Retail	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	Existing	71.26	7	\$3,400.00	15%	30%	\$4.43	661.11	1,058.84	AEG Research
Large Retail	Refrigeration	Refrigeration - Anti-Sweat Heater	Fridge Feet	Existing	59.04	8	\$48.18	4%	25%	\$0.10	38.40	58.16	7th Power Plan
Large Retail	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	Existing	73.73	4	\$10.44	4%	25%	\$0.03	26.77	37.70	Michigan Energy Measures Database
Large Retail	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	Existing	602.77	16	\$165.20	4%	25%	\$0.02	12.54	16.47	7th Power Plan
Large Retail	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	Existing	111.11	15	\$335.85	0%	0%	\$0.23	0.00	0.00	7th Power Plan
Large Retail	Refrigeration	Refrigeration - Strip Curtain	Walkin Door	Existing	91.36	2	\$10.41	4%	25%	\$0.05	2.29	2.89	7th Power Plan
Large Retail	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBtuh	Existing	1.71	15	\$45.43	2%	13%	\$2.01	136.68	164.46	Annual Energy Outlook, 2015

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Large Retail	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	Existing	36.21	15	\$313.82	2%	13%	\$0.67	241.88	287.03	Annual Energy Outlook, 2015
Large Retail	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	Existing	376.00	10	\$506.05	4%	25%	\$0.14	7.64	10.62	Vermont TRM
Large Retail	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	Existing	35.07	6	\$45.41	0%	0%	\$0.19	0.00	0.00	7th Power Plan
Large Retail	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	Existing	2.83	8	\$3.72	0%	0%	\$0.16	0.00	0.00	7th Power Plan
Large Retail	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	Existing	630.97	5	\$45.85	0%	0%	\$0.01	0.00	0.00	Illinois TRM
Large Retail	Refrigeration	Grocery - ECMs for Display Cases	Fridge Case	Existing	145.75	16	\$165.20	4%	25%	\$0.08	33.29	39.97	7th Power Plan
Large Retail	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	Existing	1,248.12	5	\$187.94	25%	75%	\$0.03	263.19	275.70	Illinois TRM
Large Retail	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	Existing	4,214.67	18	\$8,526.67	25%	50%	\$0.12	890.05	1,080.22	7th Power Plan
Large Retail	Office Equipment	Office Equipment - Smart Power Strips	Smart Strip	Existing	17.39	4	\$41.63	10%	50%	\$0.48	359.48	343.91	7th Power Plan
Large Retail	Cooling	Lodging - Guest Room Controls	LodgUnit	Existing	275.23	15	\$260.00	0%	0%	\$0.14	0.00	0.00	AEG-BEST
Large Retail	Heating	Lodging - Guest Room Controls	LodgUnit	Existing	-125.17	15	\$260.00	0%	0%	\$0.14	0.00	0.00	AEG-BEST
Large Retail	Office Equipment	Data Center - Best Practice Measures	sqft	Existing	0.01	5	\$0.00	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Retail	Cooling	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Retail	Ventilation	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Retail	Interior Lighting	Data Center - Commercially Available Measures	sqft	Existing	0.04	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Retail	Office Equipment	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Retail	Cooling	Data Center - Cutting Edge Measures	sqft	Existing	0.06	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Retail	Office Equipment	Data Center - Cutting Edge Measures	sqft	Existing	0.00	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Retail	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	Existing	14,773.36	18	\$4,092.80	0%	0%	\$0.02	0.00	0.00	7th Power Plan

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Large Retail	Miscellaneous	Pool Pump - Timer	perBldg	Existing	0.00	10	\$85.22	15%	75%	\$0.00	0.00	0.00	Ontario Power TRM
Large Retail	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	Existing	14,704.54	6	\$35.93	1%	3%	\$0.00	0.00	147.21	7th Power Plan
Large Retail	Cooling	Advanced New Construction Designs	sqft	Existing	1.08	25	\$4.11	0%	0%	\$0.05	0.00	0.00	AEG Research
Large Retail	Heating	Advanced New Construction Designs	sqft	Existing	0.98	25	\$4.11	0%	0%	\$0.05	0.00	0.00	AEG Research
Large Retail	Ventilation	Advanced New Construction Designs	sqft	Existing	0.44	25	\$4.11	0%	0%	\$0.05	0.00	0.00	AEG Research
Large Retail	Water Heating	Advanced New Construction Designs	sqft	Existing	0.15	25	\$4.11	0%	0%	\$0.05	0.00	0.00	AEG Research
Large Retail	Interior Lighting	Advanced New Construction Designs	sqft	Existing	1.07	25	\$4.11	0%	0%	\$0.05	0.00	0.00	AEG Research
Large Retail	Exterior Lighting	Advanced New Construction Designs	sqft	Existing	0.24	25	\$4.11	0%	0%	\$0.05	0.00	0.00	AEG Research
Large Retail	Cooling	Strategic Energy Management	sqft	Existing	0.22	3	\$0.21	0%	3%	\$0.02	145.50	154.62	AEG Research
Large Retail	Heating	Strategic Energy Management	sqft	Existing	0.17	3	\$0.21	0%	3%	\$0.02	18.94	19.96	AEG Research
Large Retail	Ventilation	Strategic Energy Management	sqft	Existing	0.09	3	\$0.21	0%	3%	\$0.02	63.36	81.79	AEG Research
Large Retail	Water Heating	Strategic Energy Management	sqft	Existing	0.02	3	\$0.21	0%	3%	\$0.02	5.20	9.62	AEG Research
Large Retail	Interior Lighting	Strategic Energy Management	sqft	Existing	0.17	3	\$0.21	0%	3%	\$0.02	97.38	157.35	AEG Research
Large Retail	Exterior Lighting	Strategic Energy Management	sqft	Existing	0.03	3	\$0.21	0%	3%	\$0.02	20.16	31.78	AEG Research
Large Retail	Refrigeration	Strategic Energy Management	sqft	Existing	0.02	3	\$0.21	0%	3%	\$0.02	14.34	16.94	AEG Research
Large Retail	Office Equipment	Strategic Energy Management	sqft	Existing	0.02	3	\$0.21	0%	3%	\$0.02	15.20	14.53	AEG Research
Large Retail	Cooling	Commissioning	sqft	Existing	0.30	3	\$0.61	0%	0%	\$0.02	0.00	0.00	AEG Research
Large Retail	Heating	Commissioning	sqft	Existing	0.23	3	\$0.61	0%	0%	\$0.02	0.00	0.00	AEG Research
Large Retail	Ventilation	Commissioning	sqft	Existing	0.13	3	\$0.61	0%	0%	\$0.02	0.00	0.00	AEG Research
Large Retail	Water Heating	Commissioning	sqft	Existing	0.01	3	\$0.61	0%	0%	\$0.02	0.00	0.00	AEG Research
Large Retail	Interior Lighting	Commissioning	sqft	Existing	0.19	3	\$0.61	0%	0%	\$0.02	0.00	0.00	AEG Research

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Large Retail	Exterior Lighting	Commissioning	sqft	Existing	0.04	3	\$0.61	0%	0%	\$0.02	0.00	0.00	AEG Research
Large Retail	Refrigeration	Commissioning	sqft	Existing	0.05	3	\$0.61	0%	0%	\$0.02	0.00	0.00	AEG Research
Large Retail	Cooling	Retrocommissioning	sqft	Existing	0.31	3	\$0.39	10%	65%	\$0.02	3,829.11	3,987.18	AEG Research
Large Retail	Heating	Retrocommissioning	sqft	Existing	0.24	3	\$0.39	10%	65%	\$0.02	498.35	514.70	AEG Research
Large Retail	Ventilation	Retrocommissioning	sqft	Existing	0.13	3	\$0.39	10%	65%	\$0.02	1,667.52	2,108.60	AEG Research
Large Retail	Water Heating	Retrocommissioning	sqft	Existing	0.01	3	\$0.39	10%	65%	\$0.02	44.51	81.82	AEG Research
Large Retail	Interior Lighting	Retrocommissioning	sqft	Existing	0.20	3	\$0.39	10%	65%	\$0.02	2,122.79	3,370.37	AEG Research
Large Retail	Exterior Lighting	Retrocommissioning	sqft	Existing	0.04	3	\$0.39	10%	65%	\$0.02	439.42	680.78	AEG Research
Large Retail	Refrigeration	Retrocommissioning	sqft	Existing	0.05	3	\$0.39	10%	65%	\$0.02	645.00	735.54	AEG Research
Large Retail	Interior Lighting	Fruit Storage - Lighting Controls	sqft	Existing	0.14	10	\$0.09	0%	0%	\$0.05	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Retail	Refrigeration	Fruit Storage Refrigeration Retrofit	sqft	Existing	0.15	10	\$1.09	0%	0%	\$0.72	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Retail	Refrigeration	Fruit Storage Refrigeration Tuneup	sqft	Existing	0.04	3	\$0.23	0%	0%	\$1.59	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Retail	Refrigeration	Fruit Storage Retrofit - CO2 Scrub	sqft	Existing	0.07	10	\$3.13	0%	0%	\$4.26	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Retail	Refrigeration	Fruit Storage Retrofit - Membrane	sqft	Existing	0.01	10	\$0.68	0%	0%	\$4.62	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Retail	Cooling	Insulation - Ceiling	sqft roof	New	0.00	45	\$1.28	15%	50%	\$0.05	0.00	0.00	Building Energy Simulation Tool
Large Retail	Heating	Insulation - Ceiling	sqft roof	New	0.84	45	\$1.28	15%	50%	\$0.05	175.75	176.38	Building Energy Simulation Tool
Large Retail	Ventilation	Insulation - Ceiling	sqft roof	New	0.34	45	\$1.28	15%	50%	\$0.05	468.34	510.41	Building Energy Simulation Tool
Large Retail	Cooling	Insulation - Ducting	sqft duct	New	0.32	20	\$0.84	15%	25%	\$0.00	205.14	205.65	Building Energy Simulation Tool
Large Retail	Heating	Insulation - Ducting	sqft duct	New	0.00	20	\$0.84	15%	25%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Large Retail	Ventilation	Insulation - Ducting	sqft duct	New	0.00	20	\$0.84	15%	25%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Large Retail	Cooling	Building Shell - Cool Roofs	sqft roof	New	0.23	20	\$0.78	45%	50%	\$10.00	49.01	50.07	Building Energy Simulation Tool

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Large Retail	Heating	Building Shell - Cool Roofs	sqft roof	New	-0.22	20	\$0.78	45%	50%	\$10.00	-6.49	-6.57	Building Energy Simulation Tool
Large Retail	Ventilation	Building Shell - Cool Roofs	sqft roof	New	-0.09	20	\$0.78	45%	50%	\$10.00	-17.39	-19.26	Building Energy Simulation Tool
Large Retail	Cooling	Insulation - Wall Cavity	sqft wall	New	-0.03	45	\$0.78	15%	50%	\$0.05	-47.80	-48.17	Building Energy Simulation Tool
Large Retail	Heating	Insulation - Wall Cavity	sqft wall	New	0.63	45	\$0.78	15%	50%	\$0.05	129.05	129.26	Building Energy Simulation Tool
Large Retail	Ventilation	Insulation - Wall Cavity	sqft wall	New	0.25	45	\$0.78	15%	50%	\$0.05	345.95	375.60	Building Energy Simulation Tool
Large Retail	Cooling	HVAC - Duct Repair and Sealing	tonCool	New	12.55	18	\$0.57	15%	25%	\$0.00	60.02	60.49	Building Energy Simulation Tool
Large Retail	Heating	HVAC - Duct Repair and Sealing	tonCool	New	10.02	18	\$0.57	15%	25%	\$0.00	6.76	6.80	Building Energy Simulation Tool
Large Retail	Ventilation	HVAC - Duct Repair and Sealing	tonCool	New	4.06	18	\$0.57	15%	25%	\$0.00	18.13	19.83	Building Energy Simulation Tool
Large Retail	Cooling	Windows - High Efficiency Glazing	sqft window	New	8.20	30	\$35.93	66%	66%	\$0.07	0.00	0.00	7th Power Plan
Large Retail	Heating	Windows - High Efficiency Glazing	sqft window	New	15.30	30	\$35.93	66%	66%	\$0.07	0.00	0.00	7th Power Plan
Large Retail	Ventilation	Windows - High Efficiency Glazing	sqft window	New	3.53	30	\$35.93	66%	66%	\$0.07	0.00	0.00	7th Power Plan
Large Retail	Cooling	Chiller - Chilled Water Reset	ChillCtrl	New	3,103.10	10	\$884.85	15%	75%	\$0.03	4.80	4.89	AEG-BEST
Large Retail	Cooling	Chiller - Chilled Water Variable-Flow System	HP cool	New	312.58	15	\$332.55	15%	75%	\$0.08	85.45	86.82	AEG-BEST
Large Retail	Cooling	Chiller - Variable Speed Fans	HP fan	New	736.90	15	\$208.36	15%	75%	\$0.02	20.07	20.40	New Jersey TRM
Large Retail	Cooling	Water-Cooled Chiller - Condenser Water Reset	ChillCtrl	New	26,522.48	10	\$884.85	15%	75%	\$0.00	15.64	15.94	AEG-BEST
Large Retail	Cooling	HVAC - Economizer	HP cool	New	110.55	10	\$168.42	18%	75%	\$0.16	1,105.15	1,123.47	AEG-BEST
Large Retail	Heating	Space Heating - Heat Recovery Ventilator	CFM	New	1.20	14	\$5.08	6%	75%	\$0.36	198.23	205.63	7th Power Plan
Large Retail	Ventilation	Ventilation - ECM on VAV Boxes	sqft	New	0.39	18	\$0.25	15%	20%	\$0.03	219.31	239.96	7th Power Plan
Large Retail	Ventilation	Ventilation - Variable Speed Control	sqft	New	0.04	15	\$181.39	19%	50%	\$287.96	76.23	91.33	AEG-BEST

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Large Retail	Ventilation	Ventilation - Demand Controlled	sqft	New	0.02	15	\$0.25	15%	75%	\$0.70	83.32	99.86	7th Power Plan
Large Retail	Cooling	Destratification Fans (HVLS)	Strat Fan	New	4,532.53	15	\$7,270.90	15%	30%	\$0.13	455.15	459.74	AEG Research
Large Retail	Heating	Destratification Fans (HVLS)	Strat Fan	New	0.16	15	\$7,270.90	15%	30%	\$0.13	0.00	0.00	AEG Research
Large Retail	Cooling	RTU - Maintenance	tonCool	New	66.65	3	\$35.00	15%	45%	\$0.15	128.76	132.57	AEG Research
Large Retail	Cooling	RTU - Advanced Controls	sqft	New	0.14	15	\$0.07	15%	45%	\$0.04	407.69	411.88	7th Power Plan
Large Retail	Cooling	RTU - Evaporative Precooler	tonCool	New	127.20	15	\$681.62	15%	75%	\$0.41	3,547.88	3,579.24	AEG Research
Large Retail	Cooling	Ductless Mini Split Heat Pump	tonCool	New	325.73	15	\$3,359.26	15%	25%	\$0.49	44.99	47.24	7th Power Plan
Large Retail	Heating	Ductless Mini Split Heat Pump	tonCool	New	199.06	15	\$3,359.26	15%	25%	\$0.49	65.55	67.40	7th Power Plan
Large Retail	Cooling	Thermostat - WiFi/Interactive	sqft	New	0.62	5	\$0.66	30%	40%	\$0.08	90.19	92.06	7th Power Plan
Large Retail	Heating	Thermostat - WiFi/Interactive	sqft	New	0.55	5	\$0.66	30%	40%	\$0.08	11.22	11.41	7th Power Plan
Large Retail	Ventilation	Thermostat - WiFi/Interactive	sqft	New	0.22	5	\$0.66	30%	40%	\$0.08	29.59	35.90	7th Power Plan
Large Retail	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	New	50.88	10	\$8.35	25%	65%	\$0.01	12.80	20.47	Illinois TRM
Large Retail	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	New	53.00	10	\$11.64	25%	65%	\$0.01	6.68	10.66	7th Power Plan
Large Retail	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	New	47.98	15	\$36.75	0%	0%	\$0.03	0.00	0.00	Hawaii TRM
Large Retail	Water Heating	Water Heater - Pipe Insulation	PipeFeet	New	476.64	15	\$14.88	1%	75%	\$0.00	44.29	65.92	AEG-BEST
Large Retail	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	New	34.87	4	\$144.04	25%	65%	\$0.44	3.52	6.23	7th Power Plan
Large Retail	Water Heating	Water Heater - Thermostat Setback	WHunits	New	48.18	2	\$5.00	15%	75%	\$0.02	1.91	3.47	Illinois TRM
Large Retail	Water Heating	Water Heater - Solar System	PipeFeet	New	1,660.10	20	\$215.28	1%	30%	\$0.00	62.29	91.98	AEG-BEST
Large Retail	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.51	15	\$0.35	11%	23%	\$0.04	1,348.92	1,602.09	7th Power Plan
Large Retail	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.70	15	\$0.58	11%	23%	\$0.04	1,854.43	2,213.38	7th Power Plan
Large Retail	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	New	490.38	15	\$54.41	1%	3%	\$0.01	17.97	24.13	7th Power Plan

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Large Retail	Interior Lighting	Interior Lighting - Timeclocks and Timers	occ sens	New	0.00	8	\$111.67	7%	15%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Large Retail	Interior Lighting	Interior Lighting - Skylights	1000 sqft	New	0.00	15	\$1,006.35	18%	33%	\$0.00	0.00	0.00	AEG Research
Large Retail	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	1000 sqft	New	294.62	16	\$1,807.69	5%	15%	\$0.31	177.52	238.26	7th Power Plan
Large Retail	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	New	2,806.72	11	\$30.80	15%	50%	\$0.00	496.21	658.27	Illinois TRM
Large Retail	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	ELtg Watts	New	1.49	8	\$0.63	15%	25%	\$0.03	117.02	179.67	7th Power Plan
Large Retail	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	New	51.78	8	\$55.10	15%	25%	\$0.08	61.58	93.82	Pacific Gas and Electric Research
Large Retail	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	New	63.23	7	\$3,400.00	15%	30%	\$4.28	97.01	154.66	AEG Research
Large Retail	Refrigeration	Refrigeration - Anti-Sweat Heater	Fridge Feet	New	48.06	8	\$48.18	4%	25%	\$0.13	9.15	11.10	7th Power Plan
Large Retail	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	New	58.16	4	\$10.44	4%	25%	\$0.04	2.55	3.27	Michigan Energy Measures Database
Large Retail	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	New	505.34	16	\$165.20	4%	25%	\$0.03	4.58	5.08	7th Power Plan
Large Retail	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	New	108.98	15	\$335.85	0%	0%	\$0.25	0.00	0.00	7th Power Plan
Large Retail	Refrigeration	Refrigeration - Strip Curtain	Walkin Door	New	82.65	2	\$10.41	4%	25%	\$0.05	0.09	0.11	7th Power Plan
Large Retail	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBtuh	New	1.70	15	\$45.43	2%	13%	\$2.17	57.13	58.49	Annual Energy Outlook, 2015
Large Retail	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	New	35.51	15	\$313.82	2%	13%	\$0.72	99.35	101.81	Annual Energy Outlook, 2015
Large Retail	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	New	332.93	10	\$506.05	4%	25%	\$0.16	2.35	2.64	Vermont TRM
Large Retail	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	New	34.02	6	\$45.41	0%	0%	\$0.21	0.00	0.00	7th Power Plan
Large Retail	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	New	2.74	8	\$3.72	0%	0%	\$0.17	0.00	0.00	7th Power Plan
Large Retail	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	New	590.93	5	\$45.85	0%	0%	\$0.01	0.00	0.00	Illinois TRM
Large Retail	Refrigeration	Grocery - ECMs for Display Cases	Fridge Case	New	141.16	16	\$165.20	4%	25%	\$0.09	13.90	14.32	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Large Retail	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	New	1,218.59	5	\$187.94	25%	75%	\$0.03	39.06	39.38	Illinois TRM
Large Retail	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	New	3,288.72	18	\$8,526.67	25%	50%	\$0.14	368.90	405.68	7th Power Plan
Large Retail	Office Equipment	Office Equipment - Smart Power Strips	Smart Strip	New	18.71	4	\$41.63	10%	50%	\$0.45	28.35	26.80	7th Power Plan
Large Retail	Cooling	Lodging - Guest Room Controls	LodgUnit	New	342.22	15	\$260.00	0%	0%	\$0.09	0.00	0.00	AEG-BEST
Large Retail	Heating	Lodging - Guest Room Controls	LodgUnit	New	-124.62	15	\$260.00	0%	0%	\$0.09	0.00	0.00	AEG-BEST
Large Retail	Office Equipment	Data Center - Best Practice Measures	sqft	New	0.01	5	\$0.00	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Retail	Cooling	Data Center - Commercially Available Measures	sqft	New	0.01	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Retail	Ventilation	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Retail	Interior Lighting	Data Center - Commercially Available Measures	sqft	New	0.04	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Retail	Office Equipment	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Retail	Cooling	Data Center - Cutting Edge Measures	sqft	New	0.05	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Retail	Office Equipment	Data Center - Cutting Edge Measures	sqft	New	0.00	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Retail	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	New	11,253.60	18	\$4,092.80	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Large Retail	Miscellaneous	Pool Pump - Timer	perBldg	New	0.00	10	\$85.22	15%	75%	\$0.00	0.00	0.00	Ontario Power TRM
Large Retail	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	New	4,901.51	6	\$35.93	1%	3%	\$0.00	0.00	11.21	7th Power Plan
Large Retail	Cooling	Advanced New Construction Designs	sqft	New	1.15	25	\$4.11	10%	30%	\$0.05	3,304.82	3,303.33	AEG Research
Large Retail	Heating	Advanced New Construction Designs	sqft	New	1.03	25	\$4.11	10%	30%	\$0.05	412.88	416.04	AEG Research
Large Retail	Ventilation	Advanced New Construction Designs	sqft	New	0.41	25	\$4.11	10%	30%	\$0.05	1,088.97	1,200.29	AEG Research
Large Retail	Water Heating	Advanced New Construction Designs	sqft	New	0.13	25	\$4.11	10%	30%	\$0.05	118.07	143.05	AEG Research

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Large Retail	Interior Lighting	Advanced New Construction Designs	sqft	New	1.01	25	\$4.11	10%	30%	\$0.05	2,186.24	2,531.68	AEG Research
Large Retail	Exterior Lighting	Advanced New Construction Designs	sqft	New	0.19	25	\$4.11	10%	30%	\$0.05	416.41	486.44	AEG Research
Large Retail	Cooling	Strategic Energy Management	sqft	New	0.18	3	\$0.18	0%	3%	\$0.02	7.47	7.68	AEG Research
Large Retail	Heating	Strategic Energy Management	sqft	New	0.16	3	\$0.18	0%	3%	\$0.02	0.93	0.94	AEG Research
Large Retail	Ventilation	Strategic Energy Management	sqft	New	0.07	3	\$0.18	0%	3%	\$0.02	2.47	2.99	AEG Research
Large Retail	Water Heating	Strategic Energy Management	sqft	New	0.02	3	\$0.18	0%	3%	\$0.02	0.26	0.46	AEG Research
Large Retail	Interior Lighting	Strategic Energy Management	sqft	New	0.16	3	\$0.18	0%	3%	\$0.02	4.85	7.58	AEG Research
Large Retail	Exterior Lighting	Strategic Energy Management	sqft	New	0.03	3	\$0.18	0%	3%	\$0.02	0.93	1.61	AEG Research
Large Retail	Refrigeration	Strategic Energy Management	sqft	New	0.03	3	\$0.18	0%	3%	\$0.02	1.03	1.09	AEG Research
Large Retail	Office Equipment	Strategic Energy Management	sqft	New	0.02	3	\$0.18	0%	3%	\$0.02	0.76	0.72	AEG Research
Large Retail	Cooling	Commissioning	sqft	New	0.26	3	\$0.50	10%	65%	\$0.02	189.90	195.96	AEG Research
Large Retail	Heating	Commissioning	sqft	New	0.23	3	\$0.50	10%	65%	\$0.02	23.60	23.89	AEG Research
Large Retail	Ventilation	Commissioning	sqft	New	0.09	3	\$0.50	10%	65%	\$0.02	62.89	76.37	AEG Research
Large Retail	Water Heating	Commissioning	sqft	New	0.01	3	\$0.50	10%	65%	\$0.02	2.22	3.93	AEG Research
Large Retail	Interior Lighting	Commissioning	sqft	New	0.18	3	\$0.50	10%	65%	\$0.02	102.69	161.20	AEG Research
Large Retail	Exterior Lighting	Commissioning	sqft	New	0.03	3	\$0.50	10%	65%	\$0.02	19.65	34.21	AEG Research
Large Retail	Refrigeration	Commissioning	sqft	New	0.07	3	\$0.50	10%	65%	\$0.02	43.71	46.58	AEG Research
Large Retail	Cooling	Retrocommissioning	sqft	New	0.26	3	\$0.32	0%	0%	\$0.02	0.00	0.00	AEG Research
Large Retail	Heating	Retrocommissioning	sqft	New	0.23	3	\$0.32	0%	0%	\$0.02	0.00	0.00	AEG Research
Large Retail	Ventilation	Retrocommissioning	sqft	New	0.09	3	\$0.32	0%	0%	\$0.02	0.00	0.00	AEG Research
Large Retail	Water Heating	Retrocommissioning	sqft	New	0.01	3	\$0.32	0%	0%	\$0.02	0.00	0.00	AEG Research
Large Retail	Interior Lighting	Retrocommissioning	sqft	New	0.18	3	\$0.32	0%	0%	\$0.02	0.00	0.00	AEG Research

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Large Retail	Exterior Lighting	Retrocommissioning	sqft	New	0.03	3	\$0.32	0%	0%	\$0.02	0.00	0.00	AEG Research
Large Retail	Refrigeration	Retrocommissioning	sqft	New	0.07	3	\$0.32	0%	0%	\$0.02	0.00	0.00	AEG Research
Large Retail	Interior Lighting	Fruit Storage - Lighting Controls	sqft	New	0.13	10	\$0.09	0%	0%	\$0.05	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Retail	Refrigeration	Fruit Storage Refrigeration Retrofit	sqft	New	0.22	10	\$1.09	0%	0%	\$0.52	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Retail	Refrigeration	Fruit Storage Refrigeration Tuneup	sqft	New	0.06	3	\$0.23	0%	0%	\$1.14	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Retail	Refrigeration	Fruit Storage Retrofit - CO2 Scrub	sqft	New	0.11	10	\$3.13	0%	0%	\$3.07	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Retail	Refrigeration	Fruit Storage Retrofit - Membrane	sqft	New	0.02	10	\$0.68	0%	0%	\$3.33	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Retail	Cooling	Insulation - Ceiling	sqft roof	Existing	0.18	45	\$1.28	15%	35%	\$0.12	1,399.60	1,517.91	Building Energy Simulation Tool
Small Retail	Heating	Insulation - Ceiling	sqft roof	Existing	0.26	45	\$1.28	15%	35%	\$0.12	383.96	411.98	Building Energy Simulation Tool
Small Retail	Ventilation	Insulation - Ceiling	sqft roof	Existing	0.05	45	\$1.28	15%	35%	\$0.12	433.05	516.80	Building Energy Simulation Tool
Small Retail	Cooling	Insulation - Ducting	sqft duct	Existing	0.41	20	\$0.84	15%	50%	\$0.00	1,399.87	1,467.91	Building Energy Simulation Tool
Small Retail	Heating	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.84	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Small Retail	Ventilation	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.84	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Small Retail	Cooling	Building Shell - Cool Roofs	sqft roof	Existing	0.46	20	\$0.78	45%	50%	\$0.24	915.06	938.01	Building Energy Simulation Tool
Small Retail	Heating	Building Shell - Cool Roofs	sqft roof	Existing	-0.19	20	\$0.78	45%	50%	\$0.24	-72.86	-74.25	Building Energy Simulation Tool
Small Retail	Ventilation	Building Shell - Cool Roofs	sqft roof	Existing	-0.04	20	\$0.78	45%	50%	\$0.24	-79.92	-90.80	Building Energy Simulation Tool
Small Retail	Cooling	Insulation - Wall Cavity	sqft wall	Existing	-0.09	45	\$0.78	15%	35%	\$0.03	-223.43	-229.86	Building Energy Simulation Tool
Small Retail	Heating	Insulation - Wall Cavity	sqft wall	Existing	1.29	45	\$0.78	15%	35%	\$0.03	585.06	595.09	Building Energy Simulation Tool
Small Retail	Ventilation	Insulation - Wall Cavity	sqft wall	Existing	0.25	45	\$0.78	15%	35%	\$0.03	640.99	727.22	Building Energy Simulation Tool

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Small Retail	Cooling	HVAC - Duct Repair and Sealing	tonCool	Existing	5.74	18	\$0.57	15%	50%	\$0.03	317.93	326.77	Building Energy Simulation Tool
Small Retail	Heating	HVAC - Duct Repair and Sealing	tonCool	Existing	-3.62	18	\$0.57	15%	50%	\$0.03	-38.32	-39.00	Building Energy Simulation Tool
Small Retail	Ventilation	HVAC - Duct Repair and Sealing	tonCool	Existing	-0.71	18	\$0.57	15%	50%	\$0.03	-41.87	-47.61	Building Energy Simulation Tool
Small Retail	Cooling	Windows - High Efficiency Glazing	sqft window	Existing	7.87	30	\$35.93	48%	48%	\$0.08	0.00	0.00	7th Power Plan
Small Retail	Heating	Windows - High Efficiency Glazing	sqft window	Existing	14.57	30	\$35.93	48%	48%	\$0.08	0.00	0.00	7th Power Plan
Small Retail	Ventilation	Windows - High Efficiency Glazing	sqft window	Existing	1.65	30	\$35.93	48%	48%	\$0.08	0.00	0.00	7th Power Plan
Small Retail	Cooling	Chiller - Chilled Water Reset	ChillCtrl	Existing	0.00	10	\$884.85	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Small Retail	Cooling	Chiller - Chilled Water Variable-Flow System	HP cool	Existing	0.00	15	\$332.55	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Small Retail	Cooling	Chiller - Variable Speed Fans	HP fan	Existing	0.00	15	\$208.36	15%	75%	\$0.00	0.00	0.00	New Jersey TRM
Small Retail	Cooling	Water-Cooled Chiller - Condenser Water Reset	ChillCtrl	Existing	0.00	10	\$884.85	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Small Retail	Cooling	HVAC - Economizer	HP cool	Existing	114.26	10	\$168.42	18%	75%	\$0.15	8,010.54	8,666.38	AEG-BEST
Small Retail	Heating	Space Heating - Heat Recovery Ventilator	CFM	Existing	1.22	14	\$5.08	3%	75%	\$0.35	1,611.91	1,736.15	7th Power Plan
Small Retail	Ventilation	Ventilation - ECM on VAV Boxes	sqft	Existing	0.17	18	\$0.25	15%	20%	\$0.09	352.72	410.13	7th Power Plan
Small Retail	Ventilation	Ventilation - Variable Speed Control	sqft	Existing	0.04	15	\$181.39	13%	25%	\$286.96	216.75	280.54	AEG-BEST
Small Retail	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.01	15	\$0.25	15%	25%	\$1.93	37.59	48.61	7th Power Plan
Small Retail	Cooling	Destratification Fans (HVLS)	Strat Fan	Existing	4,852.09	15	\$7,270.90	15%	15%	\$0.05	0.00	0.00	AEG Research
Small Retail	Heating	Destratification Fans (HVLS)	Strat Fan	Existing	7,878.70	15	\$7,270.90	15%	15%	\$0.05	0.00	0.00	AEG Research
Small Retail	Cooling	RTU - Maintenance	tonCool	Existing	49.37	3	\$35.00	15%	45%	\$0.19	2,197.27	2,455.52	AEG Research
Small Retail	Cooling	RTU - Advanced Controls	sqft	Existing	0.22	15	\$0.07	15%	45%	\$0.03	2,296.49	2,354.91	7th Power Plan
Small Retail	Cooling	RTU - Evaporative Precooler	tonCool	Existing	96.36	15	\$681.62	15%	75%	\$0.52	7,557.13	8,027.83	AEG Research
Small Retail	Cooling	Ductless Mini Split Heat Pump	tonCool	Existing	194.31	15	\$3,359.26	15%	75%	\$0.61	469.65	559.20	7th Power Plan

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Small Retail	Heating	Ductless Mini Split Heat Pump	tonCool	Existing	215.89	15	\$3,359.26	15%	75%	\$0.61	1,916.14	2,073.32	7th Power Plan
Small Retail	Cooling	Thermostat - WiFi/Interactive	sqft	Existing	0.63	5	\$0.66	30%	40%	\$0.09	2,415.34	2,598.14	7th Power Plan
Small Retail	Heating	Thermostat - WiFi/Interactive	sqft	Existing	0.56	5	\$0.66	30%	40%	\$0.09	412.90	430.09	7th Power Plan
Small Retail	Ventilation	Thermostat - WiFi/Interactive	sqft	Existing	0.11	5	\$0.66	30%	40%	\$0.09	447.12	523.26	7th Power Plan
Small Retail	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	Existing	21.22	10	\$8.35	25%	65%	\$0.03	102.19	182.73	Illinois TRM
Small Retail	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	Existing	21.93	10	\$11.64	25%	65%	\$0.03	52.57	94.98	7th Power Plan
Small Retail	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	Existing	60.65	15	\$36.75	0%	0%	\$0.03	0.00	0.00	Hawaii TRM
Small Retail	Water Heating	Water Heater - Pipe Insulation	PipeFeet	Existing	66.37	15	\$14.88	16%	75%	\$0.01	197.59	335.73	AEG-BEST
Small Retail	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	Existing	13.96	4	\$144.04	25%	65%	\$1.33	64.52	119.53	7th Power Plan
Small Retail	Water Heating	Water Heater - Thermostat Setback	WHunits	Existing	62.38	2	\$5.00	15%	75%	\$0.02	103.92	180.06	Illinois TRM
Small Retail	Water Heating	Water Heater - Solar System	PipeFeet	Existing	221.67	20	\$215.28	1%	30%	\$0.04	316.26	561.56	AEG-BEST
Small Retail	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.36	15	\$0.35	3%	23%	\$0.06	3,505.09	4,469.32	7th Power Plan
Small Retail	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.49	15	\$0.58	3%	23%	\$0.07	4,729.48	6,157.81	7th Power Plan
Small Retail	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	Existing	159.61	15	\$54.41	1%	3%	\$0.02	102.58	154.00	7th Power Plan
Small Retail	Interior Lighting	Interior Lighting - Timeclocks and Timers	occ sens	Existing	0.00	8	\$111.67	7%	15%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Small Retail	Interior Lighting	Interior Lighting - Skylights	1000 sqft	Existing	0.00	15	\$1,006.35	15%	25%	\$0.00	0.00	0.00	AEG Research
Small Retail	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	1000 sqft	Existing	233.64	16	\$1,807.69	5%	15%	\$0.43	879.22	1,403.35	7th Power Plan
Small Retail	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	Existing	2,269.97	11	\$30.80	15%	50%	\$0.00	3,192.35	4,561.75	Illinois TRM
Small Retail	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	ELtg Watts	Existing	1.73	8	\$0.63	15%	25%	\$0.03	1,420.27	2,139.07	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Small Retail	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	Existing	58.05	8	\$55.10	15%	25%	\$0.08	697.03	1,099.87	Pacific Gas and Electric Research
Small Retail	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	Existing	71.26	7	\$3,400.00	15%	30%	\$4.43	1,274.54	2,041.33	AEG Research
Small Retail	Refrigeration	Refrigeration - Anti-Sweat Heater	Fridge Feet	Existing	3.26	8	\$48.18	4%	25%	\$1.77	2.50	3.80	7th Power Plan
Small Retail	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	Existing	3.57	4	\$10.44	4%	25%	\$0.62	3.78	5.54	Michigan Energy Measures Database
Small Retail	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	Existing	21.61	16	\$165.20	4%	25%	\$0.58	5.16	7.40	7th Power Plan
Small Retail	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	Existing	4.62	15	\$335.85	0%	0%	\$5.58	0.00	0.00	7th Power Plan
Small Retail	Refrigeration	Refrigeration - Strip Curtain	Walkin Door	Existing	0.00	2	\$10.41	4%	25%	\$0.00	0.00	0.00	7th Power Plan
Small Retail	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	Existing	0.07	15	\$45.43	2%	13%	\$48.00	10.16	12.56	Annual Energy Outlook, 2015
Small Retail	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	Existing	1.51	15	\$313.82	2%	13%	\$15.99	17.97	21.93	Annual Energy Outlook, 2015
Small Retail	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	Existing	14.31	10	\$506.05	4%	25%	\$3.57	3.40	4.93	Vermont TRM
Small Retail	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	Existing	1.93	6	\$45.41	0%	0%	\$3.49	0.00	0.00	7th Power Plan
Small Retail	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	Existing	0.16	8	\$3.72	0%	0%	\$2.82	0.00	0.00	7th Power Plan
Small Retail	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	Existing	32.81	5	\$45.85	0%	0%	\$0.25	0.00	0.00	Illinois TRM
Small Retail	Refrigeration	Grocery - ECMs for Display Cases	Fridge Case	Existing	8.05	16	\$165.20	4%	25%	\$1.52	2.17	2.61	7th Power Plan
Small Retail	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	Existing	1,253.07	5	\$187.94	25%	75%	\$0.03	18.35	19.17	Illinois TRM
Small Retail	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	Existing	1,437.66	18	\$8,526.67	25%	50%	\$0.37	589.75	695.95	7th Power Plan
Small Retail	Office Equipment	Office Equipment - Smart Power Strips	Smart Strip	Existing	9.43	4	\$41.63	10%	50%	\$0.89	396.18	356.56	7th Power Plan
Small Retail	Cooling	Lodging - Guest Room Controls	LodgUnit	Existing	214.07	15	\$260.00	0%	0%	\$0.28	0.00	0.00	AEG-BEST
Small Retail	Heating	Lodging - Guest Room Controls	LodgUnit	Existing	-140.90	15	\$260.00	0%	0%	\$0.28	0.00	0.00	AEG-BEST

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Small Retail	Office Equipment	Data Center - Best Practice Measures	sqft	Existing	0.02	5	\$0.00	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Retail	Cooling	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Retail	Ventilation	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Retail	Interior Lighting	Data Center - Commercially Available Measures	sqft	Existing	0.03	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Retail	Office Equipment	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Retail	Cooling	Data Center - Cutting Edge Measures	sqft	Existing	0.06	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Retail	Office Equipment	Data Center - Cutting Edge Measures	sqft	Existing	0.00	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Retail	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	Existing	724.40	18	\$4,092.80	0%	0%	\$0.35	0.00	0.00	7th Power Plan
Small Retail	Miscellaneous	Pool Pump - Timer	perBldg	Existing	0.00	10	\$85.22	15%	75%	\$0.00	0.00	0.00	Ontario Power TRM
Small Retail	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	Existing	1,536.80	6	\$35.93	1%	3%	\$0.00	0.00	197.74	7th Power Plan
Small Retail	Cooling	Advanced New Construction Designs	sqft	Existing	0.85	25	\$4.11	0%	0%	\$0.07	0.00	0.00	AEG Research
Small Retail	Heating	Advanced New Construction Designs	sqft	Existing	0.83	25	\$4.11	0%	0%	\$0.07	0.00	0.00	AEG Research
Small Retail	Ventilation	Advanced New Construction Designs	sqft	Existing	0.16	25	\$4.11	0%	0%	\$0.07	0.00	0.00	AEG Research
Small Retail	Water Heating	Advanced New Construction Designs	sqft	Existing	0.11	25	\$4.11	0%	0%	\$0.07	0.00	0.00	AEG Research
Small Retail	Interior Lighting	Advanced New Construction Designs	sqft	Existing	0.71	25	\$4.11	0%	0%	\$0.07	0.00	0.00	AEG Research
Small Retail	Exterior Lighting	Advanced New Construction Designs	sqft	Existing	0.24	25	\$4.11	0%	0%	\$0.07	0.00	0.00	AEG Research
Small Retail	Cooling	Strategic Energy Management	sqft	Existing	0.20	3	\$0.11	0%	3%	\$0.01	251.95	265.43	AEG Research
Small Retail	Heating	Strategic Energy Management	sqft	Existing	0.17	3	\$0.11	0%	3%	\$0.01	40.19	41.91	AEG Research
Small Retail	Ventilation	Strategic Energy Management	sqft	Existing	0.03	3	\$0.11	0%	3%	\$0.01	44.04	53.18	AEG Research

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Small Retail	Water Heating	Strategic Energy Management	sqft	Existing	0.02	3	\$0.11	0%	3%	\$0.01	7.33	13.47	AEG Research
Small Retail	Interior Lighting	Strategic Energy Management	sqft	Existing	0.12	3	\$0.11	0%	3%	\$0.01	139.55	205.77	AEG Research
Small Retail	Exterior Lighting	Strategic Energy Management	sqft	Existing	0.03	3	\$0.11	0%	3%	\$0.01	40.05	62.04	AEG Research
Small Retail	Refrigeration	Strategic Energy Management	sqft	Existing	0.00	3	\$0.11	0%	3%	\$0.01	1.15	1.34	AEG Research
Small Retail	Office Equipment	Strategic Energy Management	sqft	Existing	0.01	3	\$0.11	0%	3%	\$0.01	16.76	15.07	AEG Research
Small Retail	Cooling	Commissioning	sqft	Existing	0.27	3	\$0.36	0%	0%	\$0.02	0.00	0.00	AEG Research
Small Retail	Heating	Commissioning	sqft	Existing	0.23	3	\$0.36	0%	0%	\$0.02	0.00	0.00	AEG Research
Small Retail	Ventilation	Commissioning	sqft	Existing	0.05	3	\$0.36	0%	0%	\$0.02	0.00	0.00	AEG Research
Small Retail	Water Heating	Commissioning	sqft	Existing	0.01	3	\$0.36	0%	0%	\$0.02	0.00	0.00	AEG Research
Small Retail	Interior Lighting	Commissioning	sqft	Existing	0.14	3	\$0.36	0%	0%	\$0.02	0.00	0.00	AEG Research
Small Retail	Exterior Lighting	Commissioning	sqft	Existing	0.04	3	\$0.36	0%	0%	\$0.02	0.00	0.00	AEG Research
Small Retail	Refrigeration	Commissioning	sqft	Existing	0.00	3	\$0.36	0%	0%	\$0.02	0.00	0.00	AEG Research
Small Retail	Cooling	Retrocommissioning	sqft	Existing	0.27	3	\$0.23	10%	65%	\$0.02	6,386.79	6,733.64	AEG Research
Small Retail	Heating	Retrocommissioning	sqft	Existing	0.23	3	\$0.23	10%	65%	\$0.02	1,018.88	1,063.13	AEG Research
Small Retail	Ventilation	Retrocommissioning	sqft	Existing	0.05	3	\$0.23	10%	65%	\$0.02	1,116.28	1,349.12	AEG Research
Small Retail	Water Heating	Retrocommissioning	sqft	Existing	0.01	3	\$0.23	10%	65%	\$0.02	61.94	113.95	AEG Research
Small Retail	Interior Lighting	Retrocommissioning	sqft	Existing	0.14	3	\$0.23	10%	65%	\$0.02	2,948.00	4,350.22	AEG Research
Small Retail	Exterior Lighting	Retrocommissioning	sqft	Existing	0.04	3	\$0.23	10%	65%	\$0.02	845.97	1,311.69	AEG Research
Small Retail	Refrigeration	Retrocommissioning	sqft	Existing	0.00	3	\$0.23	10%	65%	\$0.02	48.56	56.56	AEG Research
Small Retail	Interior Lighting	Fruit Storage - Lighting Controls	sqft	Existing	0.09	10	\$0.09	0%	0%	\$0.07	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Retail	Refrigeration	Fruit Storage Refrigeration Retrofit	sqft	Existing	0.01	10	\$1.09	0%	0%	\$18.22	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Retail	Refrigeration	Fruit Storage Refrigeration Tuneup	sqft	Existing	0.00	3	\$0.23	0%	0%	\$40.34	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx

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Small Retail	Refrigeration	Fruit Storage Retrofit - CO2 Scrub	sqft	Existing	0.00	10	\$3.13	0%	0%	\$108.02	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Retail	Refrigeration	Fruit Storage Retrofit - Membrane	sqft	Existing	0.00	10	\$0.68	0%	0%	\$117.22	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Retail	Cooling	Insulation - Ceiling	sqft roof	New	0.00	45	\$1.28	15%	50%	\$0.23	0.00	0.00	Building Energy Simulation Tool
Small Retail	Heating	Insulation - Ceiling	sqft roof	New	0.24	45	\$1.28	15%	50%	\$0.23	345.94	348.02	Building Energy Simulation Tool
Small Retail	Ventilation	Insulation - Ceiling	sqft roof	New	0.04	45	\$1.28	15%	50%	\$0.23	306.85	333.62	Building Energy Simulation Tool
Small Retail	Cooling	Insulation - Ducting	sqft duct	New	0.52	20	\$0.84	15%	50%	\$0.09	1,119.40	1,122.48	Building Energy Simulation Tool
Small Retail	Heating	Insulation - Ducting	sqft duct	New	0.10	20	\$0.84	15%	50%	\$0.09	34.63	34.72	Building Energy Simulation Tool
Small Retail	Ventilation	Insulation - Ducting	sqft duct	New	0.02	20	\$0.84	15%	50%	\$0.09	30.56	32.89	Building Energy Simulation Tool
Small Retail	Cooling	Building Shell - Cool Roofs	sqft roof	New	0.12	20	\$0.78	45%	50%	\$1.46	144.37	145.34	Building Energy Simulation Tool
Small Retail	Heating	Building Shell - Cool Roofs	sqft roof	New	-0.07	20	\$0.78	45%	50%	\$1.46	-14.19	-14.22	Building Energy Simulation Tool
Small Retail	Ventilation	Building Shell - Cool Roofs	sqft roof	New	-0.01	20	\$0.78	45%	50%	\$1.46	-12.60	-13.53	Building Energy Simulation Tool
Small Retail	Cooling	Insulation - Wall Cavity	sqft wall	New	0.00	45	\$0.78	15%	50%	\$0.15	-6.09	-6.13	Building Energy Simulation Tool
Small Retail	Heating	Insulation - Wall Cavity	sqft wall	New	0.24	45	\$0.78	15%	50%	\$0.15	103.00	103.18	Building Energy Simulation Tool
Small Retail	Ventilation	Insulation - Wall Cavity	sqft wall	New	0.04	45	\$0.78	15%	50%	\$0.15	91.42	98.14	Building Energy Simulation Tool
Small Retail	Cooling	HVAC - Duct Repair and Sealing	tonCool	New	4.51	18	\$0.57	15%	50%	\$0.00	143.73	144.79	Building Energy Simulation Tool
Small Retail	Heating	HVAC - Duct Repair and Sealing	tonCool	New	11.21	18	\$0.57	15%	50%	\$0.00	60.00	60.19	Building Energy Simulation Tool
Small Retail	Ventilation	HVAC - Duct Repair and Sealing	tonCool	New	1.80	18	\$0.57	15%	50%	\$0.00	53.26	57.46	Building Energy Simulation Tool
Small Retail	Cooling	Windows - High Efficiency Glazing	sqft window	New	6.11	30	\$35.93	66%	66%	\$0.10	0.00	0.00	7th Power Plan
Small Retail	Heating	Windows - High Efficiency Glazing	sqft window	New	13.23	30	\$35.93	66%	66%	\$0.10	0.00	0.00	7th Power Plan

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Small Retail	Ventilation	Windows - High Efficiency Glazing	sqft window	New	1.22	30	\$35.93	66%	66%	\$0.10	0.00	0.00	7th Power Plan
Small Retail	Cooling	Chiller - Chilled Water Reset	ChillCtrl	New	0.00	10	\$884.85	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Small Retail	Cooling	Chiller - Chilled Water Variable-Flow System	HP cool	New	0.00	15	\$332.55	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Small Retail	Cooling	Chiller - Variable Speed Fans	HP fan	New	0.00	15	\$208.36	15%	75%	\$0.00	0.00	0.00	New Jersey TRM
Small Retail	Cooling	Water-Cooled Chiller - Condenser Water Reset	ChillCtrl	New	0.00	10	\$884.85	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Small Retail	Cooling	HVAC - Economizer	HP cool	New	86.79	10	\$168.42	18%	75%	\$0.20	1,670.84	1,702.86	AEG-BEST
Small Retail	Heating	Space Heating - Heat Recovery Ventilator	CFM	New	1.11	14	\$5.08	6%	75%	\$0.39	424.08	425.72	7th Power Plan
Small Retail	Ventilation	Ventilation - ECM on VAV Boxes	sqft	New	0.14	18	\$0.25	15%	20%	\$0.10	145.99	157.41	7th Power Plan
Small Retail	Ventilation	Ventilation - Variable Speed Control	sqft	New	0.03	15	\$181.39	19%	25%	\$312.48	25.56	29.84	AEG-BEST
Small Retail	Ventilation	Ventilation - Demand Controlled	sqft	New	0.01	15	\$0.25	15%	25%	\$2.10	9.32	10.88	7th Power Plan
Small Retail	Cooling	Destratification Fans (HVLS)	Strat Fan	New	3,658.52	15	\$7,270.90	15%	15%	\$0.05	0.00	0.00	AEG Research
Small Retail	Heating	Destratification Fans (HVLS)	Strat Fan	New	7,160.73	15	\$7,270.90	15%	15%	\$0.05	0.00	0.00	AEG Research
Small Retail	Cooling	RTU - Maintenance	tonCool	New	67.58	3	\$35.00	15%	45%	\$0.15	255.48	263.95	AEG Research
Small Retail	Cooling	RTU - Advanced Controls	sqft	New	0.28	15	\$0.07	15%	45%	\$0.02	1,632.65	1,648.96	7th Power Plan
Small Retail	Cooling	RTU - Evaporative Precooler	tonCool	New	131.58	15	\$681.62	15%	75%	\$0.40	7,252.48	7,269.85	AEG Research
Small Retail	Cooling	Ductless Mini Split Heat Pump	tonCool	New	252.72	15	\$3,359.26	15%	75%	\$0.54	278.56	294.74	7th Power Plan
Small Retail	Heating	Ductless Mini Split Heat Pump	tonCool	New	225.81	15	\$3,359.26	15%	75%	\$0.54	670.23	684.61	7th Power Plan
Small Retail	Cooling	Thermostat - WiFi/Interactive	sqft	New	0.49	5	\$0.66	30%	40%	\$0.11	134.69	138.42	7th Power Plan
Small Retail	Heating	Thermostat - WiFi/Interactive	sqft	New	0.50	5	\$0.66	30%	40%	\$0.11	23.27	23.39	7th Power Plan
Small Retail	Ventilation	Thermostat - WiFi/Interactive	sqft	New	0.08	5	\$0.66	30%	40%	\$0.11	20.53	23.88	7th Power Plan
Small Retail	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	New	17.04	10	\$8.35	25%	65%	\$0.03	18.12	28.90	Illinois TRM

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Small Retail	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	New	17.75	10	\$11.64	25%	65%	\$0.03	9.46	15.06	7th Power Plan
Small Retail	Water Heating	Water Heater - High Efficiency Circulation Pump	WHUnits	New	49.09	15	\$36.75	0%	0%	\$0.03	0.00	0.00	Hawaii TRM
Small Retail	Water Heating	Water Heater - Pipe Insulation	PipeFeet	New	52.25	15	\$14.88	1%	75%	\$0.01	61.68	91.81	AEG-BEST
Small Retail	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	New	11.52	4	\$144.04	25%	65%	\$1.34	4.95	8.69	7th Power Plan
Small Retail	Water Heating	Water Heater - Thermostat Setback	WHUnits	New	49.57	2	\$5.00	15%	75%	\$0.02	2.71	4.90	Illinois TRM
Small Retail	Water Heating	Water Heater - Solar System	PipeFeet	New	180.17	20	\$215.28	1%	30%	\$0.04	86.33	126.98	AEG-BEST
Small Retail	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.33	15	\$0.35	11%	23%	\$0.06	1,713.80	2,032.67	7th Power Plan
Small Retail	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.46	15	\$0.58	11%	23%	\$0.07	2,356.05	2,808.24	7th Power Plan
Small Retail	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	New	145.64	15	\$54.41	1%	3%	\$0.02	22.86	30.71	7th Power Plan
Small Retail	Interior Lighting	Interior Lighting - Timeclocks and Timers	occ sens	New	0.00	8	\$111.67	7%	15%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Small Retail	Interior Lighting	Interior Lighting - Skylights	1000 sqft	New	0.00	15	\$1,006.35	18%	25%	\$0.00	0.00	0.00	AEG Research
Small Retail	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	1000 sqft	New	195.28	16	\$1,807.69	5%	15%	\$0.47	227.66	303.78	7th Power Plan
Small Retail	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	New	1,852.44	11	\$30.80	15%	50%	\$0.00	631.38	837.58	Illinois TRM
Small Retail	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	ELtg Watts	New	1.49	8	\$0.63	15%	25%	\$0.03	225.60	346.38	7th Power Plan
Small Retail	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	New	51.78	8	\$55.10	15%	25%	\$0.08	118.71	180.88	Pacific Gas and Electric Research
Small Retail	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	New	63.48	7	\$3,400.00	15%	30%	\$4.28	188.51	298.33	AEG Research
Small Retail	Refrigeration	Refrigeration - Anti-Sweat Heater	Fridge Feet	New	2.66	8	\$48.18	4%	25%	\$2.28	0.60	0.73	7th Power Plan
Small Retail	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	New	2.98	4	\$10.44	4%	25%	\$0.79	0.39	0.49	Michigan Energy Measures Database
Small Retail	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	New	18.20	16	\$165.20	4%	25%	\$0.72	1.97	2.22	7th Power Plan

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Small Retail	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	New	4.47	15	\$335.85	0%	0%	\$6.12	0.00	0.00	7th Power Plan
Small Retail	Refrigeration	Refrigeration - Strip Curtain	Walkin Door	New	0.00	2	\$10.41	4%	25%	\$0.00	0.00	0.00	7th Power Plan
Small Retail	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	New	0.07	15	\$45.43	2%	13%	\$52.68	4.23	4.38	Annual Energy Outlook, 2015
Small Retail	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	New	1.46	15	\$313.82	2%	13%	\$17.55	7.36	7.62	Annual Energy Outlook, 2015
Small Retail	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	New	12.16	10	\$506.05	4%	25%	\$4.44	1.02	1.17	Vermont TRM
Small Retail	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	New	1.88	6	\$45.41	0%	0%	\$3.81	0.00	0.00	7th Power Plan
Small Retail	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	New	0.15	8	\$3.72	0%	0%	\$3.08	0.00	0.00	7th Power Plan
Small Retail	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	New	32.30	5	\$45.85	0%	0%	\$0.26	0.00	0.00	Illinois TRM
Small Retail	Refrigeration	Grocery - ECMs for Display Cases	Fridge Case	New	7.82	16	\$165.20	4%	25%	\$1.66	0.91	0.94	7th Power Plan
Small Retail	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	New	1,220.61	5	\$187.94	25%	75%	\$0.03	2.71	2.74	Illinois TRM
Small Retail	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	New	1,166.05	18	\$8,526.67	25%	50%	\$0.40	248.72	268.66	7th Power Plan
Small Retail	Office Equipment	Office Equipment - Smart Power Strips	Smart Strip	New	10.20	4	\$41.63	10%	50%	\$0.82	30.48	28.29	7th Power Plan
Small Retail	Cooling	Lodging - Guest Room Controls	LodgUnit	New	266.97	15	\$260.00	0%	0%	\$0.16	0.00	0.00	AEG-BEST
Small Retail	Heating	Lodging - Guest Room Controls	LodgUnit	New	-140.41	15	\$260.00	0%	0%	\$0.16	0.00	0.00	AEG-BEST
Small Retail	Office Equipment	Data Center - Best Practice Measures	sqft	New	0.02	5	\$0.00	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Retail	Cooling	Data Center - Commercially Available Measures	sqft	New	0.01	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Retail	Ventilation	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Retail	Interior Lighting	Data Center - Commercially Available Measures	sqft	New	0.03	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Retail	Office Equipment	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Small Retail	Cooling	Data Center - Cutting Edge Measures	sqft	New	0.04	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Retail	Office Equipment	Data Center - Cutting Edge Measures	sqft	New	0.00	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Retail	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	New	587.54	18	\$4,092.80	0%	0%	\$0.38	0.00	0.00	7th Power Plan
Small Retail	Miscellaneous	Pool Pump - Timer	perBldg	New	0.00	10	\$85.22	15%	75%	\$0.00	0.00	0.00	Ontario Power TRM
Small Retail	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	New	1,536.80	6	\$35.93	1%	3%	\$0.00	0.00	15.06	7th Power Plan
Small Retail	Cooling	Advanced New Construction Designs	sqft	New	0.88	25	\$4.11	10%	25%	\$0.07	3,550.96	3,601.69	AEG Research
Small Retail	Heating	Advanced New Construction Designs	sqft	New	0.92	25	\$4.11	10%	25%	\$0.07	632.47	630.99	AEG Research
Small Retail	Ventilation	Advanced New Construction Designs	sqft	New	0.15	25	\$4.11	10%	25%	\$0.07	561.00	607.79	AEG Research
Small Retail	Water Heating	Advanced New Construction Designs	sqft	New	0.09	25	\$4.11	10%	25%	\$0.07	123.40	149.50	AEG Research
Small Retail	Interior Lighting	Advanced New Construction Designs	sqft	New	0.66	25	\$4.11	10%	25%	\$0.07	2,086.34	2,415.99	AEG Research
Small Retail	Exterior Lighting	Advanced New Construction Designs	sqft	New	0.19	25	\$4.11	10%	25%	\$0.07	602.09	703.35	AEG Research
Small Retail	Cooling	Strategic Energy Management	sqft	New	0.15	3	\$0.09	0%	3%	\$0.01	11.22	11.63	AEG Research
Small Retail	Heating	Strategic Energy Management	sqft	New	0.15	3	\$0.09	0%	3%	\$0.01	1.91	1.92	AEG Research
Small Retail	Ventilation	Strategic Energy Management	sqft	New	0.02	3	\$0.09	0%	3%	\$0.01	1.69	1.99	AEG Research
Small Retail	Water Heating	Strategic Energy Management	sqft	New	0.01	3	\$0.09	0%	3%	\$0.01	0.37	0.65	AEG Research
Small Retail	Interior Lighting	Strategic Energy Management	sqft	New	0.11	3	\$0.09	0%	3%	\$0.01	6.45	9.81	AEG Research
Small Retail	Exterior Lighting	Strategic Energy Management	sqft	New	0.03	3	\$0.09	0%	3%	\$0.01	1.79	3.12	AEG Research
Small Retail	Refrigeration	Strategic Energy Management	sqft	New	0.00	3	\$0.09	0%	3%	\$0.01	0.08	0.08	AEG Research
Small Retail	Office Equipment	Strategic Energy Management	sqft	New	0.01	3	\$0.09	0%	3%	\$0.01	0.81	0.76	AEG Research
Small Retail	Cooling	Commissioning	sqft	New	0.20	3	\$0.27	10%	65%	\$0.01	284.91	295.11	AEG Research

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Small Retail	Heating	Commissioning	sqft	New	0.20	3	\$0.27	10%	65%	\$0.01	48.37	48.80	AEG Research
Small Retail	Ventilation	Commissioning	sqft	New	0.03	3	\$0.27	10%	65%	\$0.01	42.94	50.48	AEG Research
Small Retail	Water Heating	Commissioning	sqft	New	0.01	3	\$0.27	10%	65%	\$0.01	3.09	5.47	AEG Research
Small Retail	Interior Lighting	Commissioning	sqft	New	0.12	3	\$0.27	10%	65%	\$0.01	136.50	207.48	AEG Research
Small Retail	Exterior Lighting	Commissioning	sqft	New	0.03	3	\$0.27	10%	65%	\$0.01	37.88	65.94	AEG Research
Small Retail	Refrigeration	Commissioning	sqft	New	0.00	3	\$0.27	10%	65%	\$0.01	3.25	3.53	AEG Research
Small Retail	Cooling	Retrocommissioning	sqft	New	0.20	3	\$0.17	0%	0%	\$0.01	0.00	0.00	AEG Research
Small Retail	Heating	Retrocommissioning	sqft	New	0.20	3	\$0.17	0%	0%	\$0.01	0.00	0.00	AEG Research
Small Retail	Ventilation	Retrocommissioning	sqft	New	0.03	3	\$0.17	0%	0%	\$0.01	0.00	0.00	AEG Research
Small Retail	Water Heating	Retrocommissioning	sqft	New	0.01	3	\$0.17	0%	0%	\$0.01	0.00	0.00	AEG Research
Small Retail	Interior Lighting	Retrocommissioning	sqft	New	0.12	3	\$0.17	0%	0%	\$0.01	0.00	0.00	AEG Research
Small Retail	Exterior Lighting	Retrocommissioning	sqft	New	0.03	3	\$0.17	0%	0%	\$0.01	0.00	0.00	AEG Research
Small Retail	Refrigeration	Retrocommissioning	sqft	New	0.00	3	\$0.17	0%	0%	\$0.01	0.00	0.00	AEG Research
Small Retail	Interior Lighting	Fruit Storage - Lighting Controls	sqft	New	0.08	10	\$0.09	0%	0%	\$0.07	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Retail	Refrigeration	Fruit Storage Refrigeration Retrofit	sqft	New	0.01	10	\$1.09	0%	0%	\$13.33	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Retail	Refrigeration	Fruit Storage Refrigeration Tuneup	sqft	New	0.00	3	\$0.23	0%	0%	\$29.52	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Retail	Refrigeration	Fruit Storage Retrofit - CO2 Scrub	sqft	New	0.00	10	\$3.13	0%	0%	\$79.03	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Retail	Refrigeration	Fruit Storage Retrofit - Membrane	sqft	New	0.00	10	\$0.68	0%	0%	\$85.76	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Restaurant	Cooling	Insulation - Ceiling	sqft roof	Existing	0.04	45	\$1.28	15%	35%	\$0.12	53.59	57.32	Building Energy Simulation Tool
Restaurant	Heating	Insulation - Ceiling	sqft roof	Existing	0.35	45	\$1.28	15%	35%	\$0.12	87.53	91.16	Building Energy Simulation Tool
Restaurant	Ventilation	Insulation - Ceiling	sqft roof	Existing	0.16	45	\$1.28	15%	35%	\$0.12	221.82	251.03	Building Energy Simulation Tool
Restaurant	Cooling	Insulation - Ducting	sqft duct	Existing	0.04	20	\$0.84	15%	35%	\$0.00	12.05	13.31	Building Energy Simulation Tool

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Restaurant	Heating	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.84	15%	35%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Restaurant	Ventilation	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.84	15%	35%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Restaurant	Cooling	Building Shell - Cool Roofs	sqft roof	Existing	0.26	20	\$0.78	45%	50%	\$10.00	86.94	96.02	Building Energy Simulation Tool
Restaurant	Heating	Building Shell - Cool Roofs	sqft roof	Existing	-0.20	20	\$0.78	45%	50%	\$10.00	-12.01	-12.90	Building Energy Simulation Tool
Restaurant	Ventilation	Building Shell - Cool Roofs	sqft roof	Existing	-0.09	20	\$0.78	45%	50%	\$10.00	-31.77	-36.52	Building Energy Simulation Tool
Restaurant	Cooling	Insulation - Wall Cavity	sqft wall	Existing	-0.50	45	\$0.78	15%	35%	\$0.09	-427.26	-437.26	Building Energy Simulation Tool
Restaurant	Heating	Insulation - Wall Cavity	sqft wall	Existing	0.68	45	\$0.78	15%	35%	\$0.09	102.21	103.38	Building Energy Simulation Tool
Restaurant	Ventilation	Insulation - Wall Cavity	sqft wall	Existing	0.30	45	\$0.78	15%	35%	\$0.09	267.40	288.58	Building Energy Simulation Tool
Restaurant	Cooling	HVAC - Duct Repair and Sealing	tonCool	Existing	-3.67	18	\$0.57	15%	50%	\$10.00	-49.04	-54.19	Building Energy Simulation Tool
Restaurant	Heating	HVAC - Duct Repair and Sealing	tonCool	Existing	-6.58	18	\$0.57	15%	50%	\$10.00	-15.89	-17.10	Building Energy Simulation Tool
Restaurant	Ventilation	HVAC - Duct Repair and Sealing	tonCool	Existing	-2.98	18	\$0.57	15%	50%	\$10.00	-42.03	-48.41	Building Energy Simulation Tool
Restaurant	Cooling	Windows - High Efficiency Glazing	sqft window	Existing	7.45	30	\$35.93	48%	48%	\$0.10	0.00	0.00	7th Power Plan
Restaurant	Heating	Windows - High Efficiency Glazing	sqft window	Existing	10.31	30	\$35.93	48%	48%	\$0.10	0.00	0.00	7th Power Plan
Restaurant	Ventilation	Windows - High Efficiency Glazing	sqft window	Existing	2.60	30	\$35.93	48%	48%	\$0.10	0.00	0.00	7th Power Plan
Restaurant	Cooling	Chiller - Chilled Water Reset	ChillCtrl	Existing	0.00	10	\$884.85	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Restaurant	Cooling	Chiller - Chilled Water Variable-Flow System	HP cool	Existing	0.00	15	\$332.55	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Restaurant	Cooling	Chiller - Variable Speed Fans	HP fan	Existing	0.00	15	\$208.36	15%	75%	\$0.00	0.00	0.00	New Jersey TRM
Restaurant	Cooling	Water-Cooled Chiller - Condenser Water Reset	ChillCtrl	Existing	0.00	10	\$884.85	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Restaurant	Cooling	HVAC - Economizer	HP cool	Existing	138.09	10	\$168.42	18%	75%	\$0.13	2,470.91	2,620.47	AEG-BEST

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Restaurant	Heating	Space Heating - Heat Recovery Ventilator	CFM	Existing	0.51	14	\$5.08	3%	75%	\$0.83	340.59	366.42	7th Power Plan
Restaurant	Ventilation	Ventilation - ECM on VAV Boxes	sqft	Existing	0.51	18	\$0.25	15%	20%	\$0.03	187.31	203.97	7th Power Plan
Restaurant	Ventilation	Ventilation - Variable Speed Control	sqft	Existing	0.12	15	\$181.39	13%	50%	\$105.67	348.98	421.44	AEG-BEST
Restaurant	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.03	15	\$0.25	15%	25%	\$0.71	19.25	23.23	7th Power Plan
Restaurant	Cooling	Destratification Fans (HVLS)	Strat Fan	Existing	8,294.29	15	\$7,270.90	15%	15%	\$0.03	0.00	0.00	AEG Research
Restaurant	Heating	Destratification Fans (HVLS)	Strat Fan	Existing	10,125.91	15	\$7,270.90	15%	15%	\$0.03	0.00	0.00	AEG Research
Restaurant	Cooling	RTU - Maintenance	tonCool	Existing	59.43	3	\$35.00	15%	45%	\$0.16	668.40	734.09	AEG Research
Restaurant	Cooling	RTU - Advanced Controls	sqft	Existing	0.37	15	\$0.07	15%	45%	\$0.01	691.86	704.59	7th Power Plan
Restaurant	Cooling	RTU - Evaporative Precooler	tonCool	Existing	116.50	15	\$681.62	15%	75%	\$0.44	2,317.09	2,428.78	AEG Research
Restaurant	Cooling	Ductless Mini Split Heat Pump	tonCool	Existing	266.84	15	\$3,359.26	15%	75%	\$0.57	200.63	233.92	7th Power Plan
Restaurant	Heating	Ductless Mini Split Heat Pump	tonCool	Existing	173.63	15	\$3,359.26	15%	75%	\$0.57	41.14	44.48	7th Power Plan
Restaurant	Cooling	Thermostat - WiFi/Interactive	sqft	Existing	1.08	5	\$0.66	30%	40%	\$0.05	745.29	790.63	7th Power Plan
Restaurant	Heating	Thermostat - WiFi/Interactive	sqft	Existing	0.71	5	\$0.66	30%	40%	\$0.05	88.57	91.51	7th Power Plan
Restaurant	Ventilation	Thermostat - WiFi/Interactive	sqft	Existing	0.31	5	\$0.66	30%	40%	\$0.05	224.46	251.92	7th Power Plan
Restaurant	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	Existing	101.27	10	\$8.35	25%	65%	\$0.01	219.14	387.24	Illinois TRM
Restaurant	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	Existing	104.65	10	\$11.64	25%	65%	\$0.01	112.73	201.28	7th Power Plan
Restaurant	Water Heating	Water Heater - High Efficiency Circulation Pump	WHUnits	Existing	57.94	15	\$36.75	0%	0%	\$0.03	0.00	0.00	Hawaii TRM
Restaurant	Water Heating	Water Heater - Pipe Insulation	PipeFeet	Existing	312.85	15	\$14.88	16%	75%	\$0.00	416.41	707.79	AEG-BEST
Restaurant	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	Existing	65.85	4	\$144.04	25%	65%	\$0.28	136.09	251.98	7th Power Plan
Restaurant	Water Heating	Water Heater - Thermostat Setback	WHUnits	Existing	58.78	2	\$5.00	15%	75%	\$0.02	200.87	365.44	Illinois TRM
Restaurant	Water Heating	Water Heater - Solar System	PipeFeet	Existing	1,057.25	20	\$215.28	1%	30%	\$0.01	678.03	1,191.70	AEG-BEST

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Restaurant	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.55	15	\$0.35	3%	23%	\$0.04	1,028.18	1,248.05	7th Power Plan
Restaurant	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.77	15	\$0.58	3%	23%	\$0.04	1,392.99	1,722.26	7th Power Plan
Restaurant	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	Existing	102.41	15	\$54.41	1%	3%	\$0.03	32.71	48.79	7th Power Plan
Restaurant	Interior Lighting	Interior Lighting - Timeclocks and Timers	occ sens	Existing	0.00	8	\$111.67	7%	15%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Restaurant	Interior Lighting	Interior Lighting - Skylights	1000 sqft	Existing	0.00	15	\$1,006.35	15%	25%	\$0.00	0.00	0.00	AEG Research
Restaurant	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	1000 sqft	Existing	214.32	16	\$1,807.69	5%	15%	\$0.45	147.57	229.89	7th Power Plan
Restaurant	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	Existing	2,047.72	11	\$30.80	15%	50%	\$0.00	521.85	740.63	Illinois TRM
Restaurant	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	ELtg Watts	Existing	1.22	8	\$0.63	15%	25%	\$0.05	632.75	950.34	7th Power Plan
Restaurant	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	Existing	65.57	8	\$55.10	15%	25%	\$0.07	310.97	488.84	Pacific Gas and Electric Research
Restaurant	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	Existing	80.50	7	\$3,400.00	15%	30%	\$3.98	568.62	907.22	AEG Research
Restaurant	Refrigeration	Refrigeration - Anti-Sweat Heater	Fridge Feet	Existing	67.68	8	\$48.18	11%	75%	\$0.08	50.05	82.15	7th Power Plan
Restaurant	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	Existing	344.49	4	\$10.44	5%	35%	\$0.01	1,016.42	1,332.75	Michigan Energy Measures Database
Restaurant	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	Existing	2,318.66	16	\$165.20	11%	75%	\$0.01	4,677.12	5,845.63	7th Power Plan
Restaurant	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	Existing	83.88	15	\$335.85	0%	0%	\$0.27	0.00	0.00	7th Power Plan
Restaurant	Refrigeration	Refrigeration - Strip Curtain	WalkIn Door	Existing	102.37	2	\$10.41	11%	75%	\$0.04	1,692.90	2,346.78	7th Power Plan
Restaurant	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	Existing	1.25	15	\$45.43	6%	38%	\$2.29	1,707.98	2,458.46	Annual Energy Outlook, 2015
Restaurant	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	Existing	27.33	15	\$313.82	6%	38%	\$0.76	3,177.26	4,376.33	Annual Energy Outlook, 2015
Restaurant	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	Existing	1,404.10	10	\$506.05	11%	75%	\$0.04	2,748.51	3,708.93	Vermont TRM
Restaurant	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	Existing	38.43	6	\$45.41	0%	0%	\$0.15	0.00	0.00	7th Power Plan

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Restaurant	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	Existing	3.10	8	\$3.72	0%	0%	\$0.12	0.00	0.00	7th Power Plan
Restaurant	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	Existing	738.40	5	\$45.85	0%	0%	\$0.01	0.00	0.00	Illinois TRM
Restaurant	Refrigeration	Grocery - ECMs for Display Cases	Fridge Case	Existing	167.01	16	\$165.20	11%	75%	\$0.07	43.59	56.49	7th Power Plan
Restaurant	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	Existing	1,145.63	5	\$187.94	25%	75%	\$0.03	1,725.63	1,916.87	Illinois TRM
Restaurant	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	Existing	4,197.32	18	\$8,526.67	25%	50%	\$0.14	306.65	340.39	7th Power Plan
Restaurant	Office Equipment	Office Equipment - Smart Power Strips	Smart Strip	Existing	31.34	4	\$41.63	10%	50%	\$0.27	236.59	203.88	7th Power Plan
Restaurant	Cooling	Lodging - Guest Room Controls	LodgUnit	Existing	415.63	15	\$260.00	0%	0%	\$0.08	0.00	0.00	AEG-BEST
Restaurant	Heating	Lodging - Guest Room Controls	LodgUnit	Existing	-160.17	15	\$260.00	0%	0%	\$0.08	0.00	0.00	AEG-BEST
Restaurant	Office Equipment	Data Center - Best Practice Measures	sqft	Existing	0.06	5	\$0.01	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Restaurant	Cooling	Data Center - Commercially Available Measures	sqft	Existing	0.02	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Restaurant	Ventilation	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Restaurant	Interior Lighting	Data Center - Commercially Available Measures	sqft	Existing	0.05	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Restaurant	Office Equipment	Data Center - Commercially Available Measures	sqft	Existing	0.02	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Restaurant	Cooling	Data Center - Cutting Edge Measures	sqft	Existing	0.09	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Restaurant	Office Equipment	Data Center - Cutting Edge Measures	sqft	Existing	0.01	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Restaurant	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	Existing	760.56	18	\$4,092.80	0%	0%	\$0.35	0.00	0.00	7th Power Plan
Restaurant	Miscellaneous	Pool Pump - Timer	perBldg	Existing	0.00	10	\$85.22	15%	75%	\$0.00	0.00	0.00	Ontario Power TRM
Restaurant	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	Existing	1,986.88	6	\$35.93	1%	3%	\$0.00	0.00	122.39	7th Power Plan
Restaurant	Cooling	Advanced New Construction Designs	sqft	Existing	1.50	25	\$4.11	0%	0%	\$0.03	0.00	0.00	AEG Research

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Restaurant	Heating	Advanced New Construction Designs	sqft	Existing	1.24	25	\$4.11	0%	0%	\$0.03	0.00	0.00	AEG Research
Restaurant	Ventilation	Advanced New Construction Designs	sqft	Existing	0.53	25	\$4.11	0%	0%	\$0.03	0.00	0.00	AEG Research
Restaurant	Water Heating	Advanced New Construction Designs	sqft	Existing	1.38	25	\$4.11	0%	0%	\$0.03	0.00	0.00	AEG Research
Restaurant	Interior Lighting	Advanced New Construction Designs	sqft	Existing	1.47	25	\$4.11	0%	0%	\$0.03	0.00	0.00	AEG Research
Restaurant	Exterior Lighting	Advanced New Construction Designs	sqft	Existing	0.62	25	\$4.11	0%	0%	\$0.03	0.00	0.00	AEG Research
Restaurant	Cooling	Strategic Energy Management	sqft	Existing	0.32	3	\$0.93	0%	0%	\$0.04	0.00	0.00	AEG Research
Restaurant	Heating	Strategic Energy Management	sqft	Existing	0.21	3	\$0.93	0%	0%	\$0.04	0.00	0.00	AEG Research
Restaurant	Ventilation	Strategic Energy Management	sqft	Existing	0.09	3	\$0.93	0%	0%	\$0.04	0.00	0.00	AEG Research
Restaurant	Water Heating	Strategic Energy Management	sqft	Existing	0.21	3	\$0.93	0%	0%	\$0.04	0.00	0.00	AEG Research
Restaurant	Interior Lighting	Strategic Energy Management	sqft	Existing	0.19	3	\$0.93	0%	0%	\$0.04	0.00	0.00	AEG Research
Restaurant	Exterior Lighting	Strategic Energy Management	sqft	Existing	0.08	3	\$0.93	0%	0%	\$0.04	0.00	0.00	AEG Research
Restaurant	Refrigeration	Strategic Energy Management	sqft	Existing	0.30	3	\$0.93	0%	0%	\$0.04	0.00	0.00	AEG Research
Restaurant	Office Equipment	Strategic Energy Management	sqft	Existing	0.04	3	\$0.93	0%	0%	\$0.04	0.00	0.00	AEG Research
Restaurant	Cooling	Commissioning	sqft	Existing	0.47	3	\$1.28	0%	0%	\$0.02	0.00	0.00	AEG Research
Restaurant	Heating	Commissioning	sqft	Existing	0.29	3	\$1.28	0%	0%	\$0.02	0.00	0.00	AEG Research
Restaurant	Ventilation	Commissioning	sqft	Existing	0.13	3	\$1.28	0%	0%	\$0.02	0.00	0.00	AEG Research
Restaurant	Water Heating	Commissioning	sqft	Existing	0.10	3	\$1.28	0%	0%	\$0.02	0.00	0.00	AEG Research
Restaurant	Interior Lighting	Commissioning	sqft	Existing	0.22	3	\$1.28	0%	0%	\$0.02	0.00	0.00	AEG Research
Restaurant	Exterior Lighting	Commissioning	sqft	Existing	0.10	3	\$1.28	0%	0%	\$0.02	0.00	0.00	AEG Research
Restaurant	Refrigeration	Commissioning	sqft	Existing	0.71	3	\$1.28	0%	0%	\$0.02	0.00	0.00	AEG Research
Restaurant	Cooling	Retrocommissioning	sqft	Existing	0.47	3	\$0.82	24%	79%	\$0.02	1,954.48	2,033.21	AEG Research
Restaurant	Heating	Retrocommissioning	sqft	Existing	0.29	3	\$0.82	24%	79%	\$0.02	218.55	225.21	AEG Research

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Restaurant	Ventilation	Retrocommissioning	sqft	Existing	0.13	3	\$0.82	24%	79%	\$0.02	565.14	643.09	AEG Research
Restaurant	Water Heating	Retrocommissioning	sqft	Existing	0.10	3	\$0.82	24%	79%	\$0.02	130.65	240.23	AEG Research
Restaurant	Interior Lighting	Retrocommissioning	sqft	Existing	0.23	3	\$0.82	24%	79%	\$0.02	869.67	1,354.54	AEG Research
Restaurant	Exterior Lighting	Retrocommissioning	sqft	Existing	0.10	3	\$0.82	24%	79%	\$0.02	377.42	583.03	AEG Research
Restaurant	Refrigeration	Retrocommissioning	sqft	Existing	0.71	3	\$0.82	24%	79%	\$0.02	2,798.44	3,718.43	AEG Research
Restaurant	Interior Lighting	Fruit Storage - Lighting Controls	sqft	Existing	0.17	10	\$0.09	0%	0%	\$0.04	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Restaurant	Refrigeration	Fruit Storage Refrigeration Retrofit	sqft	Existing	2.21	10	\$1.09	0%	0%	\$0.04	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Restaurant	Refrigeration	Fruit Storage Refrigeration Tuneup	sqft	Existing	0.55	3	\$0.23	0%	0%	\$0.10	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Restaurant	Refrigeration	Fruit Storage Retrofit - CO2 Scrub	sqft	Existing	1.02	10	\$3.13	0%	0%	\$0.27	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Restaurant	Refrigeration	Fruit Storage Retrofit - Membrane	sqft	Existing	0.20	10	\$0.68	0%	0%	\$0.29	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Restaurant	Cooling	Insulation - Ceiling	sqft roof	New	0.00	45	\$1.28	15%	50%	\$0.37	0.00	0.00	Building Energy Simulation Tool
Restaurant	Heating	Insulation - Ceiling	sqft roof	New	0.13	45	\$1.28	15%	50%	\$0.37	28.28	28.50	Building Energy Simulation Tool
Restaurant	Ventilation	Insulation - Ceiling	sqft roof	New	0.05	45	\$1.28	15%	50%	\$0.37	62.52	65.30	Building Energy Simulation Tool
Restaurant	Cooling	Insulation - Ducting	sqft duct	New	0.23	20	\$0.84	15%	50%	\$0.00	78.80	79.51	Building Energy Simulation Tool
Restaurant	Heating	Insulation - Ducting	sqft duct	New	0.00	20	\$0.84	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Restaurant	Ventilation	Insulation - Ducting	sqft duct	New	0.00	20	\$0.84	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Restaurant	Cooling	Building Shell - Cool Roofs	sqft roof	New	0.04	20	\$0.78	45%	50%	\$10.00	8.63	8.82	Building Energy Simulation Tool
Restaurant	Heating	Building Shell - Cool Roofs	sqft roof	New	-0.05	20	\$0.78	45%	50%	\$10.00	-1.42	-1.42	Building Energy Simulation Tool
Restaurant	Ventilation	Building Shell - Cool Roofs	sqft roof	New	-0.02	20	\$0.78	45%	50%	\$10.00	-3.17	-3.31	Building Energy Simulation Tool
Restaurant	Cooling	Insulation - Wall Cavity	sqft wall	New	-0.03	45	\$0.78	15%	50%	\$0.76	-23.38	-23.54	Building Energy Simulation Tool

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Restaurant	Heating	Insulation - Wall Cavity	sqft wall	New	0.06	45	\$0.78	15%	50%	\$0.76	7.83	7.85	Building Energy Simulation Tool
Restaurant	Ventilation	Insulation - Wall Cavity	sqft wall	New	0.02	45	\$0.78	15%	50%	\$0.76	17.56	18.15	Building Energy Simulation Tool
Restaurant	Cooling	HVAC - Duct Repair and Sealing	tonCool	New	0.33	18	\$0.57	15%	35%	\$10.00	1.38	1.41	Building Energy Simulation Tool
Restaurant	Heating	HVAC - Duct Repair and Sealing	tonCool	New	-3.88	18	\$0.57	15%	35%	\$10.00	-2.62	-2.64	Building Energy Simulation Tool
Restaurant	Ventilation	HVAC - Duct Repair and Sealing	tonCool	New	-1.53	18	\$0.57	15%	35%	\$10.00	-5.86	-6.14	Building Energy Simulation Tool
Restaurant	Cooling	Windows - High Efficiency Glazing	sqft window	New	5.82	30	\$35.93	66%	66%	\$0.11	0.00	0.00	7th Power Plan
Restaurant	Heating	Windows - High Efficiency Glazing	sqft window	New	10.10	30	\$35.93	66%	66%	\$0.11	0.00	0.00	7th Power Plan
Restaurant	Ventilation	Windows - High Efficiency Glazing	sqft window	New	2.25	30	\$35.93	66%	66%	\$0.11	0.00	0.00	7th Power Plan
Restaurant	Cooling	Chiller - Chilled Water Reset	ChillCtrl	New	0.00	10	\$884.85	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Restaurant	Cooling	Chiller - Chilled Water Variable-Flow System	HP cool	New	0.00	15	\$332.55	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Restaurant	Cooling	Chiller - Variable Speed Fans	HP fan	New	0.00	15	\$208.36	15%	75%	\$0.00	0.00	0.00	New Jersey TRM
Restaurant	Cooling	Water-Cooled Chiller - Condenser Water Reset	ChillCtrl	New	0.00	10	\$884.85	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Restaurant	Cooling	HVAC - Economizer	HP cool	New	105.18	10	\$168.42	18%	75%	\$0.17	470.91	479.45	AEG-BEST
Restaurant	Heating	Space Heating - Heat Recovery Ventilator	CFM	New	0.50	14	\$5.08	6%	75%	\$0.86	89.03	90.92	7th Power Plan
Restaurant	Ventilation	Ventilation - ECM on VAV Boxes	sqft	New	0.41	18	\$0.25	15%	20%	\$0.04	68.57	71.06	7th Power Plan
Restaurant	Ventilation	Ventilation - Variable Speed Control	sqft	New	0.10	15	\$181.39	19%	50%	\$129.51	66.84	72.81	AEG-BEST
Restaurant	Ventilation	Ventilation - Demand Controlled	sqft	New	0.02	15	\$0.25	15%	25%	\$0.87	4.42	4.82	7th Power Plan
Restaurant	Cooling	Destratification Fans (HVLS)	Strat Fan	New	6,355.45	15	\$7,270.90	15%	15%	\$0.04	0.00	0.00	AEG Research
Restaurant	Heating	Destratification Fans (HVLS)	Strat Fan	New	9,997.83	15	\$7,270.90	15%	15%	\$0.04	0.00	0.00	AEG Research
Restaurant	Cooling	RTU - Maintenance	tonCool	New	80.41	3	\$35.00	15%	45%	\$0.12	70.13	72.35	AEG Research
Restaurant	Cooling	RTU - Advanced Controls	sqft	New	0.48	15	\$0.07	15%	45%	\$0.01	448.01	452.19	7th Power Plan

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Restaurant	Cooling	RTU - Evaporative Precooler	tonCool	New	154.95	15	\$681.62	15%	75%	\$0.34	1,955.58	1,969.65	AEG Research
Restaurant	Cooling	Ductless Mini Split Heat Pump	tonCool	New	343.13	15	\$3,359.26	15%	75%	\$0.49	107.20	112.91	7th Power Plan
Restaurant	Heating	Ductless Mini Split Heat Pump	tonCool	New	183.13	15	\$3,359.26	15%	75%	\$0.49	14.57	14.77	7th Power Plan
Restaurant	Cooling	Thermostat - WiFi/Interactive	sqft	New	0.84	5	\$0.66	30%	40%	\$0.06	37.69	39.35	7th Power Plan
Restaurant	Heating	Thermostat - WiFi/Interactive	sqft	New	0.69	5	\$0.66	30%	40%	\$0.06	4.91	5.02	7th Power Plan
Restaurant	Ventilation	Thermostat - WiFi/Interactive	sqft	New	0.27	5	\$0.66	30%	40%	\$0.06	10.85	12.09	7th Power Plan
Restaurant	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	New	82.07	10	\$8.35	25%	65%	\$0.01	40.81	65.17	Illinois TRM
Restaurant	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	New	85.48	10	\$11.64	25%	65%	\$0.01	21.30	33.96	7th Power Plan
Restaurant	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	New	48.99	15	\$36.75	0%	0%	\$0.03	0.00	0.00	Hawaii TRM
Restaurant	Water Heating	Water Heater - Pipe Insulation	PipeFeet	New	251.29	15	\$14.88	1%	75%	\$0.00	138.99	206.88	AEG-BEST
Restaurant	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	New	55.34	4	\$144.04	25%	65%	\$0.28	11.13	19.55	7th Power Plan
Restaurant	Water Heating	Water Heater - Thermostat Setback	WHunits	New	49.19	2	\$5.00	15%	75%	\$0.02	5.97	10.88	Illinois TRM
Restaurant	Water Heating	Water Heater - Solar System	PipeFeet	New	867.15	20	\$215.28	1%	30%	\$0.01	194.38	286.12	AEG-BEST
Restaurant	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.53	15	\$0.35	11%	23%	\$0.03	480.92	573.17	7th Power Plan
Restaurant	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.73	15	\$0.58	11%	23%	\$0.04	662.43	793.07	7th Power Plan
Restaurant	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	New	95.27	15	\$54.41	1%	3%	\$0.03	7.17	10.06	7th Power Plan
Restaurant	Interior Lighting	Interior Lighting - Timeclocks and Timers	occ sens	New	0.00	8	\$111.67	7%	15%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Restaurant	Interior Lighting	Interior Lighting - Skylights	1000 sqft	New	0.00	15	\$1,006.35	18%	25%	\$0.00	0.00	0.00	AEG Research
Restaurant	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	1000 sqft	New	174.99	16	\$1,807.69	5%	15%	\$0.49	36.71	49.14	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Restaurant	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	New	1,645.08	11	\$30.80	15%	50%	\$0.00	101.00	134.92	Illinois TRM
Restaurant	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	ELtg Watts	New	1.03	8	\$0.63	15%	25%	\$0.05	100.24	151.71	7th Power Plan
Restaurant	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	New	57.70	8	\$55.10	15%	25%	\$0.07	52.75	79.24	Pacific Gas and Electric Research
Restaurant	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	New	70.73	7	\$3,400.00	15%	30%	\$3.88	83.76	130.48	AEG Research
Restaurant	Refrigeration	Refrigeration - Anti-Sweat Heater	Fridge Feet	New	57.64	8	\$48.18	11%	75%	\$0.10	9.01	10.87	7th Power Plan
Restaurant	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	New	325.64	4	\$10.44	5%	35%	\$0.01	78.20	90.30	Michigan Energy Measures Database
Restaurant	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	New	2,049.35	16	\$165.20	11%	75%	\$0.01	1,217.77	1,317.45	7th Power Plan
Restaurant	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	New	89.25	15	\$335.85	0%	0%	\$0.29	0.00	0.00	7th Power Plan
Restaurant	Refrigeration	Refrigeration - Strip Curtain	Walkin Door	New	99.49	2	\$10.41	11%	75%	\$0.04	51.13	61.96	7th Power Plan
Restaurant	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	New	1.37	15	\$45.43	6%	38%	\$2.49	592.41	609.82	Annual Energy Outlook, 2015
Restaurant	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	New	29.08	15	\$313.82	6%	38%	\$0.83	1,043.96	1,077.87	Annual Energy Outlook, 2015
Restaurant	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	New	1,326.18	10	\$506.05	11%	75%	\$0.04	614.39	671.35	Vermont TRM
Restaurant	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	New	40.86	6	\$45.41	0%	0%	\$0.17	0.00	0.00	7th Power Plan
Restaurant	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	New	3.29	8	\$3.72	0%	0%	\$0.13	0.00	0.00	7th Power Plan
Restaurant	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	New	724.84	5	\$45.85	0%	0%	\$0.01	0.00	0.00	Illinois TRM
Restaurant	Refrigeration	Grocery - ECMs for Display Cases	Fridge Case	New	169.33	16	\$165.20	11%	75%	\$0.07	13.69	13.98	7th Power Plan
Restaurant	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	New	1,173.17	5	\$187.94	25%	75%	\$0.03	189.51	192.13	Illinois TRM
Restaurant	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	New	3,423.70	18	\$8,526.67	25%	50%	\$0.17	116.96	121.25	7th Power Plan
Restaurant	Office Equipment	Office Equipment - Smart Power Strips	Smart Strip	New	32.19	4	\$41.63	10%	50%	\$0.26	17.18	15.32	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Restaurant	Cooling	Lodging - Guest Room Controls	LodgUnit	New	514.62	15	\$260.00	0%	0%	\$0.06	0.00	0.00	AEG-BEST
Restaurant	Heating	Lodging - Guest Room Controls	LodgUnit	New	-161.06	15	\$260.00	0%	0%	\$0.06	0.00	0.00	AEG-BEST
Restaurant	Office Equipment	Data Center - Best Practice Measures	sqft	New	0.06	5	\$0.01	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Restaurant	Cooling	Data Center - Commercially Available Measures	sqft	New	0.02	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Restaurant	Ventilation	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Restaurant	Interior Lighting	Data Center - Commercially Available Measures	sqft	New	0.05	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Restaurant	Office Equipment	Data Center - Commercially Available Measures	sqft	New	0.02	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Restaurant	Cooling	Data Center - Cutting Edge Measures	sqft	New	0.07	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Restaurant	Office Equipment	Data Center - Cutting Edge Measures	sqft	New	0.01	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Restaurant	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	New	618.50	18	\$4,092.80	0%	0%	\$0.44	0.00	0.00	7th Power Plan
Restaurant	Miscellaneous	Pool Pump - Timer	perBldg	New	0.00	10	\$85.22	15%	75%	\$0.00	0.00	0.00	Ontario Power TRM
Restaurant	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	New	1,986.88	6	\$35.93	1%	3%	\$0.00	0.00	9.32	7th Power Plan
Restaurant	Cooling	Advanced New Construction Designs	sqft	New	1.59	25	\$4.11	10%	25%	\$0.03	1,065.61	1,065.73	AEG Research
Restaurant	Heating	Advanced New Construction Designs	sqft	New	1.32	25	\$4.11	10%	25%	\$0.03	138.76	138.95	AEG Research
Restaurant	Ventilation	Advanced New Construction Designs	sqft	New	0.51	25	\$4.11	10%	25%	\$0.03	306.80	318.50	AEG Research
Restaurant	Water Heating	Advanced New Construction Designs	sqft	New	1.18	25	\$4.11	10%	25%	\$0.03	271.70	329.10	AEG Research
Restaurant	Interior Lighting	Advanced New Construction Designs	sqft	New	1.19	25	\$4.11	10%	25%	\$0.03	656.92	757.39	AEG Research
Restaurant	Exterior Lighting	Advanced New Construction Designs	sqft	New	0.47	25	\$4.11	10%	25%	\$0.03	267.54	312.50	AEG Research
Restaurant	Cooling	Strategic Energy Management	sqft	New	0.25	3	\$0.86	0%	0%	\$0.04	0.00	0.00	AEG Research

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Restaurant	Heating	Strategic Energy Management	sqft	New	0.20	3	\$0.86	0%	0%	\$0.04	0.00	0.00	AEG Research
Restaurant	Ventilation	Strategic Energy Management	sqft	New	0.08	3	\$0.86	0%	0%	\$0.04	0.00	0.00	AEG Research
Restaurant	Water Heating	Strategic Energy Management	sqft	New	0.18	3	\$0.86	0%	0%	\$0.04	0.00	0.00	AEG Research
Restaurant	Interior Lighting	Strategic Energy Management	sqft	New	0.18	3	\$0.86	0%	0%	\$0.04	0.00	0.00	AEG Research
Restaurant	Exterior Lighting	Strategic Energy Management	sqft	New	0.07	3	\$0.86	0%	0%	\$0.04	0.00	0.00	AEG Research
Restaurant	Refrigeration	Strategic Energy Management	sqft	New	0.32	3	\$0.86	0%	0%	\$0.04	0.00	0.00	AEG Research
Restaurant	Office Equipment	Strategic Energy Management	sqft	New	0.04	3	\$0.86	0%	0%	\$0.04	0.00	0.00	AEG Research
Restaurant	Cooling	Commissioning	sqft	New	0.35	3	\$1.18	24%	79%	\$0.02	81.03	83.81	AEG Research
Restaurant	Heating	Commissioning	sqft	New	0.28	3	\$1.18	24%	79%	\$0.02	10.43	10.49	AEG Research
Restaurant	Ventilation	Commissioning	sqft	New	0.11	3	\$1.18	24%	79%	\$0.02	23.26	25.60	AEG Research
Restaurant	Water Heating	Commissioning	sqft	New	0.08	3	\$1.18	24%	79%	\$0.02	6.80	12.05	AEG Research
Restaurant	Interior Lighting	Commissioning	sqft	New	0.21	3	\$1.18	24%	79%	\$0.02	41.14	70.49	AEG Research
Restaurant	Exterior Lighting	Commissioning	sqft	New	0.09	3	\$1.18	24%	79%	\$0.02	16.83	28.62	AEG Research
Restaurant	Refrigeration	Commissioning	sqft	New	0.75	3	\$1.18	24%	79%	\$0.02	152.91	170.11	AEG Research
Restaurant	Cooling	Retrocommissioning	sqft	New	0.35	3	\$0.75	0%	0%	\$0.02	0.00	0.00	AEG Research
Restaurant	Heating	Retrocommissioning	sqft	New	0.28	3	\$0.75	0%	0%	\$0.02	0.00	0.00	AEG Research
Restaurant	Ventilation	Retrocommissioning	sqft	New	0.11	3	\$0.75	0%	0%	\$0.02	0.00	0.00	AEG Research
Restaurant	Water Heating	Retrocommissioning	sqft	New	0.08	3	\$0.75	0%	0%	\$0.02	0.00	0.00	AEG Research
Restaurant	Interior Lighting	Retrocommissioning	sqft	New	0.21	3	\$0.75	0%	0%	\$0.02	0.00	0.00	AEG Research
Restaurant	Exterior Lighting	Retrocommissioning	sqft	New	0.08	3	\$0.75	0%	0%	\$0.02	0.00	0.00	AEG Research
Restaurant	Refrigeration	Retrocommissioning	sqft	New	0.75	3	\$0.75	0%	0%	\$0.02	0.00	0.00	AEG Research
Restaurant	Interior Lighting	Fruit Storage - Lighting Controls	sqft	New	0.15	10	\$0.09	0%	0%	\$0.04	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Restaurant	Refrigeration	Fruit Storage Refrigeration Retrofit	sqft	New	2.33	10	\$1.09	0%	0%	\$0.05	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Restaurant	Refrigeration	Fruit Storage Refrigeration Tuneup	sqft	New	0.60	3	\$0.23	0%	0%	\$0.11	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Restaurant	Refrigeration	Fruit Storage Retrofit - CO2 Scrub	sqft	New	1.12	10	\$3.13	0%	0%	\$0.28	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Restaurant	Refrigeration	Fruit Storage Retrofit - Membrane	sqft	New	0.22	10	\$0.68	0%	0%	\$0.31	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Grocery	Cooling	Insulation - Ceiling	sqft roof	Existing	0.56	45	\$1.28	15%	35%	\$0.11	364.96	412.20	Building Energy Simulation Tool
Grocery	Heating	Insulation - Ceiling	sqft roof	Existing	0.00	45	\$1.28	15%	35%	\$0.11	0.07	0.07	Building Energy Simulation Tool
Grocery	Ventilation	Insulation - Ceiling	sqft roof	Existing	0.00	45	\$1.28	15%	35%	\$0.11	0.16	0.19	Building Energy Simulation Tool
Grocery	Cooling	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.84	15%	35%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Grocery	Heating	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.84	15%	35%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Grocery	Ventilation	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.84	15%	35%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Grocery	Cooling	Building Shell - Cool Roofs	sqft roof	Existing	0.86	20	\$0.78	45%	50%	\$0.11	149.71	153.41	Building Energy Simulation Tool
Grocery	Heating	Building Shell - Cool Roofs	sqft roof	Existing	-0.26	20	\$0.78	45%	50%	\$0.11	-8.42	-8.51	Building Energy Simulation Tool
Grocery	Ventilation	Building Shell - Cool Roofs	sqft roof	Existing	-0.09	20	\$0.78	45%	50%	\$0.11	-18.60	-21.79	Building Energy Simulation Tool
Grocery	Cooling	Insulation - Wall Cavity	sqft wall	Existing	1.42	45	\$0.78	15%	35%	\$0.02	543.47	578.03	Building Energy Simulation Tool
Grocery	Heating	Insulation - Wall Cavity	sqft wall	Existing	0.20	45	\$0.78	15%	35%	\$0.02	14.67	14.99	Building Energy Simulation Tool
Grocery	Ventilation	Insulation - Wall Cavity	sqft wall	Existing	0.07	45	\$0.78	15%	35%	\$0.02	32.03	38.22	Building Energy Simulation Tool
Grocery	Cooling	HVAC - Duct Repair and Sealing	tonCool	Existing	3.25	18	\$0.57	15%	25%	\$0.01	3.71	3.87	Building Energy Simulation Tool
Grocery	Heating	HVAC - Duct Repair and Sealing	tonCool	Existing	0.17	18	\$0.57	15%	25%	\$0.01	0.04	0.04	Building Energy Simulation Tool
Grocery	Ventilation	HVAC - Duct Repair and Sealing	tonCool	Existing	0.06	18	\$0.57	15%	25%	\$0.01	0.08	0.09	Building Energy Simulation Tool

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Grocery	Cooling	Windows - High Efficiency Glazing	sqft window	Existing	4.95	30	\$35.93	48%	48%	\$0.15	0.00	0.00	7th Power Plan
Grocery	Heating	Windows - High Efficiency Glazing	sqft window	Existing	6.60	30	\$35.93	48%	48%	\$0.15	0.00	0.00	7th Power Plan
Grocery	Ventilation	Windows - High Efficiency Glazing	sqft window	Existing	1.38	30	\$35.93	48%	48%	\$0.15	0.00	0.00	7th Power Plan
Grocery	Cooling	Chiller - Chilled Water Reset	ChillCtrl	Existing	7,470.43	10	\$884.85	15%	75%	\$0.01	3.13	3.28	AEG-BEST
Grocery	Cooling	Chiller - Chilled Water Variable-Flow System	HP cool	Existing	686.41	15	\$332.55	15%	75%	\$0.04	39.57	42.58	AEG-BEST
Grocery	Cooling	Chiller - Variable Speed Fans	HP fan	Existing	1,774.08	15	\$208.36	15%	75%	\$0.01	10.33	10.84	New Jersey TRM
Grocery	Cooling	Water-Cooled Chiller - Condenser Water Reset	ChillCtrl	Existing	51,007.07	10	\$884.85	15%	75%	\$0.00	8.08	8.58	AEG-BEST
Grocery	Cooling	HVAC - Economizer	HP cool	Existing	257.43	10	\$168.42	18%	75%	\$0.07	1,335.21	1,426.38	AEG-BEST
Grocery	Heating	Space Heating - Heat Recovery Ventilator	CFM	Existing	3.22	14	\$5.08	3%	75%	\$0.13	194.14	201.58	7th Power Plan
Grocery	Ventilation	Ventilation - ECM on VAV Boxes	sqft	Existing	0.42	18	\$0.25	15%	20%	\$0.04	84.00	99.56	7th Power Plan
Grocery	Ventilation	Ventilation - Variable Speed Control	sqft	Existing	0.04	15	\$181.39	13%	50%	\$318.88	59.10	78.60	AEG-BEST
Grocery	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.02	15	\$0.25	15%	75%	\$0.78	54.12	71.63	7th Power Plan
Grocery	Cooling	Destratification Fans (HVLS)	Strat Fan	Existing	9,123.24	15	\$7,270.90	15%	15%	\$0.03	0.00	0.00	AEG Research
Grocery	Heating	Destratification Fans (HVLS)	Strat Fan	Existing	10,805.44	15	\$7,270.90	15%	15%	\$0.03	0.00	0.00	AEG Research
Grocery	Cooling	RTU - Maintenance	tonCool	Existing	109.65	3	\$35.00	15%	45%	\$0.09	360.25	405.74	AEG Research
Grocery	Cooling	RTU - Advanced Controls	sqft	Existing	0.20	15	\$0.07	15%	45%	\$0.03	186.69	191.75	7th Power Plan
Grocery	Cooling	RTU - Evaporative Precooler	tonCool	Existing	213.15	15	\$681.62	15%	75%	\$0.23	1,217.32	1,299.44	AEG Research
Grocery	Cooling	Ductless Mini Split Heat Pump	tonCool	Existing	484.12	15	\$3,359.26	15%	25%	\$0.30	14.22	17.25	7th Power Plan
Grocery	Heating	Ductless Mini Split Heat Pump	tonCool	Existing	340.79	15	\$3,359.26	15%	25%	\$0.30	7.74	8.25	7th Power Plan
Grocery	Cooling	Thermostat - WiFi/Interactive	sqft	Existing	1.17	5	\$0.66	30%	40%	\$0.05	392.55	424.21	7th Power Plan
Grocery	Heating	Thermostat - WiFi/Interactive	sqft	Existing	0.72	5	\$0.66	30%	40%	\$0.05	45.58	47.76	7th Power Plan

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Grocery	Ventilation	Thermostat - WiFi/Interactive	sqft	Existing	0.26	5	\$0.66	30%	40%	\$0.05	103.80	125.64	7th Power Plan
Grocery	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	Existing	100.10	10	\$8.35	25%	65%	\$0.01	25.93	46.37	Illinois TRM
Grocery	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	Existing	103.43	10	\$11.64	25%	65%	\$0.01	13.33	24.10	7th Power Plan
Grocery	Water Heating	Water Heater - High Efficiency Circulation Pump	WHUnits	Existing	57.35	15	\$36.75	0%	0%	\$0.03	0.00	0.00	Hawaii TRM
Grocery	Water Heating	Water Heater - Pipe Insulation	PipeFeet	Existing	309.26	15	\$14.88	16%	75%	\$0.00	49.22	84.57	AEG-BEST
Grocery	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	Existing	64.60	4	\$144.04	25%	65%	\$0.28	15.85	29.99	7th Power Plan
Grocery	Water Heating	Water Heater - Thermostat Setback	WHUnits	Existing	58.19	2	\$5.00	15%	75%	\$0.02	23.66	43.67	Illinois TRM
Grocery	Water Heating	Water Heater - Solar System	PipeFeet	Existing	1,045.13	20	\$215.28	1%	30%	\$0.01	80.03	142.45	AEG-BEST
Grocery	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.77	15	\$0.35	3%	23%	\$0.03	725.38	943.13	7th Power Plan
Grocery	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	1.06	15	\$0.58	3%	23%	\$0.03	977.09	1,298.80	7th Power Plan
Grocery	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	Existing	432.90	15	\$54.41	1%	3%	\$0.01	20.32	31.08	7th Power Plan
Grocery	Interior Lighting	Interior Lighting - Timeclocks and Timers	occ sens	Existing	0.00	8	\$111.67	7%	15%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Grocery	Interior Lighting	Interior Lighting - Skylights	1000 sqft	Existing	0.00	15	\$1,006.35	15%	30%	\$0.00	0.00	0.00	AEG Research
Grocery	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	1000 sqft	Existing	593.38	16	\$1,807.69	5%	15%	\$0.17	216.37	355.00	7th Power Plan
Grocery	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	Existing	5,793.30	11	\$30.80	15%	50%	\$0.00	793.95	1,156.77	Illinois TRM
Grocery	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	ELtg Watts	Existing	0.82	8	\$0.63	15%	25%	\$0.07	286.44	447.01	7th Power Plan
Grocery	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	Existing	60.30	8	\$55.10	15%	25%	\$0.08	144.84	232.86	Pacific Gas and Electric Research
Grocery	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	Existing	73.42	7	\$3,400.00	15%	30%	\$4.35	261.71	430.23	AEG Research
Grocery	Refrigeration	Refrigeration - Anti-Sweat Heater	Fridge Feet	Existing	222.92	8	\$48.18	33%	75%	\$0.03	974.47	1,424.63	7th Power Plan

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Grocery	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	Existing	71.99	4	\$10.44	27%	35%	\$0.03	131.54	186.95	Michigan Energy Measures Database
Grocery	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	Existing	189.53	16	\$165.20	33%	75%	\$0.06	295.42	442.19	7th Power Plan
Grocery	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	Existing	583.02	15	\$335.85	23%	75%	\$0.04	12,936.20	15,674.54	7th Power Plan
Grocery	Refrigeration	Refrigeration - Strip Curtain	Walkin Door	Existing	113.74	2	\$10.41	33%	75%	\$0.04	129.85	165.10	7th Power Plan
Grocery	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	Existing	7.48	15	\$45.43	16%	38%	\$0.38	1,795.71	2,563.92	Annual Energy Outlook, 2015
Grocery	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	Existing	162.50	15	\$313.82	16%	38%	\$0.13	3,307.89	4,544.62	Annual Energy Outlook, 2015
Grocery	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	Existing	118.49	10	\$506.05	33%	75%	\$0.35	179.70	285.62	Vermont TRM
Grocery	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	Existing	49.32	6	\$45.41	20%	75%	\$0.12	1,642.08	2,217.32	7th Power Plan
Grocery	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	Existing	8.93	8	\$3.72	20%	75%	\$0.04	111.96	149.84	7th Power Plan
Grocery	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	Existing	2,299.52	5	\$45.85	20%	75%	\$0.00	3,935.77	4,302.31	Illinois TRM
Grocery	Refrigeration	Grocery - ECMs for Display Cases	Fridge Case	Existing	205.81	16	\$165.20	33%	75%	\$0.05	660.44	886.77	7th Power Plan
Grocery	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	Existing	1,218.27	5	\$187.94	25%	75%	\$0.03	248.17	264.56	Illinois TRM
Grocery	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	Existing	3,515.40	18	\$8,526.67	25%	50%	\$0.15	141.88	169.73	7th Power Plan
Grocery	Office Equipment	Office Equipment - Smart Power Strips	Smart Strip	Existing	16.34	4	\$41.63	10%	50%	\$0.50	65.79	62.41	7th Power Plan
Grocery	Cooling	Lodging - Guest Room Controls	LodgUnit	Existing	451.07	15	\$260.00	0%	0%	\$0.08	0.00	0.00	AEG-BEST
Grocery	Heating	Lodging - Guest Room Controls	LodgUnit	Existing	-183.81	15	\$260.00	0%	0%	\$0.08	0.00	0.00	AEG-BEST
Grocery	Office Equipment	Data Center - Best Practice Measures	sqft	Existing	0.02	5	\$0.00	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Grocery	Cooling	Data Center - Commercially Available Measures	sqft	Existing	0.02	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Grocery	Ventilation	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Grocery	Interior Lighting	Data Center - Commercially Available Measures	sqft	Existing	0.06	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Grocery	Office Equipment	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Grocery	Cooling	Data Center - Cutting Edge Measures	sqft	Existing	0.10	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Grocery	Office Equipment	Data Center - Cutting Edge Measures	sqft	Existing	0.00	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Grocery	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	Existing	2,361.75	18	\$4,092.80	0%	0%	\$0.11	0.00	0.00	7th Power Plan
Grocery	Miscellaneous	Pool Pump - Timer	perBldg	Existing	0.00	10	\$85.22	15%	75%	\$0.00	0.00	0.00	Ontario Power TRM
Grocery	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	Existing	8,302.87	6	\$35.93	1%	3%	\$0.00	0.00	78.31	7th Power Plan
Grocery	Cooling	Advanced New Construction Designs	sqft	Existing	1.87	25	\$4.11	0%	0%	\$0.04	0.00	0.00	AEG Research
Grocery	Heating	Advanced New Construction Designs	sqft	Existing	1.26	25	\$4.11	0%	0%	\$0.04	0.00	0.00	AEG Research
Grocery	Ventilation	Advanced New Construction Designs	sqft	Existing	0.32	25	\$4.11	0%	0%	\$0.04	0.00	0.00	AEG Research
Grocery	Water Heating	Advanced New Construction Designs	sqft	Existing	0.37	25	\$4.11	0%	0%	\$0.04	0.00	0.00	AEG Research
Grocery	Interior Lighting	Advanced New Construction Designs	sqft	Existing	1.50	25	\$4.11	0%	0%	\$0.04	0.00	0.00	AEG Research
Grocery	Exterior Lighting	Advanced New Construction Designs	sqft	Existing	0.47	25	\$4.11	0%	0%	\$0.04	0.00	0.00	AEG Research
Grocery	Cooling	Strategic Energy Management	sqft	Existing	0.34	3	\$1.48	4%	27%	\$0.05	280.49	319.33	AEG Research
Grocery	Heating	Strategic Energy Management	sqft	Existing	0.21	3	\$1.48	4%	27%	\$0.05	32.57	35.48	AEG Research
Grocery	Ventilation	Strategic Energy Management	sqft	Existing	0.08	3	\$1.48	4%	27%	\$0.05	74.17	97.53	AEG Research
Grocery	Water Heating	Strategic Energy Management	sqft	Existing	0.06	3	\$1.48	4%	27%	\$0.05	13.78	25.89	AEG Research
Grocery	Interior Lighting	Strategic Energy Management	sqft	Existing	0.22	3	\$1.48	4%	27%	\$0.05	184.93	308.80	AEG Research
Grocery	Exterior Lighting	Strategic Energy Management	sqft	Existing	0.07	3	\$1.48	4%	27%	\$0.05	60.23	98.36	AEG Research

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Grocery	Refrigeration	Strategic Energy Management	sqft	Existing	0.79	3	\$1.48	4%	27%	\$0.05	708.62	1,003.46	AEG Research
Grocery	Office Equipment	Strategic Energy Management	sqft	Existing	0.02	3	\$1.48	4%	27%	\$0.05	21.54	20.30	AEG Research
Grocery	Cooling	Commissioning	sqft	Existing	0.51	3	\$1.20	0%	0%	\$0.01	0.00	0.00	AEG Research
Grocery	Heating	Commissioning	sqft	Existing	0.31	3	\$1.20	0%	0%	\$0.01	0.00	0.00	AEG Research
Grocery	Ventilation	Commissioning	sqft	Existing	0.11	3	\$1.20	0%	0%	\$0.01	0.00	0.00	AEG Research
Grocery	Water Heating	Commissioning	sqft	Existing	0.03	3	\$1.20	0%	0%	\$0.01	0.00	0.00	AEG Research
Grocery	Interior Lighting	Commissioning	sqft	Existing	0.26	3	\$1.20	0%	0%	\$0.01	0.00	0.00	AEG Research
Grocery	Exterior Lighting	Commissioning	sqft	Existing	0.08	3	\$1.20	0%	0%	\$0.01	0.00	0.00	AEG Research
Grocery	Refrigeration	Commissioning	sqft	Existing	2.22	3	\$1.20	0%	0%	\$0.01	0.00	0.00	AEG Research
Grocery	Cooling	Retrocommissioning	sqft	Existing	0.51	3	\$0.76	10%	61%	\$0.01	985.21	1,031.78	AEG Research
Grocery	Heating	Retrocommissioning	sqft	Existing	0.31	3	\$0.76	10%	61%	\$0.01	112.43	114.05	AEG Research
Grocery	Ventilation	Retrocommissioning	sqft	Existing	0.11	3	\$0.76	10%	61%	\$0.01	248.40	307.54	AEG Research
Grocery	Water Heating	Retrocommissioning	sqft	Existing	0.03	3	\$0.76	10%	61%	\$0.01	14.26	26.62	AEG Research
Grocery	Interior Lighting	Retrocommissioning	sqft	Existing	0.26	3	\$0.76	10%	61%	\$0.01	493.18	803.52	AEG Research
Grocery	Exterior Lighting	Retrocommissioning	sqft	Existing	0.09	3	\$0.76	10%	61%	\$0.01	171.11	262.53	AEG Research
Grocery	Refrigeration	Retrocommissioning	sqft	Existing	2.32	3	\$0.76	10%	61%	\$0.01	4,977.91	5,828.81	AEG Research
Grocery	Interior Lighting	Fruit Storage - Lighting Controls	sqft	Existing	0.19	10	\$0.09	0%	0%	\$0.03	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Grocery	Refrigeration	Fruit Storage Refrigeration Retrofit	sqft	Existing	7.27	10	\$1.09	0%	0%	\$0.02	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Grocery	Refrigeration	Fruit Storage Refrigeration Tuneup	sqft	Existing	1.86	3	\$0.23	0%	0%	\$0.04	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Grocery	Refrigeration	Fruit Storage Retrofit - CO2 Scrub	sqft	Existing	2.90	10	\$3.13	0%	0%	\$0.09	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Grocery	Refrigeration	Fruit Storage Retrofit - Membrane	sqft	Existing	0.58	10	\$0.68	0%	0%	\$0.10	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Grocery	Cooling	Insulation - Ceiling	sqft roof	New	0.11	45	\$1.28	15%	50%	\$0.51	67.30	68.40	Building Energy Simulation Tool

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Grocery	Heating	Insulation - Ceiling	sqft roof	New	0.02	45	\$1.28	15%	50%	\$0.51	1.75	1.74	Building Energy Simulation Tool
Grocery	Ventilation	Insulation - Ceiling	sqft roof	New	0.00	45	\$1.28	15%	50%	\$0.51	3.09	3.33	Building Energy Simulation Tool
Grocery	Cooling	Insulation - Ducting	sqft duct	New	0.00	20	\$0.84	15%	25%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Grocery	Heating	Insulation - Ducting	sqft duct	New	0.00	20	\$0.84	15%	25%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Grocery	Ventilation	Insulation - Ducting	sqft duct	New	0.00	20	\$0.84	15%	25%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Grocery	Cooling	Building Shell - Cool Roofs	sqft roof	New	0.75	20	\$0.78	45%	50%	\$0.08	68.77	69.25	Building Energy Simulation Tool
Grocery	Heating	Building Shell - Cool Roofs	sqft roof	New	-0.06	20	\$0.78	45%	50%	\$0.08	-1.01	-1.01	Building Energy Simulation Tool
Grocery	Ventilation	Building Shell - Cool Roofs	sqft roof	New	-0.02	20	\$0.78	45%	50%	\$0.08	-1.80	-1.92	Building Energy Simulation Tool
Grocery	Cooling	Insulation - Wall Cavity	sqft wall	New	0.11	45	\$0.78	15%	50%	\$0.31	54.56	55.41	Building Energy Simulation Tool
Grocery	Heating	Insulation - Wall Cavity	sqft wall	New	0.01	45	\$0.78	15%	50%	\$0.31	0.78	0.78	Building Energy Simulation Tool
Grocery	Ventilation	Insulation - Wall Cavity	sqft wall	New	0.00	45	\$0.78	15%	50%	\$0.31	1.39	1.49	Building Energy Simulation Tool
Grocery	Cooling	HVAC - Duct Repair and Sealing	tonCool	New	-7.10	18	\$0.57	15%	25%	\$10.00	-4.06	-4.14	Building Energy Simulation Tool
Grocery	Heating	HVAC - Duct Repair and Sealing	tonCool	New	0.38	18	\$0.57	15%	25%	\$10.00	0.04	0.04	Building Energy Simulation Tool
Grocery	Ventilation	HVAC - Duct Repair and Sealing	tonCool	New	0.09	18	\$0.57	15%	25%	\$10.00	0.07	0.08	Building Energy Simulation Tool
Grocery	Cooling	Windows - High Efficiency Glazing	sqft window	New	3.53	30	\$35.93	66%	66%	\$0.21	0.00	0.00	7th Power Plan
Grocery	Heating	Windows - High Efficiency Glazing	sqft window	New	5.10	30	\$35.93	66%	66%	\$0.21	0.00	0.00	7th Power Plan
Grocery	Ventilation	Windows - High Efficiency Glazing	sqft window	New	0.72	30	\$35.93	66%	66%	\$0.21	0.00	0.00	7th Power Plan
Grocery	Cooling	Chiller - Chilled Water Reset	ChillCtrl	New	6,112.29	10	\$884.85	15%	75%	\$0.02	0.60	0.62	AEG-BEST
Grocery	Cooling	Chiller - Chilled Water Variable-Flow System	HP cool	New	574.12	15	\$332.55	15%	75%	\$0.05	10.00	10.17	AEG-BEST

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Grocery	Cooling	Chiller - Variable Speed Fans	HP fan	New	1,451.32	15	\$208.36	15%	75%	\$0.01	2.52	2.56	New Jersey TRM
Grocery	Cooling	Water-Cooled Chiller - Condenser Water Reset	ChillCtrl	New	52,210.61	10	\$884.85	15%	75%	\$0.00	1.97	2.00	AEG-BEST
Grocery	Cooling	HVAC - Economizer	HP cool	New	233.35	10	\$168.42	18%	75%	\$0.08	285.87	290.84	AEG-BEST
Grocery	Heating	Space Heating - Heat Recovery Ventilator	CFM	New	3.17	14	\$5.08	6%	75%	\$0.14	50.55	50.52	7th Power Plan
Grocery	Ventilation	Ventilation - ECM on VAV Boxes	sqft	New	0.37	18	\$0.25	15%	20%	\$0.04	41.66	44.69	7th Power Plan
Grocery	Ventilation	Ventilation - Variable Speed Control	sqft	New	0.03	15	\$181.39	19%	50%	\$321.66	15.05	17.08	AEG-BEST
Grocery	Ventilation	Ventilation - Demand Controlled	sqft	New	0.02	15	\$0.25	15%	75%	\$0.79	16.47	18.69	7th Power Plan
Grocery	Cooling	Destratification Fans (HVLS)	Strat Fan	New	8,136.30	15	\$7,270.90	15%	15%	\$0.03	0.00	0.00	AEG Research
Grocery	Heating	Destratification Fans (HVLS)	Strat Fan	New	10,635.03	15	\$7,270.90	15%	15%	\$0.03	0.00	0.00	AEG Research
Grocery	Cooling	RTU - Maintenance	tonCool	New	147.98	3	\$35.00	15%	45%	\$0.07	36.18	37.27	AEG Research
Grocery	Cooling	RTU - Advanced Controls	sqft	New	0.25	15	\$0.07	15%	45%	\$0.02	113.54	114.75	7th Power Plan
Grocery	Cooling	RTU - Evaporative Precooler	tonCool	New	289.03	15	\$681.62	15%	75%	\$0.18	1,023.05	1,023.48	AEG Research
Grocery	Cooling	Ductless Mini Split Heat Pump	tonCool	New	652.61	15	\$3,359.26	15%	25%	\$0.26	7.43	7.70	7th Power Plan
Grocery	Heating	Ductless Mini Split Heat Pump	tonCool	New	361.25	15	\$3,359.26	15%	25%	\$0.26	2.97	2.96	7th Power Plan
Grocery	Cooling	Thermostat - WiFi/Interactive	sqft	New	1.09	5	\$0.66	30%	40%	\$0.06	22.99	23.43	7th Power Plan
Grocery	Heating	Thermostat - WiFi/Interactive	sqft	New	0.73	5	\$0.66	30%	40%	\$0.06	2.73	2.73	7th Power Plan
Grocery	Ventilation	Thermostat - WiFi/Interactive	sqft	New	0.18	5	\$0.66	30%	40%	\$0.06	4.84	5.60	7th Power Plan
Grocery	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	New	82.02	10	\$8.35	25%	65%	\$0.01	5.01	8.00	Illinois TRM
Grocery	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	New	85.43	10	\$11.64	25%	65%	\$0.01	2.61	4.17	7th Power Plan
Grocery	Water Heating	Water Heater - High Efficiency Circulation Pump	WHUnits	New	49.06	15	\$36.75	0%	0%	\$0.03	0.00	0.00	Hawaii TRM
Grocery	Water Heating	Water Heater - Pipe Insulation	PipeFeet	New	251.11	15	\$14.88	1%	75%	\$0.00	17.02	25.35	AEG-BEST

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Grocery	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	New	55.67	4	\$144.04	25%	65%	\$0.28	1.39	2.40	7th Power Plan
Grocery	Water Heating	Water Heater - Thermostat Setback	WHUnits	New	49.27	2	\$5.00	15%	75%	\$0.02	0.74	1.34	Illinois TRM
Grocery	Water Heating	Water Heater - Solar System	PipeFeet	New	866.86	20	\$215.28	1%	30%	\$0.01	23.80	35.07	AEG-BEST
Grocery	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.71	15	\$0.35	11%	23%	\$0.03	378.72	454.79	7th Power Plan
Grocery	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.98	15	\$0.58	11%	23%	\$0.03	520.41	628.14	7th Power Plan
Grocery	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	New	398.89	15	\$54.41	1%	3%	\$0.01	4.98	6.73	7th Power Plan
Grocery	Interior Lighting	Interior Lighting - Timeclocks and Timers	occ sens	New	0.00	8	\$111.67	7%	15%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Grocery	Interior Lighting	Interior Lighting - Skylights	1000 sqft	New	0.00	15	\$1,006.35	18%	33%	\$0.00	0.00	0.00	AEG Research
Grocery	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	1000 sqft	New	508.59	16	\$1,807.69	5%	15%	\$0.18	63.32	84.02	7th Power Plan
Grocery	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	New	4,785.55	11	\$30.80	15%	50%	\$0.00	172.32	231.32	Illinois TRM
Grocery	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	ELtg Watts	New	0.70	8	\$0.63	15%	25%	\$0.07	50.58	75.73	7th Power Plan
Grocery	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	New	52.60	8	\$55.10	15%	25%	\$0.08	26.65	39.72	Pacific Gas and Electric Research
Grocery	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	New	64.89	7	\$3,400.00	15%	30%	\$4.31	42.98	65.39	AEG Research
Grocery	Refrigeration	Refrigeration - Anti-Sweat Heater	Fridge Feet	New	176.53	8	\$48.18	41%	75%	\$0.04	128.73	155.76	7th Power Plan
Grocery	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	New	59.29	4	\$10.44	35%	35%	\$0.04	0.00	0.00	Michigan Energy Measures Database
Grocery	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	New	185.83	16	\$165.20	41%	75%	\$0.07	80.22	85.56	7th Power Plan
Grocery	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	New	571.91	15	\$335.85	11%	75%	\$0.05	4,787.29	4,908.61	7th Power Plan
Grocery	Refrigeration	Refrigeration - Strip Curtain	Walkin Door	New	103.78	2	\$10.41	41%	75%	\$0.04	3.01	3.54	7th Power Plan
Grocery	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBtuh	New	8.15	15	\$45.43	21%	38%	\$0.42	529.11	535.25	Annual Energy Outlook, 2015

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Grocery	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	New	171.87	15	\$313.82	21%	38%	\$0.14	924.79	937.85	Annual Energy Outlook, 2015
Grocery	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	New	121.96	10	\$506.05	41%	75%	\$0.40	40.96	44.28	Vermont TRM
Grocery	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	New	51.59	6	\$45.41	20%	75%	\$0.13	270.02	281.93	7th Power Plan
Grocery	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	New	9.96	8	\$3.72	20%	75%	\$0.05	26.05	26.89	7th Power Plan
Grocery	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	New	2,153.79	5	\$45.85	20%	75%	\$0.00	414.38	428.40	Illinois TRM
Grocery	Refrigeration	Grocery - ECMs for Display Cases	Fridge Case	New	214.60	16	\$165.20	41%	75%	\$0.06	184.10	186.86	7th Power Plan
Grocery	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	New	1,242.29	5	\$187.94	25%	75%	\$0.03	28.30	28.19	Illinois TRM
Grocery	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	New	3,153.02	18	\$8,526.67	25%	50%	\$0.15	71.03	76.36	7th Power Plan
Grocery	Office Equipment	Office Equipment - Smart Power Strips	Smart Strip	New	17.32	4	\$41.63	10%	50%	\$0.48	5.45	5.18	7th Power Plan
Grocery	Cooling	Lodging - Guest Room Controls	LodgUnit	New	562.47	15	\$260.00	0%	0%	\$0.05	0.00	0.00	AEG-BEST
Grocery	Heating	Lodging - Guest Room Controls	LodgUnit	New	-183.27	15	\$260.00	0%	0%	\$0.05	0.00	0.00	AEG-BEST
Grocery	Office Equipment	Data Center - Best Practice Measures	sqft	New	0.02	5	\$0.00	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Grocery	Cooling	Data Center - Commercially Available Measures	sqft	New	0.02	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Grocery	Ventilation	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Grocery	Interior Lighting	Data Center - Commercially Available Measures	sqft	New	0.05	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Grocery	Office Equipment	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Grocery	Cooling	Data Center - Cutting Edge Measures	sqft	New	0.09	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Grocery	Office Equipment	Data Center - Cutting Edge Measures	sqft	New	0.00	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Grocery	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	New	2,118.28	18	\$4,092.80	0%	0%	\$0.11	0.00	0.00	7th Power Plan

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Grocery	Miscellaneous	Pool Pump - Timer	perBldg	New	0.00	10	\$85.22	15%	75%	\$0.00	0.00	0.00	Ontario Power TRM
Grocery	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	New	8,302.87	6	\$35.93	1%	3%	\$0.00	0.00	6.41	7th Power Plan
Grocery	Cooling	Advanced New Construction Designs	sqft	New	1.98	25	\$4.11	10%	15%	\$0.04	202.48	204.59	AEG Research
Grocery	Heating	Advanced New Construction Designs	sqft	New	1.37	25	\$4.11	10%	15%	\$0.04	24.96	24.83	AEG Research
Grocery	Ventilation	Advanced New Construction Designs	sqft	New	0.33	25	\$4.11	10%	15%	\$0.04	44.29	47.76	AEG Research
Grocery	Water Heating	Advanced New Construction Designs	sqft	New	0.32	25	\$4.11	10%	15%	\$0.04	11.03	13.37	AEG Research
Grocery	Interior Lighting	Advanced New Construction Designs	sqft	New	1.36	25	\$4.11	10%	15%	\$0.04	149.95	175.35	AEG Research
Grocery	Exterior Lighting	Advanced New Construction Designs	sqft	New	0.39	25	\$4.11	10%	15%	\$0.04	44.72	52.05	AEG Research
Grocery	Cooling	Strategic Energy Management	sqft	New	0.32	3	\$1.28	4%	27%	\$0.04	14.44	14.84	AEG Research
Grocery	Heating	Strategic Energy Management	sqft	New	0.21	3	\$1.28	4%	27%	\$0.04	1.71	1.72	AEG Research
Grocery	Ventilation	Strategic Energy Management	sqft	New	0.05	3	\$1.28	4%	27%	\$0.04	3.04	3.56	AEG Research
Grocery	Water Heating	Strategic Energy Management	sqft	New	0.05	3	\$1.28	4%	27%	\$0.04	0.76	1.34	AEG Research
Grocery	Interior Lighting	Strategic Energy Management	sqft	New	0.21	3	\$1.28	4%	27%	\$0.04	10.32	16.17	AEG Research
Grocery	Exterior Lighting	Strategic Energy Management	sqft	New	0.06	3	\$1.28	4%	27%	\$0.04	3.07	5.15	AEG Research
Grocery	Refrigeration	Strategic Energy Management	sqft	New	0.87	3	\$1.28	4%	27%	\$0.04	45.53	49.99	AEG Research
Grocery	Office Equipment	Strategic Energy Management	sqft	New	0.02	3	\$1.28	4%	27%	\$0.04	1.12	1.07	AEG Research
Grocery	Cooling	Commissioning	sqft	New	0.45	3	\$1.04	10%	61%	\$0.01	44.94	46.39	AEG Research
Grocery	Heating	Commissioning	sqft	New	0.30	3	\$1.04	10%	61%	\$0.01	5.35	5.36	AEG Research
Grocery	Ventilation	Commissioning	sqft	New	0.07	3	\$1.04	10%	61%	\$0.01	9.53	11.02	AEG Research
Grocery	Water Heating	Commissioning	sqft	New	0.02	3	\$1.04	10%	61%	\$0.01	0.77	1.37	AEG Research
Grocery	Interior Lighting	Commissioning	sqft	New	0.24	3	\$1.04	10%	61%	\$0.01	26.43	41.56	AEG Research

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Grocery	Exterior Lighting	Commissioning	sqft	New	0.07	3	\$1.04	10%	61%	\$0.01	7.96	13.39	AEG Research
Grocery	Refrigeration	Commissioning	sqft	New	2.22	3	\$1.04	10%	61%	\$0.01	250.58	268.98	AEG Research
Grocery	Cooling	Retrocommissioning	sqft	New	0.45	3	\$0.66	0%	0%	\$0.01	0.00	0.00	AEG Research
Grocery	Heating	Retrocommissioning	sqft	New	0.30	3	\$0.66	0%	0%	\$0.01	0.00	0.00	AEG Research
Grocery	Ventilation	Retrocommissioning	sqft	New	0.07	3	\$0.66	0%	0%	\$0.01	0.00	0.00	AEG Research
Grocery	Water Heating	Retrocommissioning	sqft	New	0.02	3	\$0.66	0%	0%	\$0.01	0.00	0.00	AEG Research
Grocery	Interior Lighting	Retrocommissioning	sqft	New	0.25	3	\$0.66	0%	0%	\$0.01	0.00	0.00	AEG Research
Grocery	Exterior Lighting	Retrocommissioning	sqft	New	0.07	3	\$0.66	0%	0%	\$0.01	0.00	0.00	AEG Research
Grocery	Refrigeration	Retrocommissioning	sqft	New	2.22	3	\$0.66	0%	0%	\$0.01	0.00	0.00	AEG Research
Grocery	Interior Lighting	Fruit Storage - Lighting Controls	sqft	New	0.17	10	\$0.09	0%	0%	\$0.03	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Grocery	Refrigeration	Fruit Storage Refrigeration Retrofit	sqft	New	6.89	10	\$1.09	0%	0%	\$0.02	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Grocery	Refrigeration	Fruit Storage Refrigeration Tuneup	sqft	New	1.76	3	\$0.23	0%	0%	\$0.04	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Grocery	Refrigeration	Fruit Storage Retrofit - CO2 Scrub	sqft	New	3.07	10	\$3.13	0%	0%	\$0.10	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Grocery	Refrigeration	Fruit Storage Retrofit - Membrane	sqft	New	0.61	10	\$0.68	0%	0%	\$0.11	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Health	Cooling	Insulation - Ceiling	sqft roof	Existing	0.24	45	\$1.28	15%	35%	\$0.06	194.11	271.61	Building Energy Simulation Tool
Health	Heating	Insulation - Ceiling	sqft roof	Existing	0.53	45	\$1.28	15%	35%	\$0.06	27.43	29.08	Building Energy Simulation Tool
Health	Ventilation	Insulation - Ceiling	sqft roof	Existing	0.14	45	\$1.28	15%	35%	\$0.06	125.39	156.79	Building Energy Simulation Tool
Health	Cooling	Insulation - Ducting	sqft duct	Existing	0.69	20	\$0.84	15%	35%	\$0.00	572.49	759.36	Building Energy Simulation Tool
Health	Heating	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.84	15%	35%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Health	Ventilation	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.84	15%	35%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Health	Cooling	Building Shell - Cool Roofs	sqft roof	Existing	0.77	20	\$0.78	45%	50%	\$0.08	173.50	202.97	Building Energy Simulation Tool

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Health	Heating	Building Shell - Cool Roofs	sqft roof	Existing	-0.17	20	\$0.78	45%	50%	\$0.08	-2.29	-2.30	Building Energy Simulation Tool
Health	Ventilation	Building Shell - Cool Roofs	sqft roof	Existing	-0.04	20	\$0.78	45%	50%	\$0.08	-10.19	-12.09	Building Energy Simulation Tool
Health	Cooling	Insulation - Wall Cavity	sqft wall	Existing	-0.07	45	\$0.78	15%	35%	\$0.02	-55.74	-65.30	Building Energy Simulation Tool
Health	Heating	Insulation - Wall Cavity	sqft wall	Existing	1.67	45	\$0.78	15%	35%	\$0.02	78.09	78.43	Building Energy Simulation Tool
Health	Ventilation	Insulation - Wall Cavity	sqft wall	Existing	0.42	45	\$0.78	15%	35%	\$0.02	347.34	411.83	Building Energy Simulation Tool
Health	Cooling	HVAC - Duct Repair and Sealing	tonCool	Existing	34.89	18	\$0.57	15%	50%	\$0.04	401.80	468.42	Building Energy Simulation Tool
Health	Heating	HVAC - Duct Repair and Sealing	tonCool	Existing	-30.58	18	\$0.57	15%	50%	\$0.04	-20.72	-20.86	Building Energy Simulation Tool
Health	Ventilation	HVAC - Duct Repair and Sealing	tonCool	Existing	-7.76	18	\$0.57	15%	50%	\$0.04	-92.16	-109.55	Building Energy Simulation Tool
Health	Cooling	Windows - High Efficiency Glazing	sqft window	Existing	11.21	30	\$35.93	48%	48%	\$0.03	0.00	0.00	7th Power Plan
Health	Heating	Windows - High Efficiency Glazing	sqft window	Existing	41.14	30	\$35.93	48%	48%	\$0.03	0.00	0.00	7th Power Plan
Health	Ventilation	Windows - High Efficiency Glazing	sqft window	Existing	5.97	30	\$35.93	48%	48%	\$0.03	0.00	0.00	7th Power Plan
Health	Cooling	Chiller - Chilled Water Reset	ChillCtrl	Existing	26,479.10	10	\$884.85	15%	75%	\$0.00	2,618.75	3,378.14	AEG-BEST
Health	Cooling	Chiller - Chilled Water Variable-Flow System	HP cool	Existing	671.17	15	\$332.55	15%	75%	\$0.03	9,047.78	12,228.48	AEG-BEST
Health	Cooling	Chiller - Variable Speed Fans	HP fan	Existing	1,473.70	15	\$208.36	15%	75%	\$0.01	2,004.96	2,653.30	New Jersey TRM
Health	Cooling	Water-Cooled Chiller - Condenser Water Reset	ChillCtrl	Existing	49,216.94	10	\$884.85	15%	75%	\$0.00	3,943.27	4,924.57	AEG-BEST
Health	Cooling	HVAC - Economizer	HP cool	Existing	165.87	10	\$168.42	18%	75%	\$0.08	2,319.22	3,507.04	AEG-BEST
Health	Heating	Space Heating - Heat Recovery Ventilator	CFM	Existing	2.91	14	\$5.08	3%	75%	\$0.15	299.53	315.53	7th Power Plan
Health	Ventilation	Ventilation - ECM on VAV Boxes	sqft	Existing	0.59	18	\$0.25	15%	20%	\$0.03	273.36	326.90	7th Power Plan
Health	Ventilation	Ventilation - Variable Speed Control	sqft	Existing	0.05	15	\$181.39	13%	50%	\$246.36	186.67	258.51	AEG-BEST

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Health	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.03	15	\$0.25	15%	75%	\$0.60	170.94	235.58	7th Power Plan
Health	Cooling	Destratification Fans (HVLS)	Strat Fan	Existing	6,492.08	15	\$7,270.90	15%	15%	\$0.02	0.00	0.00	AEG Research
Health	Heating	Destratification Fans (HVLS)	Strat Fan	Existing	21,107.59	15	\$7,270.90	15%	15%	\$0.02	0.00	0.00	AEG Research
Health	Cooling	RTU - Maintenance	tonCool	Existing	70.05	3	\$35.00	15%	45%	\$0.10	79.42	125.98	AEG Research
Health	Cooling	RTU - Advanced Controls	sqft	Existing	0.15	15	\$0.07	15%	45%	\$0.03	46.42	56.61	7th Power Plan
Health	Cooling	RTU - Evaporative Precooler	tonCool	Existing	134.74	15	\$681.62	15%	75%	\$0.27	261.66	334.02	AEG Research
Health	Cooling	Ductless Mini Split Heat Pump	tonCool	Existing	315.85	15	\$3,359.26	15%	25%	\$0.25	3.82	5.92	7th Power Plan
Health	Heating	Ductless Mini Split Heat Pump	tonCool	Existing	560.95	15	\$3,359.26	15%	25%	\$0.25	1.63	1.75	7th Power Plan
Health	Cooling	Thermostat - WiFi/Interactive	sqft	Existing	0.83	5	\$0.66	30%	40%	\$0.04	663.85	920.40	7th Power Plan
Health	Heating	Thermostat - WiFi/Interactive	sqft	Existing	1.44	5	\$0.66	30%	40%	\$0.04	75.81	77.85	7th Power Plan
Health	Ventilation	Thermostat - WiFi/Interactive	sqft	Existing	0.36	5	\$0.66	30%	40%	\$0.04	325.23	403.09	7th Power Plan
Health	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	Existing	203.29	10	\$8.35	25%	65%	\$0.00	43.53	78.17	Illinois TRM
Health	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	Existing	201.53	10	\$11.64	25%	65%	\$0.00	21.05	39.84	7th Power Plan
Health	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	Existing	57.15	15	\$36.75	15%	50%	\$0.03	20.76	32.82	Hawaii TRM
Health	Water Heating	Water Heater - Pipe Insulation	PipeFeet	Existing	628.26	15	\$14.88	16%	75%	\$0.00	82.65	142.53	AEG-BEST
Health	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	Existing	130.73	4	\$144.04	25%	65%	\$0.14	26.35	50.45	7th Power Plan
Health	Water Heating	Water Heater - Thermostat Setback	WHunits	Existing	57.99	2	\$5.00	15%	75%	\$0.02	39.67	73.58	Illinois TRM
Health	Water Heating	Water Heater - Solar System	PipeFeet	Existing	2,137.65	20	\$215.28	1%	30%	\$0.00	135.59	241.13	AEG-BEST
Health	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.74	15	\$0.35	3%	23%	\$0.03	1,739.31	2,205.47	7th Power Plan
Health	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	1.01	15	\$0.58	3%	23%	\$0.03	2,345.40	3,038.50	7th Power Plan
Health	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	Existing	323.97	15	\$54.41	1%	3%	\$0.01	50.64	75.54	7th Power Plan

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Health	Interior Lighting	Interior Lighting - Timeclocks and Timers	occ sens	Existing	0.00	8	\$111.67	7%	15%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Health	Interior Lighting	Interior Lighting - Skylights	1000 sqft	Existing	0.00	15	\$1,006.35	15%	25%	\$0.00	0.00	0.00	AEG Research
Health	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	1000 sqft	Existing	471.93	16	\$1,807.69	5%	15%	\$0.21	426.83	689.56	7th Power Plan
Health	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	Existing	4,594.71	11	\$30.80	15%	50%	\$0.00	1,558.33	2,243.03	Illinois TRM
Health	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	ELtg Watts	Existing	1.24	8	\$0.63	15%	25%	\$0.05	229.28	359.91	7th Power Plan
Health	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	Existing	83.06	8	\$55.10	15%	25%	\$0.06	115.87	187.46	Pacific Gas and Electric Research
Health	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	Existing	99.51	7	\$3,400.00	15%	30%	\$3.19	204.51	343.11	AEG Research
Health	Refrigeration	Refrigeration - Anti-Sweat Heater	Fridge Feet	Existing	12.63	8	\$48.18	4%	25%	\$0.45	14.01	21.44	7th Power Plan
Health	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	Existing	24.51	4	\$10.44	4%	25%	\$0.09	25.41	34.22	Michigan Energy Measures Database
Health	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	Existing	214.42	16	\$165.20	4%	25%	\$0.06	36.46	47.11	7th Power Plan
Health	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	Existing	22.36	15	\$335.85	0%	0%	\$1.15	0.00	0.00	7th Power Plan
Health	Refrigeration	Refrigeration - Strip Curtain	Walkln Door	Existing	18.72	2	\$10.41	4%	25%	\$0.22	11.81	15.53	7th Power Plan
Health	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBtuh	Existing	0.34	15	\$45.43	2%	13%	\$9.90	65.94	80.92	Annual Energy Outlook, 2015
Health	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	Existing	7.29	15	\$313.82	2%	13%	\$3.30	116.82	141.24	Annual Energy Outlook, 2015
Health	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	Existing	136.35	10	\$506.05	4%	25%	\$0.38	22.78	30.71	Vermont TRM
Health	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	Existing	7.51	6	\$45.41	0%	0%	\$0.90	0.00	0.00	7th Power Plan
Health	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	Existing	0.61	8	\$3.72	0%	0%	\$0.73	0.00	0.00	7th Power Plan
Health	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	Existing	132.70	5	\$45.85	0%	0%	\$0.06	0.00	0.00	Illinois TRM
Health	Refrigeration	Grocery - ECMs for Display Cases	Fridge Case	Existing	31.18	16	\$165.20	4%	25%	\$0.39	12.15	14.74	7th Power Plan

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Health	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	Existing	1,263.74	5	\$187.94	25%	75%	\$0.03	154.27	160.59	Illinois TRM
Health	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	Existing	4,980.28	18	\$8,526.67	25%	50%	\$0.12	462.24	557.64	7th Power Plan
Health	Office Equipment	Office Equipment - Smart Power Strips	Smart Strip	Existing	29.83	4	\$41.63	10%	50%	\$0.28	283.69	277.81	7th Power Plan
Health	Cooling	Lodging - Guest Room Controls	LodgUnit	Existing	382.81	15	\$260.00	0%	0%	\$0.20	0.00	0.00	AEG-BEST
Health	Heating	Lodging - Guest Room Controls	LodgUnit	Existing	-331.38	15	\$260.00	0%	0%	\$0.20	0.00	0.00	AEG-BEST
Health	Office Equipment	Data Center - Best Practice Measures	sqft	Existing	0.01	5	\$0.00	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Health	Cooling	Data Center - Commercially Available Measures	sqft	Existing	0.02	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Health	Ventilation	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Health	Interior Lighting	Data Center - Commercially Available Measures	sqft	Existing	0.06	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Health	Office Equipment	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Health	Cooling	Data Center - Cutting Edge Measures	sqft	Existing	0.09	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Health	Office Equipment	Data Center - Cutting Edge Measures	sqft	Existing	0.00	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Health	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	Existing	5,027.99	18	\$4,092.80	0%	5%	\$0.06	77.40	93.20	7th Power Plan
Health	Miscellaneous	Pool Pump - Timer	perBldg	Existing	0.00	10	\$85.22	15%	75%	\$0.00	0.00	0.00	Ontario Power TRM
Health	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	Existing	12,915.31	6	\$35.93	1%	3%	\$0.00	0.00	197.76	7th Power Plan
Health	Cooling	Advanced New Construction Designs	sqft	Existing	1.07	25	\$4.11	0%	0%	\$0.03	0.00	0.00	AEG Research
Health	Heating	Advanced New Construction Designs	sqft	Existing	2.35	25	\$4.11	0%	0%	\$0.03	0.00	0.00	AEG Research
Health	Ventilation	Advanced New Construction Designs	sqft	Existing	0.46	25	\$4.11	0%	0%	\$0.03	0.00	0.00	AEG Research
Health	Water Heating	Advanced New Construction Designs	sqft	Existing	0.50	25	\$4.11	0%	0%	\$0.03	0.00	0.00	AEG Research

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Health	Interior Lighting	Advanced New Construction Designs	sqft	Existing	1.61	25	\$4.11	0%	0%	\$0.03	0.00	0.00	AEG Research
Health	Exterior Lighting	Advanced New Construction Designs	sqft	Existing	0.15	25	\$4.11	0%	0%	\$0.03	0.00	0.00	AEG Research
Health	Cooling	Strategic Energy Management	sqft	Existing	0.24	3	\$0.56	4%	28%	\$0.03	510.10	809.13	AEG Research
Health	Heating	Strategic Energy Management	sqft	Existing	0.43	3	\$0.56	4%	28%	\$0.03	59.86	60.94	AEG Research
Health	Ventilation	Strategic Energy Management	sqft	Existing	0.11	3	\$0.56	4%	28%	\$0.03	256.80	340.18	AEG Research
Health	Water Heating	Strategic Energy Management	sqft	Existing	0.08	3	\$0.56	4%	28%	\$0.03	24.13	45.63	AEG Research
Health	Interior Lighting	Strategic Energy Management	sqft	Existing	0.23	3	\$0.56	4%	28%	\$0.03	502.33	796.41	AEG Research
Health	Exterior Lighting	Strategic Energy Management	sqft	Existing	0.02	3	\$0.56	4%	28%	\$0.03	50.27	82.62	AEG Research
Health	Refrigeration	Strategic Energy Management	sqft	Existing	0.02	3	\$0.56	4%	28%	\$0.03	58.92	68.38	AEG Research
Health	Office Equipment	Strategic Energy Management	sqft	Existing	0.03	3	\$0.56	4%	28%	\$0.03	96.98	94.33	AEG Research
Health	Cooling	Commissioning	sqft	Existing	0.34	3	\$1.63	0%	0%	\$0.03	0.00	0.00	AEG Research
Health	Heating	Commissioning	sqft	Existing	0.59	3	\$1.63	0%	0%	\$0.03	0.00	0.00	AEG Research
Health	Ventilation	Commissioning	sqft	Existing	0.14	3	\$1.63	0%	0%	\$0.03	0.00	0.00	AEG Research
Health	Water Heating	Commissioning	sqft	Existing	0.04	3	\$1.63	0%	0%	\$0.03	0.00	0.00	AEG Research
Health	Interior Lighting	Commissioning	sqft	Existing	0.26	3	\$1.63	0%	0%	\$0.03	0.00	0.00	AEG Research
Health	Exterior Lighting	Commissioning	sqft	Existing	0.03	3	\$1.63	0%	0%	\$0.03	0.00	0.00	AEG Research
Health	Refrigeration	Commissioning	sqft	Existing	0.05	3	\$1.63	0%	0%	\$0.03	0.00	0.00	AEG Research
Health	Cooling	Retrocommissioning	sqft	Existing	0.34	3	\$1.04	12%	52%	\$0.03	1,209.64	1,887.42	AEG Research
Health	Heating	Retrocommissioning	sqft	Existing	0.59	3	\$1.04	12%	52%	\$0.03	136.53	139.93	AEG Research
Health	Ventilation	Retrocommissioning	sqft	Existing	0.15	3	\$1.04	12%	52%	\$0.03	585.73	781.26	AEG Research
Health	Water Heating	Retrocommissioning	sqft	Existing	0.04	3	\$1.04	12%	52%	\$0.03	18.35	34.94	AEG Research
Health	Interior Lighting	Retrocommissioning	sqft	Existing	0.26	3	\$1.04	12%	52%	\$0.03	954.78	1,524.31	AEG Research

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Health	Exterior Lighting	Retrocommissioning	sqft	Existing	0.03	3	\$1.04	12%	52%	\$0.03	95.54	158.13	AEG Research
Health	Refrigeration	Retrocommissioning	sqft	Existing	0.05	3	\$1.04	12%	52%	\$0.03	223.96	261.73	AEG Research
Health	Interior Lighting	Fruit Storage - Lighting Controls	sqft	Existing	0.18	10	\$0.09	0%	0%	\$0.04	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Health	Refrigeration	Fruit Storage Refrigeration Retrofit	sqft	Existing	0.16	10	\$1.09	0%	0%	\$0.68	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Health	Refrigeration	Fruit Storage Refrigeration Tuneup	sqft	Existing	0.04	3	\$0.23	0%	0%	\$1.50	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Health	Refrigeration	Fruit Storage Retrofit - CO2 Scrub	sqft	Existing	0.08	10	\$3.13	0%	0%	\$4.03	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Health	Refrigeration	Fruit Storage Retrofit - Membrane	sqft	Existing	0.02	10	\$0.68	0%	0%	\$4.37	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Health	Cooling	Insulation - Ceiling	sqft roof	New	0.02	45	\$1.28	15%	50%	\$0.17	20.33	21.27	Building Energy Simulation Tool
Health	Heating	Insulation - Ceiling	sqft roof	New	0.30	45	\$1.28	15%	50%	\$0.17	14.10	14.18	Building Energy Simulation Tool
Health	Ventilation	Insulation - Ceiling	sqft roof	New	0.06	45	\$1.28	15%	50%	\$0.17	57.18	62.09	Building Energy Simulation Tool
Health	Cooling	Insulation - Ducting	sqft duct	New	0.35	20	\$0.84	15%	50%	\$0.00	337.21	348.79	Building Energy Simulation Tool
Health	Heating	Insulation - Ducting	sqft duct	New	0.00	20	\$0.84	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Health	Ventilation	Insulation - Ducting	sqft duct	New	0.00	20	\$0.84	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Health	Cooling	Building Shell - Cool Roofs	sqft roof	New	0.14	20	\$0.78	45%	50%	\$7.81	19.33	20.45	Building Energy Simulation Tool
Health	Heating	Building Shell - Cool Roofs	sqft roof	New	-0.16	20	\$0.78	45%	50%	\$7.81	-1.06	-1.06	Building Energy Simulation Tool
Health	Ventilation	Building Shell - Cool Roofs	sqft roof	New	-0.03	20	\$0.78	45%	50%	\$7.81	-4.30	-4.61	Building Energy Simulation Tool
Health	Cooling	Insulation - Wall Cavity	sqft wall	New	0.01	45	\$0.78	15%	50%	\$0.09	4.27	4.47	Building Energy Simulation Tool
Health	Heating	Insulation - Wall Cavity	sqft wall	New	0.36	45	\$0.78	15%	50%	\$0.09	14.96	15.03	Building Energy Simulation Tool
Health	Ventilation	Insulation - Wall Cavity	sqft wall	New	0.07	45	\$0.78	15%	50%	\$0.09	60.67	65.80	Building Energy Simulation Tool

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Health	Cooling	HVAC - Duct Repair and Sealing	tonCool	New	18.60	18	\$0.57	15%	35%	\$0.00	68.04	72.23	Building Energy Simulation Tool
Health	Heating	HVAC - Duct Repair and Sealing	tonCool	New	135.25	18	\$0.57	15%	35%	\$0.00	25.25	25.29	Building Energy Simulation Tool
Health	Ventilation	HVAC - Duct Repair and Sealing	tonCool	New	25.44	18	\$0.57	15%	35%	\$0.00	102.63	110.34	Building Energy Simulation Tool
Health	Cooling	Windows - High Efficiency Glazing	sqft window	New	7.74	30	\$35.93	66%	66%	\$0.04	0.00	0.00	7th Power Plan
Health	Heating	Windows - High Efficiency Glazing	sqft window	New	38.13	30	\$35.93	66%	66%	\$0.04	0.00	0.00	7th Power Plan
Health	Ventilation	Windows - High Efficiency Glazing	sqft window	New	4.11	30	\$35.93	66%	66%	\$0.04	0.00	0.00	7th Power Plan
Health	Cooling	Chiller - Chilled Water Reset	ChillCtrl	New	16,118.33	10	\$884.85	15%	75%	\$0.00	427.31	486.61	AEG-BEST
Health	Cooling	Chiller - Chilled Water Variable-Flow System	HP cool	New	422.10	15	\$332.55	15%	75%	\$0.04	1,980.72	2,205.79	AEG-BEST
Health	Cooling	Chiller - Variable Speed Fans	HP fan	New	914.13	15	\$208.36	15%	75%	\$0.01	427.82	476.84	New Jersey TRM
Health	Cooling	Water-Cooled Chiller - Condenser Water Reset	ChillCtrl	New	42,097.25	10	\$884.85	15%	75%	\$0.00	884.28	1,013.92	AEG-BEST
Health	Cooling	HVAC - Economizer	HP cool	New	112.40	10	\$168.42	18%	75%	\$0.10	461.79	520.38	AEG-BEST
Health	Heating	Space Heating - Heat Recovery Ventilator	CFM	New	2.79	14	\$5.08	6%	75%	\$0.16	78.43	78.56	7th Power Plan
Health	Ventilation	Ventilation - ECM on VAV Boxes	sqft	New	0.43	18	\$0.25	15%	20%	\$0.03	119.63	128.82	7th Power Plan
Health	Ventilation	Ventilation - Variable Speed Control	sqft	New	0.04	15	\$181.39	19%	50%	\$278.48	42.47	49.14	AEG-BEST
Health	Ventilation	Ventilation - Demand Controlled	sqft	New	0.02	15	\$0.25	15%	75%	\$0.68	46.41	53.72	7th Power Plan
Health	Cooling	Destratification Fans (HVLS)	Strat Fan	New	4,411.12	15	\$7,270.90	15%	15%	\$0.02	0.00	0.00	AEG Research
Health	Heating	Destratification Fans (HVLS)	Strat Fan	New	19,686.37	15	\$7,270.90	15%	15%	\$0.02	0.00	0.00	AEG Research
Health	Cooling	RTU - Maintenance	tonCool	New	87.38	3	\$35.00	15%	45%	\$0.08	8.97	11.46	AEG Research
Health	Cooling	RTU - Advanced Controls	sqft	New	0.17	15	\$0.07	15%	45%	\$0.02	29.15	30.78	7th Power Plan
Health	Cooling	RTU - Evaporative Precooler	tonCool	New	167.35	15	\$681.62	15%	75%	\$0.21	245.01	252.19	AEG Research
Health	Cooling	Ductless Mini Split Heat Pump	tonCool	New	387.42	15	\$3,359.26	15%	25%	\$0.22	2.29	2.49	7th Power Plan

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Health	Heating	Ductless Mini Split Heat Pump	tonCool	New	588.64	15	\$3,359.26	15%	25%	\$0.22	0.63	0.64	7th Power Plan
Health	Cooling	Thermostat - WiFi/Interactive	sqft	New	0.59	5	\$0.66	30%	40%	\$0.05	37.09	44.29	7th Power Plan
Health	Heating	Thermostat - WiFi/Interactive	sqft	New	1.38	5	\$0.66	30%	40%	\$0.05	4.31	4.32	7th Power Plan
Health	Ventilation	Thermostat - WiFi/Interactive	sqft	New	0.26	5	\$0.66	30%	40%	\$0.05	17.20	20.05	7th Power Plan
Health	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	New	81.90	10	\$8.35	25%	65%	\$0.01	8.50	13.60	Illinois TRM
Health	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	New	85.30	10	\$11.64	25%	65%	\$0.01	4.44	7.09	7th Power Plan
Health	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	New	49.09	15	\$36.75	15%	50%	\$0.03	9.40	12.00	Hawaii TRM
Health	Water Heating	Water Heater - Pipe Insulation	PipeFeet	New	512.04	15	\$14.88	1%	75%	\$0.00	29.37	43.75	AEG-BEST
Health	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	New	56.13	4	\$144.04	25%	65%	\$0.27	2.35	4.14	7th Power Plan
Health	Water Heating	Water Heater - Thermostat Setback	WHunits	New	49.29	2	\$5.00	15%	75%	\$0.02	1.27	2.32	Illinois TRM
Health	Water Heating	Water Heater - Solar System	PipeFeet	New	1,782.68	20	\$215.28	1%	30%	\$0.00	41.27	61.01	AEG-BEST
Health	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.69	15	\$0.35	11%	23%	\$0.03	924.81	1,099.81	7th Power Plan
Health	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.95	15	\$0.58	11%	23%	\$0.03	1,271.63	1,519.74	7th Power Plan
Health	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	New	302.70	15	\$54.41	1%	3%	\$0.01	12.63	17.02	7th Power Plan
Health	Interior Lighting	Interior Lighting - Timeclocks and Timers	occ sens	New	0.00	8	\$111.67	7%	15%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Health	Interior Lighting	Interior Lighting - Skylights	1000 sqft	New	0.00	15	\$1,006.35	18%	25%	\$0.00	0.00	0.00	AEG Research
Health	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	1000 sqft	New	405.70	16	\$1,807.69	5%	15%	\$0.22	125.82	167.95	7th Power Plan
Health	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	New	3,848.70	11	\$30.80	15%	50%	\$0.00	349.47	463.69	Illinois TRM
Health	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	ELtg Watts	New	1.01	8	\$0.63	15%	25%	\$0.05	39.78	60.95	7th Power Plan

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Health	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	New	69.14	8	\$55.10	15%	25%	\$0.06	20.96	31.96	Pacific Gas and Electric Research
Health	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	New	84.28	7	\$3,400.00	15%	30%	\$3.19	33.24	52.39	AEG Research
Health	Refrigeration	Refrigeration - Anti-Sweat Heater	Fridge Feet	New	10.31	8	\$48.18	4%	25%	\$0.59	2.73	3.32	7th Power Plan
Health	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	New	20.89	4	\$10.44	4%	25%	\$0.11	2.11	2.55	Michigan Energy Measures Database
Health	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	New	188.58	16	\$165.20	4%	25%	\$0.07	11.28	12.30	7th Power Plan
Health	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	New	22.04	15	\$335.85	0%	0%	\$1.24	0.00	0.00	7th Power Plan
Health	Refrigeration	Refrigeration - Strip Curtain	Walkin Door	New	17.57	2	\$10.41	4%	25%	\$0.25	0.40	0.47	7th Power Plan
Health	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBtuh	New	0.34	15	\$45.43	2%	13%	\$10.64	22.58	23.24	Annual Energy Outlook, 2015
Health	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	New	7.18	15	\$313.82	2%	13%	\$3.55	39.27	40.45	Annual Energy Outlook, 2015
Health	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	New	125.02	10	\$506.05	4%	25%	\$0.43	5.82	6.42	Vermont TRM
Health	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	New	7.30	6	\$45.41	0%	0%	\$0.98	0.00	0.00	7th Power Plan
Health	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	New	0.59	8	\$3.72	0%	0%	\$0.79	0.00	0.00	7th Power Plan
Health	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	New	126.07	5	\$45.85	0%	0%	\$0.07	0.00	0.00	Illinois TRM
Health	Refrigeration	Grocery - ECMs for Display Cases	Fridge Case	New	30.27	16	\$165.20	4%	25%	\$0.43	4.13	4.26	7th Power Plan
Health	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	New	1,242.99	5	\$187.94	25%	75%	\$0.03	18.62	18.83	Illinois TRM
Health	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	New	3,644.25	18	\$8,526.67	25%	50%	\$0.13	203.55	219.41	7th Power Plan
Health	Office Equipment	Office Equipment - Smart Power Strips	Smart Strip	New	36.15	4	\$41.63	10%	50%	\$0.23	27.93	26.88	7th Power Plan
Health	Cooling	Lodging - Guest Room Controls	LodgUnit	New	400.59	15	\$260.00	0%	0%	\$0.10	0.00	0.00	AEG-BEST
Health	Heating	Lodging - Guest Room Controls	LodgUnit	New	-330.31	15	\$260.00	0%	0%	\$0.10	0.00	0.00	AEG-BEST

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Health	Office Equipment	Data Center - Best Practice Measures	sqft	New	0.01	5	\$0.00	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Health	Cooling	Data Center - Commercially Available Measures	sqft	New	0.01	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Health	Ventilation	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Health	Interior Lighting	Data Center - Commercially Available Measures	sqft	New	0.05	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Health	Office Equipment	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Health	Cooling	Data Center - Cutting Edge Measures	sqft	New	0.05	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Health	Office Equipment	Data Center - Cutting Edge Measures	sqft	New	0.00	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Health	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	New	3,699.90	18	\$4,092.80	0%	5%	\$0.06	34.09	36.77	7th Power Plan
Health	Miscellaneous	Pool Pump - Timer	perBldg	New	0.00	10	\$85.22	15%	75%	\$0.00	0.00	0.00	Ontario Power TRM
Health	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	New	6,457.65	6	\$35.93	1%	3%	\$0.00	0.00	16.57	7th Power Plan
Health	Cooling	Advanced New Construction Designs	sqft	New	1.09	25	\$4.11	10%	25%	\$0.03	1,016.12	1,037.63	AEG Research
Health	Heating	Advanced New Construction Designs	sqft	New	2.52	25	\$4.11	10%	25%	\$0.03	116.15	115.72	AEG Research
Health	Ventilation	Advanced New Construction Designs	sqft	New	0.48	25	\$4.11	10%	25%	\$0.03	471.14	509.00	AEG Research
Health	Water Heating	Advanced New Construction Designs	sqft	New	0.44	25	\$4.11	10%	25%	\$0.03	56.76	68.89	AEG Research
Health	Interior Lighting	Advanced New Construction Designs	sqft	New	1.38	25	\$4.11	10%	25%	\$0.03	1,144.10	1,325.14	AEG Research
Health	Exterior Lighting	Advanced New Construction Designs	sqft	New	0.12	25	\$4.11	10%	25%	\$0.03	105.14	123.93	AEG Research
Health	Cooling	Strategic Energy Management	sqft	New	0.17	3	\$0.46	4%	28%	\$0.02	24.77	31.18	AEG Research
Health	Heating	Strategic Energy Management	sqft	New	0.40	3	\$0.46	4%	28%	\$0.02	2.82	2.84	AEG Research
Health	Ventilation	Strategic Energy Management	sqft	New	0.07	3	\$0.46	4%	28%	\$0.02	11.39	13.36	AEG Research

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Health	Water Heating	Strategic Energy Management	sqft	New	0.07	3	\$0.46	4%	28%	\$0.02	1.36	2.41	AEG Research
Health	Interior Lighting	Strategic Energy Management	sqft	New	0.21	3	\$0.46	4%	28%	\$0.02	27.37	43.15	AEG Research
Health	Exterior Lighting	Strategic Energy Management	sqft	New	0.02	3	\$0.46	4%	28%	\$0.02	2.51	4.30	AEG Research
Health	Refrigeration	Strategic Energy Management	sqft	New	0.02	3	\$0.46	4%	28%	\$0.02	3.27	3.51	AEG Research
Health	Office Equipment	Strategic Energy Management	sqft	New	0.04	3	\$0.46	4%	28%	\$0.02	5.97	5.81	AEG Research
Health	Cooling	Commissioning	sqft	New	0.24	3	\$1.26	12%	52%	\$0.03	57.23	72.26	AEG Research
Health	Heating	Commissioning	sqft	New	0.56	3	\$1.26	12%	52%	\$0.03	6.52	6.57	AEG Research
Health	Ventilation	Commissioning	sqft	New	0.10	3	\$1.26	12%	52%	\$0.03	26.32	30.96	AEG Research
Health	Water Heating	Commissioning	sqft	New	0.03	3	\$1.26	12%	52%	\$0.03	1.04	1.86	AEG Research
Health	Interior Lighting	Commissioning	sqft	New	0.25	3	\$1.26	12%	52%	\$0.03	52.68	83.26	AEG Research
Health	Exterior Lighting	Commissioning	sqft	New	0.02	3	\$1.26	12%	52%	\$0.03	4.84	8.30	AEG Research
Health	Refrigeration	Commissioning	sqft	New	0.06	3	\$1.26	12%	52%	\$0.03	12.62	13.59	AEG Research
Health	Cooling	Retrocommissioning	sqft	New	0.24	3	\$0.80	0%	0%	\$0.03	0.00	0.00	AEG Research
Health	Heating	Retrocommissioning	sqft	New	0.56	3	\$0.80	0%	0%	\$0.03	0.00	0.00	AEG Research
Health	Ventilation	Retrocommissioning	sqft	New	0.10	3	\$0.80	0%	0%	\$0.03	0.00	0.00	AEG Research
Health	Water Heating	Retrocommissioning	sqft	New	0.03	3	\$0.80	0%	0%	\$0.03	0.00	0.00	AEG Research
Health	Interior Lighting	Retrocommissioning	sqft	New	0.25	3	\$0.80	0%	0%	\$0.03	0.00	0.00	AEG Research
Health	Exterior Lighting	Retrocommissioning	sqft	New	0.02	3	\$0.80	0%	0%	\$0.03	0.00	0.00	AEG Research
Health	Refrigeration	Retrocommissioning	sqft	New	0.06	3	\$0.80	0%	0%	\$0.03	0.00	0.00	AEG Research
Health	Interior Lighting	Fruit Storage - Lighting Controls	sqft	New	0.18	10	\$0.09	0%	0%	\$0.03	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Health	Refrigeration	Fruit Storage Refrigeration Retrofit	sqft	New	0.17	10	\$1.09	0%	0%	\$0.66	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Health	Refrigeration	Fruit Storage Refrigeration Tuneup	sqft	New	0.04	3	\$0.23	0%	0%	\$1.47	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx

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Health	Refrigeration	Fruit Storage Retrofit - CO2 Scrub	sqft	New	0.08	10	\$3.13	0%	0%	\$3.94	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Health	Refrigeration	Fruit Storage Retrofit - Membrane	sqft	New	0.02	10	\$0.68	0%	0%	\$4.27	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
College	Cooling	Insulation - Ceiling	sqft roof	Existing	0.02	45	\$1.28	15%	35%	\$0.11	71.83	85.25	Building Energy Simulation Tool
College	Heating	Insulation - Ceiling	sqft roof	Existing	0.50	45	\$1.28	15%	35%	\$0.11	543.48	564.92	Building Energy Simulation Tool
College	Ventilation	Insulation - Ceiling	sqft roof	Existing	0.07	45	\$1.28	15%	35%	\$0.11	237.88	298.52	Building Energy Simulation Tool
College	Cooling	Insulation - Ducting	sqft duct	Existing	0.53	20	\$0.84	15%	35%	\$0.00	798.46	911.13	Building Energy Simulation Tool
College	Heating	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.84	15%	35%	\$0.00	0.00	0.00	Building Energy Simulation Tool
College	Ventilation	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.84	15%	35%	\$0.00	0.00	0.00	Building Energy Simulation Tool
College	Cooling	Building Shell - Cool Roofs	sqft roof	Existing	0.45	20	\$0.78	45%	50%	\$0.23	353.68	375.64	Building Energy Simulation Tool
College	Heating	Building Shell - Cool Roofs	sqft roof	Existing	-0.20	20	\$0.78	45%	50%	\$0.23	-54.82	-55.39	Building Energy Simulation Tool
College	Ventilation	Building Shell - Cool Roofs	sqft roof	Existing	-0.03	20	\$0.78	45%	50%	\$0.23	-24.37	-29.31	Building Energy Simulation Tool
College	Cooling	Insulation - Wall Cavity	sqft wall	Existing	-0.42	45	\$0.78	15%	35%	\$0.12	-404.16	-430.66	Building Energy Simulation Tool
College	Heating	Insulation - Wall Cavity	sqft wall	Existing	0.67	45	\$0.78	15%	35%	\$0.12	232.65	234.33	Building Energy Simulation Tool
College	Ventilation	Insulation - Wall Cavity	sqft wall	Existing	0.10	45	\$0.78	15%	35%	\$0.12	103.43	123.97	Building Energy Simulation Tool
College	Cooling	HVAC - Duct Repair and Sealing	tonCool	Existing	27.72	18	\$0.57	15%	50%	\$0.00	605.45	644.89	Building Energy Simulation Tool
College	Heating	HVAC - Duct Repair and Sealing	tonCool	Existing	-10.70	18	\$0.57	15%	50%	\$0.00	-83.32	-84.12	Building Energy Simulation Tool
College	Ventilation	HVAC - Duct Repair and Sealing	tonCool	Existing	-1.53	18	\$0.57	15%	50%	\$0.00	-37.04	-44.51	Building Energy Simulation Tool
College	Cooling	Windows - High Efficiency Glazing	sqft window	Existing	9.46	30	\$35.93	48%	48%	\$0.04	0.00	0.00	7th Power Plan
College	Heating	Windows - High Efficiency Glazing	sqft window	Existing	35.76	30	\$35.93	48%	48%	\$0.04	0.00	0.00	7th Power Plan

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College	Ventilation	Windows - High Efficiency Glazing	sqft window	Existing	2.98	30	\$35.93	48%	48%	\$0.04	0.00	0.00	7th Power Plan
College	Cooling	Chiller - Chilled Water Reset	ChillCtrl	Existing	16,771.70	10	\$884.85	15%	75%	\$0.01	1,254.36	1,378.15	AEG-BEST
College	Cooling	Chiller - Chilled Water Variable-Flow System	HP cool	Existing	468.71	15	\$332.55	15%	75%	\$0.05	4,834.77	5,425.52	AEG-BEST
College	Cooling	Chiller - Variable Speed Fans	HP fan	Existing	1,094.65	15	\$208.36	15%	75%	\$0.01	1,133.66	1,259.33	New Jersey TRM
College	Cooling	Water-Cooled Chiller - Condenser Water Reset	ChillCtrl	Existing	0.00	10	\$884.85	15%	75%	\$0.00	0.00	0.00	AEG-BEST
College	Cooling	HVAC - Economizer	HP cool	Existing	101.91	10	\$168.42	18%	75%	\$0.15	2,741.51	3,362.42	AEG-BEST
College	Heating	Space Heating - Heat Recovery Ventilator	CFM	Existing	0.96	14	\$5.08	3%	75%	\$0.43	2,279.13	2,445.39	7th Power Plan
College	Ventilation	Ventilation - ECM on VAV Boxes	sqft	Existing	0.25	18	\$0.25	15%	20%	\$0.06	214.18	257.06	7th Power Plan
College	Ventilation	Ventilation - Variable Speed Control	sqft	Existing	0.02	15	\$181.39	13%	50%	\$530.40	145.77	201.60	AEG-BEST
College	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.01	15	\$0.25	15%	75%	\$1.30	133.51	183.73	7th Power Plan
College	Cooling	Destratification Fans (HVLS)	Strat Fan	Existing	4,498.75	15	\$7,270.90	15%	25%	\$0.03	643.01	758.73	AEG Research
College	Heating	Destratification Fans (HVLS)	Strat Fan	Existing	15,757.51	15	\$7,270.90	15%	25%	\$0.03	829.61	840.33	AEG Research
College	Cooling	RTU - Maintenance	tonCool	Existing	36.67	3	\$35.00	15%	45%	\$0.22	396.48	516.67	AEG Research
College	Cooling	RTU - Advanced Controls	sqft	Existing	0.08	15	\$0.07	15%	45%	\$0.06	207.67	230.87	7th Power Plan
College	Cooling	RTU - Evaporative Precooler	tonCool	Existing	72.86	15	\$681.62	15%	75%	\$0.61	1,364.60	1,548.38	AEG Research
College	Cooling	Ductless Mini Split Heat Pump	tonCool	Existing	168.95	15	\$3,359.26	15%	25%	\$0.45	36.36	47.29	7th Power Plan
College	Heating	Ductless Mini Split Heat Pump	tonCool	Existing	366.94	15	\$3,359.26	15%	25%	\$0.45	668.11	725.62	7th Power Plan
College	Cooling	Thermostat - WiFi/Interactive	sqft	Existing	0.57	5	\$0.66	30%	40%	\$0.06	828.72	972.19	7th Power Plan
College	Heating	Thermostat - WiFi/Interactive	sqft	Existing	1.06	5	\$0.66	30%	40%	\$0.06	582.60	600.40	7th Power Plan
College	Ventilation	Thermostat - WiFi/Interactive	sqft	Existing	0.15	5	\$0.66	30%	40%	\$0.06	260.41	320.00	7th Power Plan
College	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	Existing	116.65	10	\$8.35	25%	65%	\$0.00	135.49	244.98	Illinois TRM

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College	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	Existing	120.51	10	\$11.64	25%	65%	\$0.01	69.62	127.33	7th Power Plan
College	Water Heating	Water Heater - High Efficiency Circulation Pump	WHUnits	Existing	56.82	15	\$36.75	15%	25%	\$0.03	18.31	29.19	Hawaii TRM
College	Water Heating	Water Heater - Pipe Insulation	PipeFeet	Existing	360.46	15	\$14.88	16%	75%	\$0.00	257.09	446.09	AEG-BEST
College	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	Existing	75.22	4	\$144.04	25%	65%	\$0.24	82.34	158.17	7th Power Plan
College	Water Heating	Water Heater - Thermostat Setback	WHUnits	Existing	57.65	2	\$5.00	15%	75%	\$0.02	123.15	230.31	Illinois TRM
College	Water Heating	Water Heater - Solar System	PipeFeet	Existing	1,217.25	20	\$215.28	1%	30%	\$0.01	417.12	751.04	AEG-BEST
College	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.39	15	\$0.35	3%	23%	\$0.05	1,543.37	2,015.61	7th Power Plan
College	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.53	15	\$0.58	3%	23%	\$0.06	2,076.30	2,774.96	7th Power Plan
College	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	Existing	321.55	15	\$54.41	1%	3%	\$0.01	43.09	65.96	7th Power Plan
College	Interior Lighting	Interior Lighting - Timeclocks and Timers	occ sens	Existing	0.00	8	\$111.67	7%	15%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
College	Interior Lighting	Interior Lighting - Skylights	1000 sqft	Existing	0.00	15	\$1,006.35	15%	30%	\$0.00	0.00	0.00	AEG Research
College	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	1000 sqft	Existing	250.01	16	\$1,807.69	5%	15%	\$0.40	384.54	646.41	7th Power Plan
College	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	Existing	2,439.74	11	\$30.80	15%	50%	\$0.00	1,414.79	2,104.98	Illinois TRM
College	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	ELtg Watts	Existing	0.37	8	\$0.63	15%	25%	\$0.15	502.49	813.63	7th Power Plan
College	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	Existing	34.44	8	\$55.10	15%	25%	\$0.15	274.37	437.13	Pacific Gas and Electric Research
College	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	Existing	40.75	7	\$3,400.00	15%	30%	\$8.13	475.89	794.84	AEG Research
College	Refrigeration	Refrigeration - Anti-Sweat Heater	Fridge Feet	Existing	8.51	8	\$48.18	4%	25%	\$0.68	4.87	7.44	7th Power Plan
College	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	Existing	17.50	4	\$10.44	4%	25%	\$0.13	8.54	12.02	Michigan Energy Measures Database
College	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	Existing	175.05	16	\$165.20	4%	25%	\$0.07	13.06	17.16	7th Power Plan

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College	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	Existing	15.56	15	\$335.85	0%	0%	\$1.66	0.00	0.00	7th Power Plan
College	Refrigeration	Refrigeration - Strip Curtain	Walkin Door	Existing	12.64	2	\$10.41	4%	25%	\$0.33	3.26	4.27	7th Power Plan
College	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	Existing	0.24	15	\$45.43	2%	13%	\$14.28	22.98	28.27	Annual Energy Outlook, 2015
College	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	Existing	5.07	15	\$313.82	2%	13%	\$4.76	40.73	49.34	Annual Energy Outlook, 2015
College	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	Existing	111.59	10	\$506.05	4%	25%	\$0.46	8.19	11.21	Vermont TRM
College	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	Existing	5.07	6	\$45.41	0%	0%	\$1.33	0.00	0.00	7th Power Plan
College	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	Existing	0.41	8	\$3.72	0%	0%	\$1.08	0.00	0.00	7th Power Plan
College	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	Existing	85.70	5	\$45.85	0%	0%	\$0.09	0.00	0.00	Illinois TRM
College	Refrigeration	Grocery - ECMs for Display Cases	Fridge Case	Existing	21.10	16	\$165.20	4%	25%	\$0.58	4.24	5.13	7th Power Plan
College	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	Existing	1,265.72	5	\$187.94	25%	75%	\$0.03	53.59	55.71	Illinois TRM
College	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	Existing	2,022.49	18	\$8,526.67	25%	50%	\$0.25	343.26	425.61	7th Power Plan
College	Office Equipment	Office Equipment - Smart Power Strips	Smart Strip	Existing	24.91	4	\$41.63	10%	50%	\$0.33	415.66	404.39	7th Power Plan
College	Cooling	Lodging - Guest Room Controls	LodgUnit	Existing	163.92	15	\$260.00	0%	0%	\$10.00	0.00	0.00	AEG-BEST
College	Heating	Lodging - Guest Room Controls	LodgUnit	Existing	-212.61	15	\$260.00	0%	0%	\$10.00	0.00	0.00	AEG-BEST
College	Office Equipment	Data Center - Best Practice Measures	sqft	Existing	0.01	5	\$0.00	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
College	Cooling	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
College	Ventilation	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
College	Interior Lighting	Data Center - Commercially Available Measures	sqft	Existing	0.03	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
College	Office Equipment	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx

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College	Cooling	Data Center - Cutting Edge Measures	sqft	Existing	0.05	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
College	Office Equipment	Data Center - Cutting Edge Measures	sqft	Existing	0.00	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
College	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	Existing	2,058.18	18	\$4,092.80	0%	5%	\$0.12	58.39	71.61	7th Power Plan
College	Miscellaneous	Pool Pump - Timer	perBldg	Existing	455.99	10	\$85.22	15%	75%	\$0.02	147.13	148.80	Ontario Power TRM
College	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	Existing	3,489.68	6	\$35.93	1%	3%	\$0.00	93.12	93.95	7th Power Plan
College	Cooling	Advanced New Construction Designs	sqft	Existing	0.80	25	\$4.11	0%	0%	\$0.05	0.00	0.00	AEG Research
College	Heating	Advanced New Construction Designs	sqft	Existing	1.87	25	\$4.11	0%	0%	\$0.05	0.00	0.00	AEG Research
College	Ventilation	Advanced New Construction Designs	sqft	Existing	0.26	25	\$4.11	0%	0%	\$0.05	0.00	0.00	AEG Research
College	Water Heating	Advanced New Construction Designs	sqft	Existing	0.29	25	\$4.11	0%	0%	\$0.05	0.00	0.00	AEG Research
College	Interior Lighting	Advanced New Construction Designs	sqft	Existing	0.75	25	\$4.11	0%	0%	\$0.05	0.00	0.00	AEG Research
College	Exterior Lighting	Advanced New Construction Designs	sqft	Existing	0.19	25	\$4.11	0%	0%	\$0.05	0.00	0.00	AEG Research
College	Cooling	Strategic Energy Management	sqft	Existing	0.18	3	\$0.20	3%	29%	\$0.02	758.83	901.12	AEG Research
College	Heating	Strategic Energy Management	sqft	Existing	0.32	3	\$0.20	3%	29%	\$0.02	500.33	513.03	AEG Research
College	Ventilation	Strategic Energy Management	sqft	Existing	0.05	3	\$0.20	3%	29%	\$0.02	224.41	289.46	AEG Research
College	Water Heating	Strategic Energy Management	sqft	Existing	0.05	3	\$0.20	3%	29%	\$0.02	81.72	154.97	AEG Research
College	Interior Lighting	Strategic Energy Management	sqft	Existing	0.11	3	\$0.20	3%	29%	\$0.02	460.04	752.71	AEG Research
College	Exterior Lighting	Strategic Energy Management	sqft	Existing	0.03	3	\$0.20	3%	29%	\$0.02	136.92	213.80	AEG Research
College	Refrigeration	Strategic Energy Management	sqft	Existing	0.00	3	\$0.20	3%	29%	\$0.02	22.30	25.90	AEG Research
College	Office Equipment	Strategic Energy Management	sqft	Existing	0.03	3	\$0.20	3%	29%	\$0.02	154.12	148.82	AEG Research
College	Cooling	Commissioning	sqft	Existing	0.24	3	\$0.60	0%	0%	\$0.02	0.00	0.00	AEG Research

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College	Heating	Commissioning	sqft	Existing	0.43	3	\$0.60	0%	0%	\$0.02	0.00	0.00	AEG Research
College	Ventilation	Commissioning	sqft	Existing	0.06	3	\$0.60	0%	0%	\$0.02	0.00	0.00	AEG Research
College	Water Heating	Commissioning	sqft	Existing	0.02	3	\$0.60	0%	0%	\$0.02	0.00	0.00	AEG Research
College	Interior Lighting	Commissioning	sqft	Existing	0.13	3	\$0.60	0%	0%	\$0.02	0.00	0.00	AEG Research
College	Exterior Lighting	Commissioning	sqft	Existing	0.04	3	\$0.60	0%	0%	\$0.02	0.00	0.00	AEG Research
College	Refrigeration	Commissioning	sqft	Existing	0.01	3	\$0.60	0%	0%	\$0.02	0.00	0.00	AEG Research
College	Cooling	Retrocommissioning	sqft	Existing	0.24	3	\$0.38	10%	46%	\$0.02	1,436.14	1,718.51	AEG Research
College	Heating	Retrocommissioning	sqft	Existing	0.43	3	\$0.38	10%	46%	\$0.02	946.92	978.28	AEG Research
College	Ventilation	Retrocommissioning	sqft	Existing	0.06	3	\$0.38	10%	46%	\$0.02	424.72	552.03	AEG Research
College	Water Heating	Retrocommissioning	sqft	Existing	0.02	3	\$0.38	10%	46%	\$0.02	51.55	98.53	AEG Research
College	Interior Lighting	Retrocommissioning	sqft	Existing	0.13	3	\$0.38	10%	46%	\$0.02	725.55	1,196.37	AEG Research
College	Exterior Lighting	Retrocommissioning	sqft	Existing	0.04	3	\$0.38	10%	46%	\$0.02	215.94	339.81	AEG Research
College	Refrigeration	Retrocommissioning	sqft	Existing	0.01	3	\$0.38	10%	46%	\$0.02	70.36	82.32	AEG Research
College	Interior Lighting	Fruit Storage - Lighting Controls	sqft	Existing	0.09	10	\$0.09	0%	0%	\$0.07	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
College	Refrigeration	Fruit Storage Refrigeration Retrofit	sqft	Existing	0.03	10	\$1.09	0%	0%	\$3.42	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
College	Refrigeration	Fruit Storage Refrigeration Tuneup	sqft	Existing	0.01	3	\$0.23	0%	0%	\$7.57	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
College	Refrigeration	Fruit Storage Retrofit - CO2 Scrub	sqft	Existing	0.02	10	\$3.13	0%	0%	\$20.26	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
College	Refrigeration	Fruit Storage Retrofit - Membrane	sqft	Existing	0.00	10	\$0.68	0%	0%	\$21.99	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
College	Cooling	Insulation - Ceiling	sqft roof	New	0.00	45	\$1.28	15%	50%	\$0.57	0.00	0.00	Building Energy Simulation Tool
College	Heating	Insulation - Ceiling	sqft roof	New	0.10	45	\$1.28	15%	50%	\$0.57	103.79	104.23	Building Energy Simulation Tool
College	Ventilation	Insulation - Ceiling	sqft roof	New	0.01	45	\$1.28	15%	50%	\$0.57	46.41	52.62	Building Energy Simulation Tool
College	Cooling	Insulation - Ducting	sqft duct	New	0.39	20	\$0.84	15%	50%	\$0.00	682.97	700.77	Building Energy Simulation Tool

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College	Heating	Insulation - Ducting	sqft duct	New	0.00	20	\$0.84	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
College	Ventilation	Insulation - Ducting	sqft duct	New	0.00	20	\$0.84	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
College	Cooling	Building Shell - Cool Roofs	sqft roof	New	0.14	20	\$0.78	45%	50%	\$0.53	66.46	68.70	Building Energy Simulation Tool
College	Heating	Building Shell - Cool Roofs	sqft roof	New	-0.04	20	\$0.78	45%	50%	\$0.53	-6.75	-6.75	Building Energy Simulation Tool
College	Ventilation	Building Shell - Cool Roofs	sqft roof	New	-0.01	20	\$0.78	45%	50%	\$0.53	-2.98	-3.34	Building Energy Simulation Tool
College	Cooling	Insulation - Wall Cavity	sqft wall	New	-0.03	45	\$0.78	15%	50%	\$1.08	-31.64	-32.71	Building Energy Simulation Tool
College	Heating	Insulation - Wall Cavity	sqft wall	New	0.06	45	\$0.78	15%	50%	\$1.08	20.75	20.76	Building Energy Simulation Tool
College	Ventilation	Insulation - Wall Cavity	sqft wall	New	0.01	45	\$0.78	15%	50%	\$1.08	9.17	10.25	Building Energy Simulation Tool
College	Cooling	HVAC - Duct Repair and Sealing	tonCool	New	19.24	18	\$0.57	15%	35%	\$0.01	141.85	146.83	Building Energy Simulation Tool
College	Heating	HVAC - Duct Repair and Sealing	tonCool	New	-11.98	18	\$0.57	15%	35%	\$0.01	-27.56	-27.59	Building Energy Simulation Tool
College	Ventilation	HVAC - Duct Repair and Sealing	tonCool	New	-1.39	18	\$0.57	15%	35%	\$0.01	-12.18	-13.71	Building Energy Simulation Tool
College	Cooling	Windows - High Efficiency Glazing	sqft window	New	7.35	30	\$35.93	66%	66%	\$0.04	0.00	0.00	7th Power Plan
College	Heating	Windows - High Efficiency Glazing	sqft window	New	35.51	30	\$35.93	66%	66%	\$0.04	0.00	0.00	7th Power Plan
College	Ventilation	Windows - High Efficiency Glazing	sqft window	New	2.38	30	\$35.93	66%	66%	\$0.04	0.00	0.00	7th Power Plan
College	Cooling	Chiller - Chilled Water Reset	ChillCtrl	New	13,157.76	10	\$884.85	15%	75%	\$0.01	273.70	294.81	AEG-BEST
College	Cooling	Chiller - Chilled Water Variable-Flow System	HP cool	New	368.80	15	\$332.55	15%	75%	\$0.06	1,358.69	1,445.38	AEG-BEST
College	Cooling	Chiller - Variable Speed Fans	HP fan	New	865.67	15	\$208.36	15%	75%	\$0.02	316.91	337.91	New Jersey TRM
College	Cooling	Water-Cooled Chiller - Condenser Water Reset	ChillCtrl	New	0.00	10	\$884.85	15%	75%	\$0.00	0.00	0.00	AEG-BEST
College	Cooling	HVAC - Economizer	HP cool	New	79.44	10	\$168.42	18%	75%	\$0.19	627.40	676.19	AEG-BEST

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College	Heating	Space Heating - Heat Recovery Ventilator	CFM	New	0.95	14	\$5.08	6%	75%	\$0.45	654.49	668.61	7th Power Plan
College	Ventilation	Ventilation - ECM on VAV Boxes	sqft	New	0.19	18	\$0.25	15%	20%	\$0.06	103.74	116.58	7th Power Plan
College	Ventilation	Ventilation - Variable Speed Control	sqft	New	0.02	15	\$181.39	19%	50%	\$529.45	36.89	45.82	AEG-BEST
College	Ventilation	Ventilation - Demand Controlled	sqft	New	0.01	15	\$0.25	15%	75%	\$1.30	40.31	50.08	7th Power Plan
College	Cooling	Destratification Fans (HVLS)	Strat Fan	New	3,478.54	15	\$7,270.90	15%	25%	\$0.03	180.33	191.92	AEG Research
College	Heating	Destratification Fans (HVLS)	Strat Fan	New	15,054.16	15	\$7,270.90	15%	25%	\$0.03	242.94	242.74	AEG Research
College	Cooling	RTU - Maintenance	tonCool	New	48.53	3	\$35.00	15%	45%	\$0.17	48.45	55.20	AEG Research
College	Cooling	RTU - Advanced Controls	sqft	New	0.10	15	\$0.07	15%	45%	\$0.05	156.08	162.50	7th Power Plan
College	Cooling	RTU - Evaporative Precooler	tonCool	New	93.37	15	\$681.62	15%	75%	\$0.48	1,317.01	1,357.19	AEG Research
College	Cooling	Ductless Mini Split Heat Pump	tonCool	New	209.57	15	\$3,359.26	15%	25%	\$0.41	19.38	21.03	7th Power Plan
College	Heating	Ductless Mini Split Heat Pump	tonCool	New	388.15	15	\$3,359.26	15%	25%	\$0.41	272.95	276.70	7th Power Plan
College	Cooling	Thermostat - WiFi/Interactive	sqft	New	0.45	5	\$0.66	30%	40%	\$0.07	51.15	56.38	7th Power Plan
College	Heating	Thermostat - WiFi/Interactive	sqft	New	1.05	5	\$0.66	30%	40%	\$0.07	37.08	37.05	7th Power Plan
College	Ventilation	Thermostat - WiFi/Interactive	sqft	New	0.12	5	\$0.66	30%	40%	\$0.07	16.37	20.51	7th Power Plan
College	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	New	96.57	10	\$8.35	25%	65%	\$0.00	28.13	44.97	Illinois TRM
College	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	New	100.57	10	\$11.64	25%	65%	\$0.01	14.68	23.43	7th Power Plan
College	Water Heating	Water Heater - High Efficiency Circulation Pump	WHUnits	New	49.13	15	\$36.75	15%	25%	\$0.03	8.70	11.12	Hawaii TRM
College	Water Heating	Water Heater - Pipe Insulation	PipeFeet	New	295.65	15	\$14.88	1%	75%	\$0.00	95.47	142.28	AEG-BEST
College	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	New	65.77	4	\$144.04	25%	65%	\$0.24	7.85	13.49	7th Power Plan
College	Water Heating	Water Heater - Thermostat Setback	WHUnits	New	49.33	2	\$5.00	15%	75%	\$0.02	4.15	7.55	Illinois TRM
College	Water Heating	Water Heater - Solar System	PipeFeet	New	1,020.17	20	\$215.28	1%	30%	\$0.01	133.44	196.74	AEG-BEST

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College	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.35	15	\$0.35	11%	23%	\$0.05	850.01	1,018.66	7th Power Plan
College	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.48	15	\$0.58	11%	23%	\$0.06	1,165.91	1,402.55	7th Power Plan
College	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	New	292.34	15	\$54.41	1%	3%	\$0.01	11.14	14.98	7th Power Plan
College	Interior Lighting	Interior Lighting - Timeclocks and Timers	occ sens	New	0.00	8	\$111.67	7%	15%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
College	Interior Lighting	Interior Lighting - Skylights	1000 sqft	New	0.00	15	\$1,006.35	18%	33%	\$0.00	0.00	0.00	AEG Research
College	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	1000 sqft	New	213.95	16	\$1,807.69	5%	15%	\$0.42	119.70	162.42	7th Power Plan
College	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	New	2,043.07	11	\$30.80	15%	50%	\$0.00	336.25	450.71	Illinois TRM
College	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	ELtg Watts	New	0.33	8	\$0.63	15%	25%	\$0.16	102.90	144.70	7th Power Plan
College	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	New	30.37	8	\$55.10	15%	25%	\$0.15	54.95	77.46	Pacific Gas and Electric Research
College	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	New	36.51	7	\$3,400.00	15%	30%	\$8.21	85.85	125.29	AEG Research
College	Refrigeration	Refrigeration - Anti-Sweat Heater	Fridge Feet	New	7.01	8	\$48.18	4%	25%	\$0.87	1.26	1.53	7th Power Plan
College	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	New	15.33	4	\$10.44	4%	25%	\$0.15	0.99	1.19	Michigan Energy Measures Database
College	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	New	150.95	16	\$165.20	4%	25%	\$0.09	5.29	5.78	7th Power Plan
College	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	New	15.21	15	\$335.85	0%	0%	\$1.81	0.00	0.00	7th Power Plan
College	Refrigeration	Refrigeration - Strip Curtain	Walkin Door	New	11.93	2	\$10.41	4%	25%	\$0.37	0.15	0.17	7th Power Plan
College	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	New	0.24	15	\$45.43	2%	13%	\$15.57	10.34	10.57	Annual Energy Outlook, 2015
College	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	New	4.96	15	\$313.82	2%	13%	\$5.19	17.98	18.41	Annual Energy Outlook, 2015
College	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	New	101.00	10	\$506.05	4%	25%	\$0.54	2.74	3.04	Vermont TRM
College	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	New	4.96	6	\$45.41	0%	0%	\$1.45	0.00	0.00	7th Power Plan

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College	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	New	0.40	8	\$3.72	0%	0%	\$1.18	0.00	0.00	7th Power Plan
College	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	New	84.82	5	\$45.85	0%	0%	\$0.10	0.00	0.00	Illinois TRM
College	Refrigeration	Grocery - ECMs for Display Cases	Fridge Case	New	20.56	16	\$165.20	4%	25%	\$0.63	1.91	1.96	7th Power Plan
College	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	New	1,254.25	5	\$187.94	25%	75%	\$0.03	8.61	8.65	Illinois TRM
College	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	New	1,595.16	18	\$8,526.67	25%	50%	\$0.25	176.78	199.00	7th Power Plan
College	Office Equipment	Office Equipment - Smart Power Strips	Smart Strip	New	30.22	4	\$41.63	10%	50%	\$0.28	42.57	40.70	7th Power Plan
College	Cooling	Lodging - Guest Room Controls	LodgUnit	New	227.92	15	\$260.00	0%	0%	\$0.98	0.00	0.00	AEG-BEST
College	Heating	Lodging - Guest Room Controls	LodgUnit	New	-241.24	15	\$260.00	0%	0%	\$0.98	0.00	0.00	AEG-BEST
College	Office Equipment	Data Center - Best Practice Measures	sqft	New	0.01	5	\$0.00	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
College	Cooling	Data Center - Commercially Available Measures	sqft	New	0.01	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
College	Ventilation	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
College	Interior Lighting	Data Center - Commercially Available Measures	sqft	New	0.03	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
College	Office Equipment	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
College	Cooling	Data Center - Cutting Edge Measures	sqft	New	0.04	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
College	Office Equipment	Data Center - Cutting Edge Measures	sqft	New	0.00	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
College	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	New	1,613.42	18	\$4,092.80	0%	5%	\$0.12	29.57	33.29	7th Power Plan
College	Miscellaneous	Pool Pump - Timer	perBldg	New	452.13	10	\$85.22	15%	75%	\$0.02	38.17	38.67	Ontario Power TRM
College	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	New	3,455.01	6	\$35.93	1%	3%	\$0.00	8.07	8.20	7th Power Plan
College	Cooling	Advanced New Construction Designs	sqft	New	0.84	25	\$4.11	10%	30%	\$0.05	1,863.00	1,900.09	AEG Research

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College	Heating	Advanced New Construction Designs	sqft	New	1.97	25	\$4.11	10%	30%	\$0.05	1,350.48	1,347.85	AEG Research
College	Ventilation	Advanced New Construction Designs	sqft	New	0.23	25	\$4.11	10%	30%	\$0.05	590.58	666.42	AEG Research
College	Water Heating	Advanced New Construction Designs	sqft	New	0.25	25	\$4.11	10%	30%	\$0.05	245.80	298.16	AEG Research
College	Interior Lighting	Advanced New Construction Designs	sqft	New	0.67	25	\$4.11	10%	30%	\$0.05	1,338.37	1,560.24	AEG Research
College	Exterior Lighting	Advanced New Construction Designs	sqft	New	0.18	25	\$4.11	10%	30%	\$0.05	363.51	424.78	AEG Research
College	Cooling	Strategic Energy Management	sqft	New	0.14	3	\$0.18	3%	29%	\$0.02	38.19	42.58	AEG Research
College	Heating	Strategic Energy Management	sqft	New	0.31	3	\$0.18	3%	29%	\$0.02	26.53	26.52	AEG Research
College	Ventilation	Strategic Energy Management	sqft	New	0.04	3	\$0.18	3%	29%	\$0.02	11.73	14.90	AEG Research
College	Water Heating	Strategic Energy Management	sqft	New	0.04	3	\$0.18	3%	29%	\$0.02	4.80	8.51	AEG Research
College	Interior Lighting	Strategic Energy Management	sqft	New	0.11	3	\$0.18	3%	29%	\$0.02	26.83	40.98	AEG Research
College	Exterior Lighting	Strategic Energy Management	sqft	New	0.03	3	\$0.18	3%	29%	\$0.02	7.20	11.03	AEG Research
College	Refrigeration	Strategic Energy Management	sqft	New	0.01	3	\$0.18	3%	29%	\$0.02	1.63	1.73	AEG Research
College	Office Equipment	Strategic Energy Management	sqft	New	0.03	3	\$0.18	3%	29%	\$0.02	9.86	9.53	AEG Research
College	Cooling	Commissioning	sqft	New	0.19	3	\$0.51	10%	46%	\$0.02	73.17	81.47	AEG Research
College	Heating	Commissioning	sqft	New	0.43	3	\$0.51	10%	46%	\$0.02	50.93	51.04	AEG Research
College	Ventilation	Commissioning	sqft	New	0.05	3	\$0.51	10%	46%	\$0.02	22.51	28.66	AEG Research
College	Water Heating	Commissioning	sqft	New	0.02	3	\$0.51	10%	46%	\$0.02	3.07	5.45	AEG Research
College	Interior Lighting	Commissioning	sqft	New	0.12	3	\$0.51	10%	46%	\$0.02	42.91	65.68	AEG Research
College	Exterior Lighting	Commissioning	sqft	New	0.03	3	\$0.51	10%	46%	\$0.02	11.49	17.59	AEG Research
College	Refrigeration	Commissioning	sqft	New	0.01	3	\$0.51	10%	46%	\$0.02	5.22	5.56	AEG Research
College	Cooling	Retrocommissioning	sqft	New	0.19	3	\$0.33	0%	0%	\$0.02	0.00	0.00	AEG Research
College	Heating	Retrocommissioning	sqft	New	0.43	3	\$0.33	0%	0%	\$0.02	0.00	0.00	AEG Research

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College	Ventilation	Retrocommissioning	sqft	New	0.05	3	\$0.33	0%	0%	\$0.02	0.00	0.00	AEG Research
College	Water Heating	Retrocommissioning	sqft	New	0.02	3	\$0.33	0%	0%	\$0.02	0.00	0.00	AEG Research
College	Interior Lighting	Retrocommissioning	sqft	New	0.12	3	\$0.33	0%	0%	\$0.02	0.00	0.00	AEG Research
College	Exterior Lighting	Retrocommissioning	sqft	New	0.03	3	\$0.33	0%	0%	\$0.02	0.00	0.00	AEG Research
College	Refrigeration	Retrocommissioning	sqft	New	0.01	3	\$0.33	0%	0%	\$0.02	0.00	0.00	AEG Research
College	Interior Lighting	Fruit Storage - Lighting Controls	sqft	New	0.08	10	\$0.09	0%	0%	\$0.07	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
College	Refrigeration	Fruit Storage Refrigeration Retrofit	sqft	New	0.04	10	\$1.09	0%	0%	\$2.66	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
College	Refrigeration	Fruit Storage Refrigeration Tuneup	sqft	New	0.01	3	\$0.23	0%	0%	\$5.89	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
College	Refrigeration	Fruit Storage Retrofit - CO2 Scrub	sqft	New	0.02	10	\$3.13	0%	0%	\$15.78	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
College	Refrigeration	Fruit Storage Retrofit - Membrane	sqft	New	0.00	10	\$0.68	0%	0%	\$17.13	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
School	Cooling	Insulation - Ceiling	sqft roof	Existing	0.01	45	\$1.28	15%	35%	\$0.18	59.05	69.40	Building Energy Simulation Tool
School	Heating	Insulation - Ceiling	sqft roof	Existing	0.31	45	\$1.28	15%	35%	\$0.18	326.45	340.00	Building Energy Simulation Tool
School	Ventilation	Insulation - Ceiling	sqft roof	Existing	0.04	45	\$1.28	15%	35%	\$0.18	206.03	256.56	Building Energy Simulation Tool
School	Cooling	Insulation - Ducting	sqft duct	Existing	0.32	20	\$0.84	15%	35%	\$0.00	655.69	741.94	Building Energy Simulation Tool
School	Heating	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.84	15%	35%	\$0.00	0.00	0.00	Building Energy Simulation Tool
School	Ventilation	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.84	15%	35%	\$0.00	0.00	0.00	Building Energy Simulation Tool
School	Cooling	Building Shell - Cool Roofs	sqft roof	Existing	0.26	20	\$0.78	45%	50%	\$0.41	285.36	302.93	Building Energy Simulation Tool
School	Heating	Building Shell - Cool Roofs	sqft roof	Existing	-0.12	20	\$0.78	45%	50%	\$0.41	-32.32	-32.93	Building Energy Simulation Tool
School	Ventilation	Building Shell - Cool Roofs	sqft roof	Existing	-0.02	20	\$0.78	45%	50%	\$0.41	-21.07	-25.17	Building Energy Simulation Tool
School	Cooling	Insulation - Wall Cavity	sqft wall	Existing	-0.24	45	\$0.78	15%	35%	\$0.19	-326.12	-347.30	Building Energy Simulation Tool

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School	Heating	Insulation - Wall Cavity	sqft wall	Existing	0.42	45	\$0.78	15%	35%	\$0.19	136.53	139.01	Building Energy Simulation Tool
School	Ventilation	Insulation - Wall Cavity	sqft wall	Existing	0.06	45	\$0.78	15%	35%	\$0.19	89.02	106.27	Building Energy Simulation Tool
School	Cooling	HVAC - Duct Repair and Sealing	tonCool	Existing	16.15	18	\$0.57	15%	50%	\$0.00	488.53	520.06	Building Energy Simulation Tool
School	Heating	HVAC - Duct Repair and Sealing	tonCool	Existing	-6.61	18	\$0.57	15%	50%	\$0.00	-48.83	-49.87	Building Energy Simulation Tool
School	Ventilation	HVAC - Duct Repair and Sealing	tonCool	Existing	-0.88	18	\$0.57	15%	50%	\$0.00	-31.84	-38.13	Building Energy Simulation Tool
School	Cooling	Windows - High Efficiency Glazing	sqft window	Existing	5.58	30	\$35.93	48%	48%	\$0.07	0.00	0.00	7th Power Plan
School	Heating	Windows - High Efficiency Glazing	sqft window	Existing	22.51	30	\$35.93	48%	48%	\$0.07	0.00	0.00	7th Power Plan
School	Ventilation	Windows - High Efficiency Glazing	sqft window	Existing	1.71	30	\$35.93	48%	48%	\$0.07	0.00	0.00	7th Power Plan
School	Cooling	Chiller - Chilled Water Reset	ChillCtrl	Existing	10,038.91	10	\$884.85	15%	75%	\$0.01	974.04	1,066.38	AEG-BEST
School	Cooling	Chiller - Chilled Water Variable-Flow System	HP cool	Existing	272.44	15	\$332.55	15%	75%	\$0.09	3,610.20	4,134.68	AEG-BEST
School	Cooling	Chiller - Variable Speed Fans	HP fan	Existing	655.65	15	\$208.36	15%	75%	\$0.02	881.24	974.71	New Jersey TRM
School	Cooling	Water-Cooled Chiller - Condenser Water Reset	ChillCtrl	Existing	0.00	10	\$884.85	15%	75%	\$0.00	0.00	0.00	AEG-BEST
School	Cooling	HVAC - Economizer	HP cool	Existing	61.53	10	\$168.42	18%	75%	\$0.25	2,290.50	2,777.89	AEG-BEST
School	Heating	Space Heating - Heat Recovery Ventilator	CFM	Existing	0.71	14	\$5.08	3%	75%	\$0.60	1,358.21	1,461.16	7th Power Plan
School	Ventilation	Ventilation - ECM on VAV Boxes	sqft	Existing	0.14	18	\$0.25	15%	20%	\$0.11	177.84	215.54	7th Power Plan
School	Ventilation	Ventilation - Variable Speed Control	sqft	Existing	0.01	15	\$181.39	13%	50%	\$928.16	125.28	171.65	AEG-BEST
School	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.01	15	\$0.25	15%	75%	\$2.27	114.72	156.43	7th Power Plan
School	Cooling	Destratification Fans (HVLS)	Strat Fan	Existing	2,558.12	15	\$7,270.90	15%	15%	\$0.05	0.00	0.00	AEG Research
School	Heating	Destratification Fans (HVLS)	Strat Fan	Existing	9,473.50	15	\$7,270.90	15%	15%	\$0.05	0.00	0.00	AEG Research
School	Cooling	RTU - Maintenance	tonCool	Existing	22.22	3	\$35.00	15%	45%	\$0.37	313.02	401.08	AEG Research
School	Cooling	RTU - Advanced Controls	sqft	Existing	0.10	15	\$0.07	15%	45%	\$0.05	341.30	372.39	7th Power Plan

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School	Cooling	RTU - Evaporative Precooler	tonCool	Existing	44.15	15	\$681.62	15%	75%	\$1.02	1,091.93	1,227.85	AEG Research
School	Cooling	Ductless Mini Split Heat Pump	tonCool	Existing	102.40	15	\$3,359.26	15%	25%	\$0.65	28.88	37.00	7th Power Plan
School	Heating	Ductless Mini Split Heat Pump	tonCool	Existing	273.78	15	\$3,359.26	15%	25%	\$0.65	289.20	310.12	7th Power Plan
School	Cooling	Thermostat - WiFi/Interactive	sqft	Existing	0.33	5	\$0.66	30%	40%	\$0.10	680.78	791.22	7th Power Plan
School	Heating	Thermostat - WiFi/Interactive	sqft	Existing	0.67	5	\$0.66	30%	40%	\$0.10	349.85	361.34	7th Power Plan
School	Ventilation	Thermostat - WiFi/Interactive	sqft	Existing	0.09	5	\$0.66	30%	40%	\$0.10	225.38	275.01	7th Power Plan
School	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	Existing	68.69	10	\$8.35	25%	65%	\$0.01	92.30	165.07	Illinois TRM
School	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	Existing	70.98	10	\$11.64	25%	65%	\$0.01	47.45	85.80	7th Power Plan
School	Water Heating	Water Heater - High Efficiency Circulation Pump	WHUnits	Existing	57.35	15	\$36.75	15%	25%	\$0.03	12.64	19.88	Hawaii TRM
School	Water Heating	Water Heater - Pipe Insulation	PipeFeet	Existing	212.23	15	\$14.88	16%	75%	\$0.00	175.23	301.08	AEG-BEST
School	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	Existing	44.41	4	\$144.04	25%	65%	\$0.41	56.53	106.88	7th Power Plan
School	Water Heating	Water Heater - Thermostat Setback	WHUnits	Existing	58.19	2	\$5.00	15%	75%	\$0.02	84.23	155.46	Illinois TRM
School	Water Heating	Water Heater - Solar System	PipeFeet	Existing	716.97	20	\$215.28	1%	30%	\$0.01	284.81	506.95	AEG-BEST
School	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.24	15	\$0.35	3%	23%	\$0.09	1,454.41	1,906.36	7th Power Plan
School	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.34	15	\$0.58	3%	23%	\$0.10	1,959.24	2,625.68	7th Power Plan
School	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	Existing	212.09	15	\$54.41	1%	3%	\$0.02	42.06	65.14	7th Power Plan
School	Interior Lighting	Interior Lighting - Timeclocks and Timers	occ sens	Existing	0.00	8	\$111.67	7%	15%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
School	Interior Lighting	Interior Lighting - Skylights	1000 sqft	Existing	0.00	15	\$1,006.35	15%	30%	\$0.00	0.00	0.00	AEG Research
School	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	1000 sqft	Existing	172.82	16	\$1,807.69	5%	15%	\$0.58	397.49	662.41	7th Power Plan

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School	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	Existing	1,682.89	11	\$30.80	15%	50%	\$0.00	1,454.14	2,155.43	Illinois TRM
School	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	ELtg Watts	Existing	0.33	8	\$0.63	15%	25%	\$0.17	547.36	897.74	7th Power Plan
School	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	Existing	31.48	8	\$55.10	15%	25%	\$0.16	298.65	482.30	Pacific Gas and Electric Research
School	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	Existing	37.28	7	\$3,400.00	15%	30%	\$8.90	519.11	877.04	AEG Research
School	Refrigeration	Refrigeration - Anti-Sweat Heater	Fridge Feet	Existing	10.51	8	\$48.18	4%	25%	\$0.55	22.13	33.70	7th Power Plan
School	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	Existing	21.61	4	\$10.44	4%	25%	\$0.10	38.82	54.40	Michigan Energy Measures Database
School	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	Existing	207.55	16	\$165.20	4%	25%	\$0.06	56.21	76.04	7th Power Plan
School	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	Existing	19.22	15	\$335.85	0%	0%	\$1.35	0.00	0.00	7th Power Plan
School	Refrigeration	Refrigeration - Strip Curtain	Walkin Door	Existing	15.61	2	\$10.41	4%	25%	\$0.27	14.81	19.35	7th Power Plan
School	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	Existing	0.30	15	\$45.43	2%	13%	\$11.59	104.60	128.03	Annual Energy Outlook, 2015
School	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	Existing	6.26	15	\$313.82	2%	13%	\$3.86	185.25	223.45	Annual Energy Outlook, 2015
School	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	Existing	137.82	10	\$506.05	4%	25%	\$0.37	37.22	50.74	Vermont TRM
School	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	Existing	6.26	6	\$45.41	0%	0%	\$1.08	0.00	0.00	7th Power Plan
School	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	Existing	0.50	8	\$3.72	0%	0%	\$0.88	0.00	0.00	7th Power Plan
School	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	Existing	105.84	5	\$45.85	0%	0%	\$0.08	0.00	0.00	Illinois TRM
School	Refrigeration	Grocery - ECMs for Display Cases	Fridge Case	Existing	26.07	16	\$165.20	4%	25%	\$0.47	19.30	23.22	7th Power Plan
School	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	Existing	1,265.84	5	\$187.94	25%	75%	\$0.03	242.60	252.13	Illinois TRM
School	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	Existing	1,163.58	18	\$8,526.67	25%	50%	\$0.44	297.18	365.78	7th Power Plan
School	Office Equipment	Office Equipment - Smart Power Strips	Smart Strip	Existing	19.08	4	\$41.63	10%	50%	\$0.44	480.59	456.84	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
School	Cooling	Lodging - Guest Room Controls	LodgUnit	Existing	99.35	15	\$260.00	0%	0%	\$10.00	0.00	0.00	AEG-BEST
School	Heating	Lodging - Guest Room Controls	LodgUnit	Existing	-159.26	15	\$260.00	0%	0%	\$10.00	0.00	0.00	AEG-BEST
School	Office Equipment	Data Center - Best Practice Measures	sqft	Existing	0.01	5	\$0.00	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
School	Cooling	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
School	Ventilation	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
School	Interior Lighting	Data Center - Commercially Available Measures	sqft	Existing	0.02	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
School	Office Equipment	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
School	Cooling	Data Center - Cutting Edge Measures	sqft	Existing	0.03	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
School	Office Equipment	Data Center - Cutting Edge Measures	sqft	Existing	0.00	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
School	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	Existing	1,181.93	18	\$4,092.80	0%	0%	\$0.21	0.00	0.00	7th Power Plan
School	Miscellaneous	Pool Pump - Timer	perBldg	Existing	496.00	10	\$85.22	15%	75%	\$0.02	15.94	15.99	Ontario Power TRM
School	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	Existing	2,281.96	6	\$35.93	1%	3%	\$0.00	91.35	91.42	7th Power Plan
School	Cooling	Advanced New Construction Designs	sqft	Existing	0.47	25	\$4.11	0%	0%	\$0.08	0.00	0.00	AEG Research
School	Heating	Advanced New Construction Designs	sqft	Existing	1.13	25	\$4.11	0%	0%	\$0.08	0.00	0.00	AEG Research
School	Ventilation	Advanced New Construction Designs	sqft	Existing	0.15	25	\$4.11	0%	0%	\$0.08	0.00	0.00	AEG Research
School	Water Heating	Advanced New Construction Designs	sqft	Existing	0.17	25	\$4.11	0%	0%	\$0.08	0.00	0.00	AEG Research
School	Interior Lighting	Advanced New Construction Designs	sqft	Existing	0.46	25	\$4.11	0%	0%	\$0.08	0.00	0.00	AEG Research
School	Exterior Lighting	Advanced New Construction Designs	sqft	Existing	0.14	25	\$4.11	0%	0%	\$0.08	0.00	0.00	AEG Research
School	Cooling	Strategic Energy Management	sqft	Existing	0.11	3	\$0.09	2%	22%	\$0.01	500.54	569.60	AEG Research

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
School	Heating	Strategic Energy Management	sqft	Existing	0.19	3	\$0.09	2%	22%	\$0.01	222.87	233.08	AEG Research
School	Ventilation	Strategic Energy Management	sqft	Existing	0.03	3	\$0.09	2%	22%	\$0.01	145.30	187.80	AEG Research
School	Water Heating	Strategic Energy Management	sqft	Existing	0.03	3	\$0.09	2%	22%	\$0.01	42.67	80.20	AEG Research
School	Interior Lighting	Strategic Energy Management	sqft	Existing	0.08	3	\$0.09	2%	22%	\$0.01	373.06	574.27	AEG Research
School	Exterior Lighting	Strategic Energy Management	sqft	Existing	0.02	3	\$0.09	2%	22%	\$0.01	111.93	179.74	AEG Research
School	Refrigeration	Strategic Energy Management	sqft	Existing	0.01	3	\$0.09	2%	22%	\$0.01	75.10	88.91	AEG Research
School	Office Equipment	Strategic Energy Management	sqft	Existing	0.02	3	\$0.09	2%	22%	\$0.01	136.63	129.16	AEG Research
School	Cooling	Commissioning	sqft	Existing	0.15	3	\$0.24	0%	0%	\$0.01	0.00	0.00	AEG Research
School	Heating	Commissioning	sqft	Existing	0.28	3	\$0.24	0%	0%	\$0.01	0.00	0.00	AEG Research
School	Ventilation	Commissioning	sqft	Existing	0.04	3	\$0.24	0%	0%	\$0.01	0.00	0.00	AEG Research
School	Water Heating	Commissioning	sqft	Existing	0.01	3	\$0.24	0%	0%	\$0.01	0.00	0.00	AEG Research
School	Interior Lighting	Commissioning	sqft	Existing	0.09	3	\$0.24	0%	0%	\$0.01	0.00	0.00	AEG Research
School	Exterior Lighting	Commissioning	sqft	Existing	0.03	3	\$0.24	0%	0%	\$0.01	0.00	0.00	AEG Research
School	Refrigeration	Commissioning	sqft	Existing	0.03	3	\$0.24	0%	0%	\$0.01	0.00	0.00	AEG Research
School	Cooling	Retrocommissioning	sqft	Existing	0.15	3	\$0.15	10%	47%	\$0.01	1,314.47	1,474.46	AEG Research
School	Heating	Retrocommissioning	sqft	Existing	0.28	3	\$0.15	10%	47%	\$0.01	585.27	603.41	AEG Research
School	Ventilation	Retrocommissioning	sqft	Existing	0.04	3	\$0.15	10%	47%	\$0.01	381.57	486.11	AEG Research
School	Water Heating	Retrocommissioning	sqft	Existing	0.01	3	\$0.15	10%	47%	\$0.01	36.73	68.71	AEG Research
School	Interior Lighting	Retrocommissioning	sqft	Existing	0.09	3	\$0.15	10%	47%	\$0.01	813.01	1,236.26	AEG Research
School	Exterior Lighting	Retrocommissioning	sqft	Existing	0.03	3	\$0.15	10%	47%	\$0.01	243.93	386.96	AEG Research
School	Refrigeration	Retrocommissioning	sqft	Existing	0.03	3	\$0.15	10%	47%	\$0.01	334.34	386.21	AEG Research
School	Interior Lighting	Fruit Storage - Lighting Controls	sqft	Existing	0.06	10	\$0.09	0%	0%	\$0.11	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
School	Refrigeration	Fruit Storage Refrigeration Retrofit	sqft	Existing	0.10	10	\$1.09	0%	0%	\$1.12	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
School	Refrigeration	Fruit Storage Refrigeration Tuneup	sqft	Existing	0.03	3	\$0.23	0%	0%	\$2.49	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
School	Refrigeration	Fruit Storage Retrofit - CO2 Scrub	sqft	Existing	0.05	10	\$3.13	0%	0%	\$6.66	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
School	Refrigeration	Fruit Storage Retrofit - Membrane	sqft	Existing	0.01	10	\$0.68	0%	0%	\$7.23	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
School	Cooling	Insulation - Ceiling	sqft roof	New	0.00	45	\$1.28	15%	50%	\$0.95	0.00	0.00	Building Energy Simulation Tool
School	Heating	Insulation - Ceiling	sqft roof	New	0.06	45	\$1.28	15%	50%	\$0.95	61.18	61.56	Building Energy Simulation Tool
School	Ventilation	Insulation - Ceiling	sqft roof	New	0.01	45	\$1.28	15%	50%	\$0.95	37.60	42.51	Building Energy Simulation Tool
School	Cooling	Insulation - Ducting	sqft duct	New	0.23	20	\$0.84	15%	50%	\$0.00	501.85	515.22	Building Energy Simulation Tool
School	Heating	Insulation - Ducting	sqft duct	New	0.00	20	\$0.84	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
School	Ventilation	Insulation - Ducting	sqft duct	New	0.00	20	\$0.84	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
School	Cooling	Building Shell - Cool Roofs	sqft roof	New	0.08	20	\$0.78	45%	50%	\$0.94	48.68	50.29	Building Energy Simulation Tool
School	Heating	Building Shell - Cool Roofs	sqft roof	New	-0.03	20	\$0.78	45%	50%	\$0.94	-3.91	-3.93	Building Energy Simulation Tool
School	Ventilation	Building Shell - Cool Roofs	sqft roof	New	0.00	20	\$0.78	45%	50%	\$0.94	-2.39	-2.68	Building Energy Simulation Tool
School	Cooling	Insulation - Wall Cavity	sqft wall	New	-0.02	45	\$0.78	15%	50%	\$1.74	-23.18	-23.95	Building Energy Simulation Tool
School	Heating	Insulation - Wall Cavity	sqft wall	New	0.04	45	\$0.78	15%	50%	\$1.74	12.03	12.08	Building Energy Simulation Tool
School	Ventilation	Insulation - Wall Cavity	sqft wall	New	0.00	45	\$0.78	15%	50%	\$1.74	7.36	8.23	Building Energy Simulation Tool
School	Cooling	HVAC - Duct Repair and Sealing	tonCool	New	11.17	18	\$0.57	15%	35%	\$0.01	103.96	107.53	Building Energy Simulation Tool
School	Heating	HVAC - Duct Repair and Sealing	tonCool	New	-7.15	18	\$0.57	15%	35%	\$0.01	-15.99	-16.07	Building Energy Simulation Tool
School	Ventilation	HVAC - Duct Repair and Sealing	tonCool	New	-0.79	18	\$0.57	15%	35%	\$0.01	-9.78	-11.00	Building Energy Simulation Tool

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
School	Cooling	Windows - High Efficiency Glazing	sqft window	New	4.29	30	\$35.93	66%	66%	\$0.07	0.00	0.00	7th Power Plan
School	Heating	Windows - High Efficiency Glazing	sqft window	New	21.36	30	\$35.93	66%	66%	\$0.07	0.00	0.00	7th Power Plan
School	Ventilation	Windows - High Efficiency Glazing	sqft window	New	1.36	30	\$35.93	66%	66%	\$0.07	0.00	0.00	7th Power Plan
School	Cooling	Chiller - Chilled Water Reset	ChillCtrl	New	7,863.44	10	\$884.85	15%	75%	\$0.01	185.00	198.97	AEG-BEST
School	Cooling	Chiller - Chilled Water Variable-Flow System	HP cool	New	221.12	15	\$332.55	15%	75%	\$0.11	920.71	979.97	AEG-BEST
School	Cooling	Chiller - Variable Speed Fans	HP fan	New	517.61	15	\$208.36	15%	75%	\$0.03	214.52	228.45	New Jersey TRM
School	Cooling	Water-Cooled Chiller - Condenser Water Reset	ChillCtrl	New	0.00	10	\$884.85	15%	75%	\$0.00	0.00	0.00	AEG-BEST
School	Cooling	HVAC - Economizer	HP cool	New	47.44	10	\$168.42	18%	75%	\$0.32	469.50	506.29	AEG-BEST
School	Heating	Space Heating - Heat Recovery Ventilator	CFM	New	0.67	14	\$5.08	6%	75%	\$0.63	383.12	391.87	7th Power Plan
School	Ventilation	Ventilation - ECM on VAV Boxes	sqft	New	0.11	18	\$0.25	15%	20%	\$0.11	83.30	93.62	7th Power Plan
School	Ventilation	Ventilation - Variable Speed Control	sqft	New	0.01	15	\$181.39	19%	50%	\$926.49	29.76	36.73	AEG-BEST
School	Ventilation	Ventilation - Demand Controlled	sqft	New	0.01	15	\$0.25	15%	75%	\$2.27	32.52	40.15	7th Power Plan
School	Cooling	Destratification Fans (HVLS)	Strat Fan	New	2,018.24	15	\$7,270.90	15%	15%	\$0.05	0.00	0.00	AEG Research
School	Heating	Destratification Fans (HVLS)	Strat Fan	New	8,991.03	15	\$7,270.90	15%	15%	\$0.05	0.00	0.00	AEG Research
School	Cooling	RTU - Maintenance	tonCool	New	29.16	3	\$35.00	15%	45%	\$0.29	34.30	38.97	AEG Research
School	Cooling	RTU - Advanced Controls	sqft	New	0.12	15	\$0.07	15%	45%	\$0.04	222.62	231.34	7th Power Plan
School	Cooling	RTU - Evaporative Precooler	tonCool	New	56.35	15	\$681.62	15%	75%	\$0.80	948.38	975.63	AEG Research
School	Cooling	Ductless Mini Split Heat Pump	tonCool	New	126.54	15	\$3,359.26	15%	25%	\$0.61	14.34	15.48	7th Power Plan
School	Heating	Ductless Mini Split Heat Pump	tonCool	New	283.22	15	\$3,359.26	15%	25%	\$0.61	108.61	110.31	7th Power Plan
School	Cooling	Thermostat - WiFi/Interactive	sqft	New	0.26	5	\$0.66	30%	40%	\$0.11	37.40	41.19	7th Power Plan
School	Heating	Thermostat - WiFi/Interactive	sqft	New	0.63	5	\$0.66	30%	40%	\$0.11	21.53	21.67	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
School	Ventilation	Thermostat - WiFi/Interactive	sqft	New	0.07	5	\$0.66	30%	40%	\$0.11	13.09	16.40	7th Power Plan
School	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	New	56.29	10	\$8.35	25%	65%	\$0.01	17.83	28.48	Illinois TRM
School	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	New	58.63	10	\$11.64	25%	65%	\$0.01	9.30	14.84	7th Power Plan
School	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	New	49.06	15	\$36.75	15%	25%	\$0.03	5.56	7.09	Hawaii TRM
School	Water Heating	Water Heater - Pipe Insulation	PipeFeet	New	172.33	15	\$14.88	1%	75%	\$0.00	60.59	90.24	AEG-BEST
School	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	New	38.36	4	\$144.04	25%	65%	\$0.41	4.97	8.54	7th Power Plan
School	Water Heating	Water Heater - Thermostat Setback	WHunits	New	49.27	2	\$5.00	15%	75%	\$0.02	2.62	4.77	Illinois TRM
School	Water Heating	Water Heater - Solar System	PipeFeet	New	594.68	20	\$215.28	1%	30%	\$0.01	84.71	124.81	AEG-BEST
School	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.23	15	\$0.35	11%	23%	\$0.08	774.03	924.83	7th Power Plan
School	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.31	15	\$0.58	11%	23%	\$0.10	1,063.66	1,277.37	7th Power Plan
School	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	New	191.93	15	\$54.41	1%	3%	\$0.02	10.21	13.76	7th Power Plan
School	Interior Lighting	Interior Lighting - Timeclocks and Timers	occ sens	New	0.00	8	\$111.67	7%	15%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
School	Interior Lighting	Interior Lighting - Skylights	1000 sqft	New	0.00	15	\$1,006.35	18%	33%	\$0.00	0.00	0.00	AEG Research
School	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	1000 sqft	New	146.28	16	\$1,807.69	5%	15%	\$0.62	115.03	154.85	7th Power Plan
School	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	New	1,390.17	11	\$30.80	15%	50%	\$0.00	320.04	428.19	Illinois TRM
School	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	ELtg Watts	New	0.29	8	\$0.63	15%	25%	\$0.18	105.25	149.60	7th Power Plan
School	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fxt	New	27.59	8	\$55.10	15%	25%	\$0.16	56.20	80.08	Pacific Gas and Electric Research
School	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fxt	New	33.32	7	\$3,400.00	15%	30%	\$9.00	88.49	129.50	AEG Research
School	Refrigeration	Refrigeration - Anti-Sweat Heater	Fridge Feet	New	8.63	8	\$48.18	4%	25%	\$0.71	5.37	6.48	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
School	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	New	18.88	4	\$10.44	4%	25%	\$0.12	4.19	5.04	Michigan Energy Measures Database
School	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	New	185.96	16	\$165.20	4%	25%	\$0.07	22.55	24.59	7th Power Plan
School	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	New	18.75	15	\$335.85	0%	0%	\$1.47	0.00	0.00	7th Power Plan
School	Refrigeration	Refrigeration - Strip Curtain	Walkin Door	New	14.70	2	\$10.41	4%	25%	\$0.30	0.62	0.73	7th Power Plan
School	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	New	0.29	15	\$45.43	2%	13%	\$12.64	44.04	45.03	Annual Energy Outlook, 2015
School	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	New	6.11	15	\$313.82	2%	13%	\$4.21	76.59	78.39	Annual Energy Outlook, 2015
School	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	New	124.42	10	\$506.05	4%	25%	\$0.44	11.66	12.93	Vermont TRM
School	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	New	6.11	6	\$45.41	0%	0%	\$1.18	0.00	0.00	7th Power Plan
School	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	New	0.49	8	\$3.72	0%	0%	\$0.95	0.00	0.00	7th Power Plan
School	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	New	104.53	5	\$45.85	0%	0%	\$0.08	0.00	0.00	Illinois TRM
School	Refrigeration	Grocery - ECMs for Display Cases	Fridge Case	New	25.33	16	\$165.20	4%	25%	\$0.52	8.13	8.35	7th Power Plan
School	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	New	1,254.25	5	\$187.94	25%	75%	\$0.03	36.62	36.75	Illinois TRM
School	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	New	911.91	18	\$8,526.67	25%	50%	\$0.44	142.16	159.97	7th Power Plan
School	Office Equipment	Office Equipment - Smart Power Strips	Smart Strip	New	22.94	4	\$41.63	10%	50%	\$0.37	45.40	42.92	7th Power Plan
School	Cooling	Lodging - Guest Room Controls	LodgUnit	New	122.78	15	\$260.00	0%	0%	\$10.00	0.00	0.00	AEG-BEST
School	Heating	Lodging - Guest Room Controls	LodgUnit	New	-165.28	15	\$260.00	0%	0%	\$10.00	0.00	0.00	AEG-BEST
School	Office Equipment	Data Center - Best Practice Measures	sqft	New	0.01	5	\$0.00	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
School	Cooling	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
School	Ventilation	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx

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School	Interior Lighting	Data Center - Commercially Available Measures	sqft	New	0.02	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
School	Office Equipment	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
School	Cooling	Data Center - Cutting Edge Measures	sqft	New	0.02	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
School	Office Equipment	Data Center - Cutting Edge Measures	sqft	New	0.00	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
School	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	New	921.41	18	\$4,092.80	0%	0%	\$0.21	0.00	0.00	7th Power Plan
School	Miscellaneous	Pool Pump - Timer	perBldg	New	496.38	10	\$85.22	15%	75%	\$0.02	3.90	3.91	Ontario Power TRM
School	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	New	2,280.10	6	\$35.93	1%	3%	\$0.00	7.47	7.48	7th Power Plan
School	Cooling	Advanced New Construction Designs	sqft	New	0.49	25	\$4.11	10%	25%	\$0.08	1,026.68	1,047.95	AEG Research
School	Heating	Advanced New Construction Designs	sqft	New	1.18	25	\$4.11	10%	25%	\$0.08	590.83	592.74	AEG Research
School	Ventilation	Advanced New Construction Designs	sqft	New	0.13	25	\$4.11	10%	25%	\$0.08	356.03	401.66	AEG Research
School	Water Heating	Advanced New Construction Designs	sqft	New	0.15	25	\$4.11	10%	25%	\$0.08	117.56	142.48	AEG Research
School	Interior Lighting	Advanced New Construction Designs	sqft	New	0.44	25	\$4.11	10%	25%	\$0.08	925.55	1,078.36	AEG Research
School	Exterior Lighting	Advanced New Construction Designs	sqft	New	0.13	25	\$4.11	10%	25%	\$0.08	280.61	332.31	AEG Research
School	Cooling	Strategic Energy Management	sqft	New	0.08	3	\$0.07	2%	22%	\$0.01	21.41	23.68	AEG Research
School	Heating	Strategic Energy Management	sqft	New	0.18	3	\$0.07	2%	22%	\$0.01	11.75	11.85	AEG Research
School	Ventilation	Strategic Energy Management	sqft	New	0.02	3	\$0.07	2%	22%	\$0.01	7.19	9.14	AEG Research
School	Water Heating	Strategic Energy Management	sqft	New	0.02	3	\$0.07	2%	22%	\$0.01	2.34	4.14	AEG Research
School	Interior Lighting	Strategic Energy Management	sqft	New	0.07	3	\$0.07	2%	22%	\$0.01	19.24	29.15	AEG Research
School	Exterior Lighting	Strategic Energy Management	sqft	New	0.02	3	\$0.07	2%	22%	\$0.01	5.65	8.70	AEG Research

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School	Refrigeration	Strategic Energy Management	sqft	New	0.02	3	\$0.07	2%	22%	\$0.01	5.33	5.65	AEG Research
School	Office Equipment	Strategic Energy Management	sqft	New	0.03	3	\$0.07	2%	22%	\$0.01	8.08	7.72	AEG Research
School	Cooling	Commissioning	sqft	New	0.11	3	\$0.19	10%	47%	\$0.01	54.90	60.90	AEG Research
School	Heating	Commissioning	sqft	New	0.26	3	\$0.19	10%	47%	\$0.01	30.14	30.48	AEG Research
School	Ventilation	Commissioning	sqft	New	0.03	3	\$0.19	10%	47%	\$0.01	18.43	23.49	AEG Research
School	Water Heating	Commissioning	sqft	New	0.01	3	\$0.19	10%	47%	\$0.01	2.00	3.54	AEG Research
School	Interior Lighting	Commissioning	sqft	New	0.08	3	\$0.19	10%	47%	\$0.01	41.11	62.42	AEG Research
School	Exterior Lighting	Commissioning	sqft	New	0.02	3	\$0.19	10%	47%	\$0.01	12.08	18.63	AEG Research
School	Refrigeration	Commissioning	sqft	New	0.04	3	\$0.19	10%	47%	\$0.01	22.80	24.28	AEG Research
School	Cooling	Retrocommissioning	sqft	New	0.11	3	\$0.12	0%	0%	\$0.01	0.00	0.00	AEG Research
School	Heating	Retrocommissioning	sqft	New	0.25	3	\$0.12	0%	0%	\$0.01	0.00	0.00	AEG Research
School	Ventilation	Retrocommissioning	sqft	New	0.03	3	\$0.12	0%	0%	\$0.01	0.00	0.00	AEG Research
School	Water Heating	Retrocommissioning	sqft	New	0.01	3	\$0.12	0%	0%	\$0.01	0.00	0.00	AEG Research
School	Interior Lighting	Retrocommissioning	sqft	New	0.08	3	\$0.12	0%	0%	\$0.01	0.00	0.00	AEG Research
School	Exterior Lighting	Retrocommissioning	sqft	New	0.02	3	\$0.12	0%	0%	\$0.01	0.00	0.00	AEG Research
School	Refrigeration	Retrocommissioning	sqft	New	0.04	3	\$0.12	0%	0%	\$0.01	0.00	0.00	AEG Research
School	Interior Lighting	Fruit Storage - Lighting Controls	sqft	New	0.05	10	\$0.09	0%	0%	\$0.11	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
School	Refrigeration	Fruit Storage Refrigeration Retrofit	sqft	New	0.13	10	\$1.09	0%	0%	\$0.87	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
School	Refrigeration	Fruit Storage Refrigeration Tuneup	sqft	New	0.03	3	\$0.23	0%	0%	\$1.94	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
School	Refrigeration	Fruit Storage Retrofit - CO2 Scrub	sqft	New	0.06	10	\$3.13	0%	0%	\$5.19	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
School	Refrigeration	Fruit Storage Retrofit - Membrane	sqft	New	0.01	10	\$0.68	0%	0%	\$5.63	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Lodging	Cooling	Insulation - Ceiling	sqft roof	Existing	0.00	45	\$1.28	15%	35%	\$0.28	0.00	0.00	Building Energy Simulation Tool

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Lodging	Heating	Insulation - Ceiling	sqft roof	Existing	0.16	45	\$1.28	15%	35%	\$0.28	353.55	368.76	Building Energy Simulation Tool
Lodging	Ventilation	Insulation - Ceiling	sqft roof	Existing	0.07	45	\$1.28	15%	35%	\$0.28	190.93	216.46	Building Energy Simulation Tool
Lodging	Cooling	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.84	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Lodging	Heating	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.84	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Lodging	Ventilation	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.84	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Lodging	Cooling	Building Shell - Cool Roofs	sqft roof	Existing	0.34	20	\$0.78	45%	50%	\$0.29	216.88	231.19	Building Energy Simulation Tool
Lodging	Heating	Building Shell - Cool Roofs	sqft roof	Existing	-0.11	20	\$0.78	45%	50%	\$0.29	-65.94	-66.13	Building Energy Simulation Tool
Lodging	Ventilation	Building Shell - Cool Roofs	sqft roof	Existing	-0.05	20	\$0.78	45%	50%	\$0.29	-34.69	-37.81	Building Energy Simulation Tool
Lodging	Cooling	Insulation - Wall Cavity	sqft wall	Existing	-0.01	45	\$0.78	15%	35%	\$0.39	-7.01	-7.60	Building Energy Simulation Tool
Lodging	Heating	Insulation - Wall Cavity	sqft wall	Existing	0.08	45	\$0.78	15%	35%	\$0.39	74.67	73.83	Building Energy Simulation Tool
Lodging	Ventilation	Insulation - Wall Cavity	sqft wall	Existing	0.03	45	\$0.78	15%	35%	\$0.39	38.04	41.41	Building Energy Simulation Tool
Lodging	Cooling	HVAC - Duct Repair and Sealing	tonCool	Existing	0.00	18	\$0.57	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Lodging	Heating	HVAC - Duct Repair and Sealing	tonCool	Existing	0.00	18	\$0.57	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Lodging	Ventilation	HVAC - Duct Repair and Sealing	tonCool	Existing	0.00	18	\$0.57	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Lodging	Cooling	Windows - High Efficiency Glazing	sqft window	Existing	3.64	30	\$35.93	48%	48%	\$0.19	0.00	0.00	7th Power Plan
Lodging	Heating	Windows - High Efficiency Glazing	sqft window	Existing	5.31	30	\$35.93	48%	48%	\$0.19	0.00	0.00	7th Power Plan
Lodging	Ventilation	Windows - High Efficiency Glazing	sqft window	Existing	1.29	30	\$35.93	48%	48%	\$0.19	0.00	0.00	7th Power Plan
Lodging	Cooling	Chiller - Chilled Water Reset	ChillCtrl	Existing	6,809.81	10	\$884.85	15%	75%	\$0.01	107.54	120.89	AEG-BEST
Lodging	Cooling	Chiller - Chilled Water Variable-Flow System	HP cool	Existing	135.49	15	\$332.55	15%	75%	\$0.18	292.11	344.49	AEG-BEST

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Lodging	Cooling	Chiller - Variable Speed Fans	HP fan	Existing	343.21	15	\$208.36	15%	75%	\$0.04	74.60	86.12	New Jersey TRM
Lodging	Cooling	Water-Cooled Chiller - Condenser Water Reset	ChillCtrl	Existing	10,832.27	10	\$884.85	15%	75%	\$0.01	133.48	151.02	AEG-BEST
Lodging	Cooling	HVAC - Economizer	HP cool	Existing	92.17	10	\$168.42	18%	75%	\$0.17	679.85	790.37	AEG-BEST
Lodging	Heating	Space Heating - Heat Recovery Ventilator	CFM	Existing	0.84	14	\$5.08	3%	75%	\$0.51	1,478.19	1,527.50	7th Power Plan
Lodging	Ventilation	Ventilation - ECM on VAV Boxes	sqft	Existing	0.21	18	\$0.25	15%	20%	\$0.08	155.46	171.82	7th Power Plan
Lodging	Ventilation	Ventilation - Variable Speed Control	sqft	Existing	0.05	15	\$181.39	13%	50%	\$245.29	297.45	360.98	AEG-BEST
Lodging	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.01	15	\$0.25	15%	75%	\$1.65	99.11	119.75	7th Power Plan
Lodging	Cooling	Destratification Fans (HVLS)	Strat Fan	Existing	3,457.83	15	\$7,270.90	15%	30%	\$0.07	602.12	702.41	AEG Research
Lodging	Heating	Destratification Fans (HVLS)	Strat Fan	Existing	4,823.24	15	\$7,270.90	15%	30%	\$0.07	771.78	775.73	AEG Research
Lodging	Cooling	RTU - Maintenance	tonCool	Existing	54.88	3	\$35.00	15%	45%	\$0.16	137.76	158.59	AEG Research
Lodging	Cooling	RTU - Advanced Controls	sqft	Existing	0.16	15	\$0.07	15%	45%	\$0.03	138.06	147.11	7th Power Plan
Lodging	Cooling	RTU - Evaporative Precooler	tonCool	Existing	106.44	15	\$681.62	15%	75%	\$0.45	473.39	510.25	AEG Research
Lodging	Cooling	Ductless Mini Split Heat Pump	tonCool	Existing	244.98	15	\$3,359.26	15%	75%	\$0.61	2,790.97	3,339.39	7th Power Plan
Lodging	Heating	Ductless Mini Split Heat Pump	tonCool	Existing	156.99	15	\$3,359.26	15%	75%	\$0.61	2,603.51	2,767.90	7th Power Plan
Lodging	Cooling	Thermostat - WiFi/Interactive	sqft	Existing	0.46	5	\$0.66	30%	40%	\$0.12	565.99	635.60	7th Power Plan
Lodging	Heating	Thermostat - WiFi/Interactive	sqft	Existing	0.33	5	\$0.66	30%	40%	\$0.12	379.89	385.05	7th Power Plan
Lodging	Ventilation	Thermostat - WiFi/Interactive	sqft	Existing	0.13	5	\$0.66	30%	40%	\$0.12	193.18	217.23	7th Power Plan
Lodging	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	Existing	373.55	10	\$8.35	25%	65%	\$0.00	167.55	296.38	Illinois TRM
Lodging	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	Existing	394.09	10	\$11.64	25%	65%	\$0.00	88.58	155.86	7th Power Plan
Lodging	Water Heating	Water Heater - High Efficiency Circulation Pump	WHUnits	Existing	58.14	15	\$36.75	15%	25%	\$0.03	23.61	36.44	Hawaii TRM
Lodging	Water Heating	Water Heater - Pipe Insulation	PipeFeet	Existing	1,161.99	15	\$14.88	16%	75%	\$0.00	321.38	544.17	AEG-BEST

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Lodging	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	Existing	244.19	4	\$144.04	25%	65%	\$0.08	104.80	193.55	7th Power Plan
Lodging	Water Heating	Water Heater - Thermostat Setback	WHUnits	Existing	58.98	2	\$5.00	15%	75%	\$0.02	155.26	281.02	Illinois TRM
Lodging	Water Heating	Water Heater - Solar System	PipeFeet	Existing	3,928.52	20	\$215.28	1%	30%	\$0.00	523.78	916.48	AEG-BEST
Lodging	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.21	15	\$0.35	3%	23%	\$0.10	833.10	962.06	7th Power Plan
Lodging	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.29	15	\$0.58	3%	23%	\$0.11	1,133.55	1,329.81	7th Power Plan
Lodging	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	Existing	428.28	15	\$54.41	1%	3%	\$0.01	31.08	44.03	7th Power Plan
Lodging	Interior Lighting	Interior Lighting - Timeclocks and Timers	occ sens	Existing	0.00	8	\$111.67	7%	15%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Lodging	Interior Lighting	Interior Lighting - Skylights	1000 sqft	Existing	0.00	15	\$1,006.35	15%	25%	\$0.00	0.00	0.00	AEG Research
Lodging	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	1000 sqft	Existing	51.18	16	\$1,807.69	5%	15%	\$1.94	71.79	108.28	7th Power Plan
Lodging	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	Existing	485.27	11	\$30.80	15%	50%	\$0.00	249.97	347.49	Illinois TRM
Lodging	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	ELtg Watts	Existing	4.54	8	\$0.63	15%	25%	\$0.01	760.07	1,196.79	7th Power Plan
Lodging	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	Existing	141.34	8	\$55.10	15%	25%	\$0.03	385.12	623.39	Pacific Gas and Electric Research
Lodging	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	Existing	169.49	7	\$3,400.00	15%	30%	\$1.85	681.58	1,140.97	AEG Research
Lodging	Refrigeration	Refrigeration - Anti-Sweat Heater	Fridge Feet	Existing	42.88	8	\$48.18	0%	0%	\$0.13	0.00	0.00	7th Power Plan
Lodging	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	Existing	55.69	4	\$10.44	0%	0%	\$0.04	0.00	0.00	Michigan Energy Measures Database
Lodging	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	Existing	454.53	16	\$165.20	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Lodging	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	Existing	66.63	15	\$335.85	0%	0%	\$0.39	0.00	0.00	7th Power Plan
Lodging	Refrigeration	Refrigeration - Strip Curtain	Walkin Door	Existing	63.22	2	\$10.41	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Lodging	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBtuh	Existing	1.05	15	\$45.43	0%	0%	\$3.34	0.00	0.00	Annual Energy Outlook, 2015

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Lodging	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	Existing	21.71	15	\$313.82	0%	0%	\$1.11	0.00	0.00	Annual Energy Outlook, 2015
Lodging	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	Existing	282.37	10	\$506.05	0%	0%	\$0.18	0.00	0.00	Vermont TRM
Lodging	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	Existing	25.62	6	\$45.41	0%	0%	\$0.26	0.00	0.00	7th Power Plan
Lodging	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	Existing	2.06	8	\$3.72	0%	0%	\$0.21	0.00	0.00	7th Power Plan
Lodging	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	Existing	462.69	5	\$45.85	0%	0%	\$0.02	0.00	0.00	Illinois TRM
Lodging	Refrigeration	Grocery - ECMs for Display Cases	Fridge Case	Existing	106.15	16	\$165.20	0%	0%	\$0.12	0.00	0.00	7th Power Plan
Lodging	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	Existing	1,264.11	5	\$187.94	25%	75%	\$0.03	296.81	308.83	Illinois TRM
Lodging	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	Existing	1,793.05	18	\$8,526.67	25%	50%	\$0.32	263.88	293.51	7th Power Plan
Lodging	Office Equipment	Office Equipment - Smart Power Strips	Smart Strip	Existing	8.27	4	\$41.63	10%	50%	\$1.02	119.28	109.38	7th Power Plan
Lodging	Cooling	Lodging - Guest Room Controls	LodgUnit	Existing	183.73	15	\$260.00	15%	75%	\$0.17	1,587.62	1,745.57	AEG-BEST
Lodging	Heating	Lodging - Guest Room Controls	LodgUnit	Existing	-70.26	15	\$260.00	15%	75%	\$0.17	-870.80	-870.04	AEG-BEST
Lodging	Office Equipment	Data Center - Best Practice Measures	sqft	Existing	0.01	5	\$0.00	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Lodging	Cooling	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Lodging	Ventilation	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Lodging	Interior Lighting	Data Center - Commercially Available Measures	sqft	Existing	0.02	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Lodging	Office Equipment	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Lodging	Cooling	Data Center - Cutting Edge Measures	sqft	Existing	0.04	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Lodging	Office Equipment	Data Center - Cutting Edge Measures	sqft	Existing	0.00	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Lodging	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	Existing	3,011.55	18	\$4,092.80	0%	0%	\$0.09	0.00	0.00	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Lodging	Miscellaneous	Pool Pump - Timer	perBldg	Existing	406.56	10	\$85.22	15%	75%	\$0.02	56.05	56.39	Ontario Power TRM
Lodging	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	Existing	5,034.59	6	\$35.93	1%	3%	\$0.00	68.28	68.56	7th Power Plan
Lodging	Cooling	Advanced New Construction Designs	sqft	Existing	0.67	25	\$4.11	0%	0%	\$0.06	0.00	0.00	AEG Research
Lodging	Heating	Advanced New Construction Designs	sqft	Existing	0.59	25	\$4.11	0%	0%	\$0.06	0.00	0.00	AEG Research
Lodging	Ventilation	Advanced New Construction Designs	sqft	Existing	0.22	25	\$4.11	0%	0%	\$0.06	0.00	0.00	AEG Research
Lodging	Water Heating	Advanced New Construction Designs	sqft	Existing	0.56	25	\$4.11	0%	0%	\$0.06	0.00	0.00	AEG Research
Lodging	Interior Lighting	Advanced New Construction Designs	sqft	Existing	0.73	25	\$4.11	0%	0%	\$0.06	0.00	0.00	AEG Research
Lodging	Exterior Lighting	Advanced New Construction Designs	sqft	Existing	0.36	25	\$4.11	0%	0%	\$0.06	0.00	0.00	AEG Research
Lodging	Cooling	Strategic Energy Management	sqft	Existing	0.14	3	\$0.12	0%	0%	\$0.01	0.00	0.00	AEG Research
Lodging	Heating	Strategic Energy Management	sqft	Existing	0.10	3	\$0.12	0%	0%	\$0.01	0.00	0.00	AEG Research
Lodging	Ventilation	Strategic Energy Management	sqft	Existing	0.04	3	\$0.12	0%	0%	\$0.01	0.00	0.00	AEG Research
Lodging	Water Heating	Strategic Energy Management	sqft	Existing	0.09	3	\$0.12	0%	0%	\$0.01	0.00	0.00	AEG Research
Lodging	Interior Lighting	Strategic Energy Management	sqft	Existing	0.09	3	\$0.12	0%	0%	\$0.01	0.00	0.00	AEG Research
Lodging	Exterior Lighting	Strategic Energy Management	sqft	Existing	0.05	3	\$0.12	0%	0%	\$0.01	0.00	0.00	AEG Research
Lodging	Refrigeration	Strategic Energy Management	sqft	Existing	0.02	3	\$0.12	0%	0%	\$0.01	0.00	0.00	AEG Research
Lodging	Office Equipment	Strategic Energy Management	sqft	Existing	0.01	3	\$0.12	0%	0%	\$0.01	0.00	0.00	AEG Research
Lodging	Cooling	Commissioning	sqft	Existing	0.20	3	\$0.27	0%	0%	\$0.01	0.00	0.00	AEG Research
Lodging	Heating	Commissioning	sqft	Existing	0.14	3	\$0.27	0%	0%	\$0.01	0.00	0.00	AEG Research
Lodging	Ventilation	Commissioning	sqft	Existing	0.06	3	\$0.27	0%	0%	\$0.01	0.00	0.00	AEG Research
Lodging	Water Heating	Commissioning	sqft	Existing	0.04	3	\$0.27	0%	0%	\$0.01	0.00	0.00	AEG Research
Lodging	Interior Lighting	Commissioning	sqft	Existing	0.11	3	\$0.27	0%	0%	\$0.01	0.00	0.00	AEG Research

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Lodging	Exterior Lighting	Commissioning	sqft	Existing	0.06	3	\$0.27	0%	0%	\$0.01	0.00	0.00	AEG Research
Lodging	Refrigeration	Commissioning	sqft	Existing	0.05	3	\$0.27	0%	0%	\$0.01	0.00	0.00	AEG Research
Lodging	Cooling	Retrocommissioning	sqft	Existing	0.20	3	\$0.17	15%	76%	\$0.01	1,621.56	1,847.67	AEG Research
Lodging	Heating	Retrocommissioning	sqft	Existing	0.14	3	\$0.17	15%	76%	\$0.01	1,071.11	1,053.13	AEG Research
Lodging	Ventilation	Retrocommissioning	sqft	Existing	0.06	3	\$0.17	15%	76%	\$0.01	545.76	615.46	AEG Research
Lodging	Water Heating	Retrocommissioning	sqft	Existing	0.04	3	\$0.17	15%	76%	\$0.01	111.72	204.76	AEG Research
Lodging	Interior Lighting	Retrocommissioning	sqft	Existing	0.11	3	\$0.17	15%	76%	\$0.01	992.62	1,373.31	AEG Research
Lodging	Exterior Lighting	Retrocommissioning	sqft	Existing	0.06	3	\$0.17	15%	76%	\$0.01	490.61	805.74	AEG Research
Lodging	Refrigeration	Retrocommissioning	sqft	Existing	0.06	3	\$0.17	15%	76%	\$0.01	522.13	598.14	AEG Research
Lodging	Interior Lighting	Fruit Storage - Lighting Controls	sqft	Existing	0.07	10	\$0.09	0%	0%	\$0.09	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Lodging	Refrigeration	Fruit Storage Refrigeration Retrofit	sqft	Existing	0.17	10	\$1.09	0%	0%	\$0.66	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Lodging	Refrigeration	Fruit Storage Refrigeration Tuneup	sqft	Existing	0.04	3	\$0.23	0%	0%	\$1.46	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Lodging	Refrigeration	Fruit Storage Retrofit - CO2 Scrub	sqft	Existing	0.08	10	\$3.13	0%	0%	\$3.91	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Lodging	Refrigeration	Fruit Storage Retrofit - Membrane	sqft	Existing	0.02	10	\$0.68	0%	0%	\$4.25	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Lodging	Cooling	Insulation - Ceiling	sqft roof	New	0.00	45	\$1.28	15%	50%	\$1.26	0.00	0.00	Building Energy Simulation Tool
Lodging	Heating	Insulation - Ceiling	sqft roof	New	0.04	45	\$1.28	15%	50%	\$1.26	66.34	66.23	Building Energy Simulation Tool
Lodging	Ventilation	Insulation - Ceiling	sqft roof	New	0.01	45	\$1.28	15%	50%	\$1.26	33.66	35.56	Building Energy Simulation Tool
Lodging	Cooling	Insulation - Ducting	sqft duct	New	0.00	20	\$0.84	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Lodging	Heating	Insulation - Ducting	sqft duct	New	0.00	20	\$0.84	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Lodging	Ventilation	Insulation - Ducting	sqft duct	New	0.00	20	\$0.84	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Lodging	Cooling	Building Shell - Cool Roofs	sqft roof	New	0.09	20	\$0.78	45%	50%	\$1.40	33.85	34.52	Building Energy Simulation Tool

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Lodging	Heating	Building Shell - Cool Roofs	sqft roof	New	-0.05	20	\$0.78	45%	50%	\$1.40	-11.91	-11.92	Building Energy Simulation Tool
Lodging	Ventilation	Building Shell - Cool Roofs	sqft roof	New	-0.02	20	\$0.78	45%	50%	\$1.40	-5.84	-6.11	Building Energy Simulation Tool
Lodging	Cooling	Insulation - Wall Cavity	sqft wall	New	0.00	45	\$0.78	15%	50%	\$4.22	0.00	0.00	Building Energy Simulation Tool
Lodging	Heating	Insulation - Wall Cavity	sqft wall	New	0.01	45	\$0.78	15%	50%	\$4.22	4.68	4.68	Building Energy Simulation Tool
Lodging	Ventilation	Insulation - Wall Cavity	sqft wall	New	0.00	45	\$0.78	15%	50%	\$4.22	2.38	2.51	Building Energy Simulation Tool
Lodging	Cooling	HVAC - Duct Repair and Sealing	tonCool	New	0.00	18	\$0.57	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Lodging	Heating	HVAC - Duct Repair and Sealing	tonCool	New	0.00	18	\$0.57	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Lodging	Ventilation	HVAC - Duct Repair and Sealing	tonCool	New	0.00	18	\$0.57	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Lodging	Cooling	Windows - High Efficiency Glazing	sqft window	New	3.00	30	\$35.93	66%	66%	\$0.21	0.00	0.00	7th Power Plan
Lodging	Heating	Windows - High Efficiency Glazing	sqft window	New	5.36	30	\$35.93	66%	66%	\$0.21	0.00	0.00	7th Power Plan
Lodging	Ventilation	Windows - High Efficiency Glazing	sqft window	New	1.10	30	\$35.93	66%	66%	\$0.21	0.00	0.00	7th Power Plan
Lodging	Cooling	Chiller - Chilled Water Reset	ChillCtrl	New	5,809.63	10	\$884.85	15%	75%	\$0.01	23.23	24.54	AEG-BEST
Lodging	Cooling	Chiller - Chilled Water Variable-Flow System	HP cool	New	120.54	15	\$332.55	15%	75%	\$0.20	85.66	89.20	AEG-BEST
Lodging	Cooling	Chiller - Variable Speed Fans	HP fan	New	300.54	15	\$208.36	15%	75%	\$0.05	21.26	22.21	New Jersey TRM
Lodging	Cooling	Water-Cooled Chiller - Condenser Water Reset	ChillCtrl	New	10,767.98	10	\$884.85	15%	75%	\$0.01	33.73	35.65	AEG-BEST
Lodging	Cooling	HVAC - Economizer	HP cool	New	91.55	10	\$168.42	18%	75%	\$0.17	172.03	181.12	AEG-BEST
Lodging	Heating	Space Heating - Heat Recovery Ventilator	CFM	New	0.82	14	\$5.08	6%	75%	\$0.53	350.61	354.96	7th Power Plan
Lodging	Ventilation	Ventilation - ECM on VAV Boxes	sqft	New	0.19	18	\$0.25	15%	20%	\$0.08	64.32	67.38	7th Power Plan
Lodging	Ventilation	Ventilation - Variable Speed Control	sqft	New	0.05	15	\$181.39	19%	50%	\$258.88	62.58	69.24	AEG-BEST

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Lodging	Ventilation	Ventilation - Demand Controlled	sqft	New	0.01	15	\$0.25	15%	75%	\$1.74	24.97	27.59	7th Power Plan
Lodging	Cooling	Destratification Fans (HVLS)	Strat Fan	New	2,818.08	15	\$7,270.90	15%	30%	\$0.08	160.16	167.27	AEG Research
Lodging	Heating	Destratification Fans (HVLS)	Strat Fan	New	4,712.90	15	\$7,270.90	15%	30%	\$0.08	194.20	193.66	AEG Research
Lodging	Cooling	RTU - Maintenance	tonCool	New	55.88	3	\$35.00	15%	45%	\$0.16	10.93	11.95	AEG Research
Lodging	Cooling	RTU - Advanced Controls	sqft	New	0.16	15	\$0.07	15%	45%	\$0.03	69.84	71.41	7th Power Plan
Lodging	Cooling	RTU - Evaporative Precooler	tonCool	New	108.76	15	\$681.62	15%	75%	\$0.44	307.81	312.32	AEG Research
Lodging	Cooling	Ductless Mini Split Heat Pump	tonCool	New	307.54	15	\$3,359.26	15%	75%	\$0.52	1,464.74	1,539.16	7th Power Plan
Lodging	Heating	Ductless Mini Split Heat Pump	tonCool	New	165.38	15	\$3,359.26	15%	75%	\$0.52	890.14	896.34	7th Power Plan
Lodging	Cooling	Thermostat - WiFi/Interactive	sqft	New	0.37	5	\$0.66	30%	40%	\$0.14	30.65	33.56	7th Power Plan
Lodging	Heating	Thermostat - WiFi/Interactive	sqft	New	0.32	5	\$0.66	30%	40%	\$0.14	19.25	19.52	7th Power Plan
Lodging	Ventilation	Thermostat - WiFi/Interactive	sqft	New	0.11	5	\$0.66	30%	40%	\$0.14	9.27	10.48	7th Power Plan
Lodging	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	New	308.19	10	\$8.35	25%	65%	\$0.00	29.38	46.90	Illinois TRM
Lodging	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	New	316.34	10	\$11.64	25%	65%	\$0.00	15.16	24.17	7th Power Plan
Lodging	Water Heating	Water Heater - High Efficiency Circulation Pump	WHUnits	New	48.96	15	\$36.75	15%	25%	\$0.03	9.17	11.67	Hawaii TRM
Lodging	Water Heating	Water Heater - Pipe Insulation	PipeFeet	New	924.52	15	\$14.88	1%	75%	\$0.00	98.67	146.51	AEG-BEST
Lodging	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	New	207.16	4	\$144.04	25%	65%	\$0.08	8.10	13.92	7th Power Plan
Lodging	Water Heating	Water Heater - Thermostat Setback	WHUnits	New	49.17	2	\$5.00	15%	75%	\$0.02	4.25	7.74	Illinois TRM
Lodging	Water Heating	Water Heater - Solar System	PipeFeet	New	3,209.54	20	\$215.28	1%	30%	\$0.00	138.50	203.81	AEG-BEST
Lodging	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.22	15	\$0.35	11%	23%	\$0.08	398.14	464.23	7th Power Plan
Lodging	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.31	15	\$0.58	11%	23%	\$0.10	549.43	643.19	7th Power Plan
Lodging	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	New	419.45	15	\$54.41	1%	3%	\$0.01	6.68	9.26	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Lodging	Interior Lighting	Interior Lighting - Timeclocks and Timers	occ sens	New	0.00	8	\$111.67	7%	15%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Lodging	Interior Lighting	Interior Lighting - Skylights	1000 sqft	New	0.00	15	\$1,006.35	18%	25%	\$0.00	0.00	0.00	AEG Research
Lodging	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	1000 sqft	New	45.10	16	\$1,807.69	5%	15%	\$1.99	18.35	23.99	7th Power Plan
Lodging	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	New	421.81	11	\$30.80	15%	50%	\$0.00	50.16	65.44	Illinois TRM
Lodging	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	ELtg Watts	New	3.56	8	\$0.63	15%	25%	\$0.01	112.12	178.91	7th Power Plan
Lodging	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	New	113.10	8	\$55.10	15%	25%	\$0.03	59.09	93.84	Pacific Gas and Electric Research
Lodging	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	New	137.93	7	\$3,400.00	15%	30%	\$1.84	93.67	153.71	AEG Research
Lodging	Refrigeration	Refrigeration - Anti-Sweat Heater	Fridge Feet	New	35.03	8	\$48.18	0%	0%	\$0.17	0.00	0.00	7th Power Plan
Lodging	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	New	45.10	4	\$10.44	0%	0%	\$0.05	0.00	0.00	Michigan Energy Measures Database
Lodging	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	New	380.96	16	\$165.20	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Lodging	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	New	65.62	15	\$335.85	0%	0%	\$0.42	0.00	0.00	7th Power Plan
Lodging	Refrigeration	Refrigeration - Strip Curtain	Walkin Door	New	59.63	2	\$10.41	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Lodging	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBtuh	New	1.03	15	\$45.43	0%	0%	\$3.59	0.00	0.00	Annual Energy Outlook, 2015
Lodging	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	New	21.38	15	\$313.82	0%	0%	\$1.20	0.00	0.00	Annual Energy Outlook, 2015
Lodging	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	New	250.81	10	\$506.05	0%	0%	\$0.22	0.00	0.00	Vermont TRM
Lodging	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	New	24.87	6	\$45.41	0%	0%	\$0.29	0.00	0.00	7th Power Plan
Lodging	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	New	2.00	8	\$3.72	0%	0%	\$0.23	0.00	0.00	7th Power Plan
Lodging	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	New	432.15	5	\$45.85	0%	0%	\$0.02	0.00	0.00	Illinois TRM
Lodging	Refrigeration	Grocery - ECMs for Display Cases	Fridge Case	New	103.03	16	\$165.20	0%	0%	\$0.13	0.00	0.00	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Lodging	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	New	1,245.40	5	\$187.94	25%	75%	\$0.03	37.34	37.69	Illinois TRM
Lodging	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	New	1,581.39	18	\$8,526.67	25%	50%	\$0.33	109.85	115.27	7th Power Plan
Lodging	Office Equipment	Office Equipment - Smart Power Strips	Smart Strip	New	9.69	4	\$41.63	10%	50%	\$0.87	9.71	9.11	7th Power Plan
Lodging	Cooling	Lodging - Guest Room Controls	LodgUnit	New	221.06	15	\$260.00	15%	75%	\$0.12	761.62	790.54	AEG-BEST
Lodging	Heating	Lodging - Guest Room Controls	LodgUnit	New	-69.91	15	\$260.00	15%	75%	\$0.12	-271.54	-271.95	AEG-BEST
Lodging	Office Equipment	Data Center - Best Practice Measures	sqft	New	0.01	5	\$0.00	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Lodging	Cooling	Data Center - Commercially Available Measures	sqft	New	0.01	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Lodging	Ventilation	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Lodging	Interior Lighting	Data Center - Commercially Available Measures	sqft	New	0.02	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Lodging	Office Equipment	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Lodging	Cooling	Data Center - Cutting Edge Measures	sqft	New	0.03	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Lodging	Office Equipment	Data Center - Cutting Edge Measures	sqft	New	0.00	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Lodging	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	New	2,656.05	18	\$4,092.80	0%	0%	\$0.10	0.00	0.00	7th Power Plan
Lodging	Miscellaneous	Pool Pump - Timer	perBldg	New	405.12	10	\$85.22	15%	75%	\$0.02	12.37	12.44	Ontario Power TRM
Lodging	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	New	5,009.88	6	\$35.93	1%	3%	\$0.00	5.05	5.09	7th Power Plan
Lodging	Cooling	Advanced New Construction Designs	sqft	New	0.71	25	\$4.11	10%	25%	\$0.06	867.60	874.36	AEG Research
Lodging	Heating	Advanced New Construction Designs	sqft	New	0.62	25	\$4.11	10%	25%	\$0.06	544.85	544.95	AEG Research
Lodging	Ventilation	Advanced New Construction Designs	sqft	New	0.21	25	\$4.11	10%	25%	\$0.06	262.27	276.02	AEG Research
Lodging	Water Heating	Advanced New Construction Designs	sqft	New	0.48	25	\$4.11	10%	25%	\$0.06	193.51	234.21	AEG Research

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Lodging	Interior Lighting	Advanced New Construction Designs	sqft	New	0.58	25	\$4.11	10%	25%	\$0.06	616.18	700.13	AEG Research
Lodging	Exterior Lighting	Advanced New Construction Designs	sqft	New	0.27	25	\$4.11	10%	25%	\$0.06	299.98	361.06	AEG Research
Lodging	Cooling	Strategic Energy Management	sqft	New	0.11	3	\$0.12	0%	0%	\$0.01	0.00	0.00	AEG Research
Lodging	Heating	Strategic Energy Management	sqft	New	0.10	3	\$0.12	0%	0%	\$0.01	0.00	0.00	AEG Research
Lodging	Ventilation	Strategic Energy Management	sqft	New	0.03	3	\$0.12	0%	0%	\$0.01	0.00	0.00	AEG Research
Lodging	Water Heating	Strategic Energy Management	sqft	New	0.07	3	\$0.12	0%	0%	\$0.01	0.00	0.00	AEG Research
Lodging	Interior Lighting	Strategic Energy Management	sqft	New	0.09	3	\$0.12	0%	0%	\$0.01	0.00	0.00	AEG Research
Lodging	Exterior Lighting	Strategic Energy Management	sqft	New	0.04	3	\$0.12	0%	0%	\$0.01	0.00	0.00	AEG Research
Lodging	Refrigeration	Strategic Energy Management	sqft	New	0.03	3	\$0.12	0%	0%	\$0.01	0.00	0.00	AEG Research
Lodging	Office Equipment	Strategic Energy Management	sqft	New	0.01	3	\$0.12	0%	0%	\$0.01	0.00	0.00	AEG Research
Lodging	Cooling	Commissioning	sqft	New	0.16	3	\$0.26	15%	76%	\$0.01	72.99	79.70	AEG Research
Lodging	Heating	Commissioning	sqft	New	0.13	3	\$0.26	15%	76%	\$0.01	45.67	45.37	AEG Research
Lodging	Ventilation	Commissioning	sqft	New	0.05	3	\$0.26	15%	76%	\$0.01	22.14	24.52	AEG Research
Lodging	Water Heating	Commissioning	sqft	New	0.03	3	\$0.26	15%	76%	\$0.01	5.36	9.51	AEG Research
Lodging	Interior Lighting	Commissioning	sqft	New	0.11	3	\$0.26	15%	76%	\$0.01	44.18	73.06	AEG Research
Lodging	Exterior Lighting	Commissioning	sqft	New	0.05	3	\$0.26	15%	76%	\$0.01	20.78	37.14	AEG Research
Lodging	Refrigeration	Commissioning	sqft	New	0.07	3	\$0.26	15%	76%	\$0.01	30.06	32.07	AEG Research
Lodging	Cooling	Retrocommissioning	sqft	New	0.16	3	\$0.16	0%	0%	\$0.01	0.00	0.00	AEG Research
Lodging	Heating	Retrocommissioning	sqft	New	0.13	3	\$0.16	0%	0%	\$0.01	0.00	0.00	AEG Research
Lodging	Ventilation	Retrocommissioning	sqft	New	0.05	3	\$0.16	0%	0%	\$0.01	0.00	0.00	AEG Research
Lodging	Water Heating	Retrocommissioning	sqft	New	0.03	3	\$0.16	0%	0%	\$0.01	0.00	0.00	AEG Research
Lodging	Interior Lighting	Retrocommissioning	sqft	New	0.11	3	\$0.16	0%	0%	\$0.01	0.00	0.00	AEG Research

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Lodging	Exterior Lighting	Retrocommissioning	sqft	New	0.05	3	\$0.16	0%	0%	\$0.01	0.00	0.00	AEG Research
Lodging	Refrigeration	Retrocommissioning	sqft	New	0.07	3	\$0.16	0%	0%	\$0.01	0.00	0.00	AEG Research
Lodging	Interior Lighting	Fruit Storage - Lighting Controls	sqft	New	0.07	10	\$0.09	0%	0%	\$0.08	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Lodging	Refrigeration	Fruit Storage Refrigeration Retrofit	sqft	New	0.21	10	\$1.09	0%	0%	\$0.55	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Lodging	Refrigeration	Fruit Storage Refrigeration Tuneup	sqft	New	0.06	3	\$0.23	0%	0%	\$1.21	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Lodging	Refrigeration	Fruit Storage Retrofit - CO2 Scrub	sqft	New	0.10	10	\$3.13	0%	0%	\$3.24	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Lodging	Refrigeration	Fruit Storage Retrofit - Membrane	sqft	New	0.02	10	\$0.68	0%	0%	\$3.51	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse	Cooling	Insulation - Ceiling	sqft roof	Existing	0.18	45	\$1.28	15%	35%	\$0.11	613.85	677.00	Building Energy Simulation Tool
Warehouse	Heating	Insulation - Ceiling	sqft roof	Existing	0.35	45	\$1.28	15%	35%	\$0.11	1,287.18	1,435.55	Building Energy Simulation Tool
Warehouse	Ventilation	Insulation - Ceiling	sqft roof	Existing	0.01	45	\$1.28	15%	35%	\$0.11	232.35	280.57	Building Energy Simulation Tool
Warehouse	Cooling	Insulation - Ducting	sqft duct	Existing	0.07	20	\$0.84	15%	35%	\$0.60	224.68	257.60	Building Energy Simulation Tool
Warehouse	Heating	Insulation - Ducting	sqft duct	Existing	0.01	20	\$0.84	15%	35%	\$0.60	52.71	59.73	Building Energy Simulation Tool
Warehouse	Ventilation	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.84	15%	35%	\$0.60	9.37	11.62	Building Energy Simulation Tool
Warehouse	Cooling	Building Shell - Cool Roofs	sqft roof	Existing	0.23	20	\$0.78	45%	50%	\$10.00	190.95	219.65	Building Energy Simulation Tool
Warehouse	Heating	Building Shell - Cool Roofs	sqft roof	Existing	-0.23	20	\$0.78	45%	50%	\$10.00	-207.58	-235.33	Building Energy Simulation Tool
Warehouse	Ventilation	Building Shell - Cool Roofs	sqft roof	Existing	-0.01	20	\$0.78	45%	50%	\$10.00	-36.61	-45.56	Building Energy Simulation Tool
Warehouse	Cooling	Insulation - Wall Cavity	sqft wall	Existing	0.02	45	\$0.78	15%	35%	\$0.01	11.34	11.65	Building Energy Simulation Tool
Warehouse	Heating	Insulation - Wall Cavity	sqft wall	Existing	3.02	45	\$0.78	15%	35%	\$0.01	2,240.63	2,253.12	Building Energy Simulation Tool
Warehouse	Ventilation	Insulation - Wall Cavity	sqft wall	Existing	0.09	45	\$0.78	15%	35%	\$0.01	334.60	390.09	Building Energy Simulation Tool

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Warehouse	Cooling	HVAC - Duct Repair and Sealing	tonCool	Existing	12.74	18	\$0.57	15%	25%	\$0.00	46.69	47.89	Building Energy Simulation Tool
Warehouse	Heating	HVAC - Duct Repair and Sealing	tonCool	Existing	20.26	18	\$0.57	15%	25%	\$0.00	79.27	79.58	Building Energy Simulation Tool
Warehouse	Ventilation	HVAC - Duct Repair and Sealing	tonCool	Existing	0.61	18	\$0.57	15%	25%	\$0.00	11.84	13.78	Building Energy Simulation Tool
Warehouse	Cooling	Windows - High Efficiency Glazing	sqft window	Existing	4.66	30	\$35.93	48%	48%	\$0.07	0.00	0.00	7th Power Plan
Warehouse	Heating	Windows - High Efficiency Glazing	sqft window	Existing	19.55	30	\$35.93	48%	48%	\$0.07	0.00	0.00	7th Power Plan
Warehouse	Ventilation	Windows - High Efficiency Glazing	sqft window	Existing	0.40	30	\$35.93	48%	48%	\$0.07	0.00	0.00	7th Power Plan
Warehouse	Cooling	Chiller - Chilled Water Reset	ChillCtrl	Existing	0.00	10	\$884.85	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Warehouse	Cooling	Chiller - Chilled Water Variable-Flow System	HP cool	Existing	0.00	15	\$332.55	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Warehouse	Cooling	Chiller - Variable Speed Fans	HP fan	Existing	0.00	15	\$208.36	15%	75%	\$0.00	0.00	0.00	New Jersey TRM
Warehouse	Cooling	Water-Cooled Chiller - Condenser Water Reset	ChillCtrl	Existing	0.00	10	\$884.85	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Warehouse	Cooling	HVAC - Economizer	HP cool	Existing	125.45	10	\$168.42	18%	75%	\$0.13	1,964.36	2,182.00	AEG-BEST
Warehouse	Heating	Space Heating - Heat Recovery Ventilator	CFM	Existing	6.94	14	\$5.08	3%	75%	\$0.06	6,271.78	6,578.31	7th Power Plan
Warehouse	Ventilation	Ventilation - ECM on VAV Boxes	sqft	Existing	0.04	18	\$0.25	15%	20%	\$0.38	177.85	216.61	7th Power Plan
Warehouse	Ventilation	Ventilation - Variable Speed Control	sqft	Existing	0.00	15	\$181.39	13%	50%	\$3,253.79	128.84	173.24	AEG-BEST
Warehouse	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.25	15%	75%	\$7.96	117.67	157.79	7th Power Plan
Warehouse	Cooling	Destratification Fans (HVLS)	Strat Fan	Existing	2,854.81	15	\$7,270.90	15%	75%	\$0.04	2,902.92	3,098.42	AEG Research
Warehouse	Heating	Destratification Fans (HVLS)	Strat Fan	Existing	11,077.76	15	\$7,270.90	15%	75%	\$0.04	11,776.31	12,798.84	AEG Research
Warehouse	Cooling	RTU - Maintenance	tonCool	Existing	54.13	3	\$35.00	15%	45%	\$0.17	538.75	622.49	AEG Research
Warehouse	Cooling	RTU - Advanced Controls	sqft	Existing	0.06	15	\$0.07	15%	45%	\$0.09	264.26	280.16	7th Power Plan
Warehouse	Cooling	RTU - Evaporative Precooler	tonCool	Existing	105.32	15	\$681.62	15%	75%	\$0.45	1,827.08	1,966.79	AEG Research
Warehouse	Cooling	Ductless Mini Split Heat Pump	tonCool	Existing	241.66	15	\$3,359.26	15%	25%	\$0.32	47.58	58.11	7th Power Plan

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Warehouse	Heating	Ductless Mini Split Heat Pump	tonCool	Existing	476.63	15	\$3,359.26	15%	25%	\$0.32	1,416.82	1,638.34	7th Power Plan
Warehouse	Cooling	Thermostat - WiFi/Interactive	sqft	Existing	0.35	5	\$0.66	30%	40%	\$0.10	621.25	679.43	7th Power Plan
Warehouse	Heating	Thermostat - WiFi/Interactive	sqft	Existing	0.71	5	\$0.66	30%	40%	\$0.10	1,302.70	1,440.65	7th Power Plan
Warehouse	Ventilation	Thermostat - WiFi/Interactive	sqft	Existing	0.02	5	\$0.66	30%	40%	\$0.10	235.15	281.55	7th Power Plan
Warehouse	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	Existing	45.86	10	\$8.35	25%	65%	\$0.01	76.76	136.51	Illinois TRM
Warehouse	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	Existing	47.39	10	\$11.64	25%	65%	\$0.02	39.47	70.96	7th Power Plan
Warehouse	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	Existing	57.63	15	\$36.75	15%	75%	\$0.03	63.46	99.20	Hawaii TRM
Warehouse	Water Heating	Water Heater - Pipe Insulation	PipeFeet	Existing	141.65	15	\$14.88	16%	75%	\$0.01	145.75	249.18	AEG-BEST
Warehouse	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	Existing	29.47	4	\$144.04	25%	65%	\$0.62	46.49	88.21	7th Power Plan
Warehouse	Water Heating	Water Heater - Thermostat Setback	WHunits	Existing	58.46	2	\$5.00	15%	75%	\$0.02	70.19	128.69	Illinois TRM
Warehouse	Water Heating	Water Heater - Solar System	PipeFeet	Existing	478.79	20	\$215.28	1%	30%	\$0.02	237.18	419.71	AEG-BEST
Warehouse	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.21	15	\$0.35	3%	23%	\$0.10	4,678.68	5,981.26	7th Power Plan
Warehouse	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.29	15	\$0.58	3%	23%	\$0.12	6,303.21	8,236.77	7th Power Plan
Warehouse	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	Existing	613.12	15	\$54.41	1%	3%	\$0.01	135.78	199.77	7th Power Plan
Warehouse	Interior Lighting	Interior Lighting - Timeclocks and Timers	occ sens	Existing	0.00	8	\$111.67	7%	15%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Warehouse	Interior Lighting	Interior Lighting - Skylights	1000 sqft	Existing	0.00	15	\$1,006.35	15%	30%	\$0.00	0.00	0.00	AEG Research
Warehouse	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	1000 sqft	Existing	33.34	16	\$1,807.69	5%	15%	\$3.05	287.16	455.53	7th Power Plan
Warehouse	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	Existing	319.99	11	\$30.80	15%	50%	\$0.01	1,028.28	1,470.07	Illinois TRM
Warehouse	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	ELtg Watts	Existing	0.88	8	\$0.63	15%	25%	\$0.06	1,307.68	2,062.09	7th Power Plan

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Warehouse	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	Existing	72.31	8	\$55.10	15%	25%	\$0.07	661.69	1,074.21	Pacific Gas and Electric Research
Warehouse	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	Existing	88.76	7	\$3,400.00	15%	30%	\$3.60	1,209.42	1,993.61	AEG Research
Warehouse	Refrigeration	Refrigeration - Anti-Sweat Heater	Fridge Feet	Existing	79.86	8	\$48.18	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Warehouse	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	Existing	121.32	4	\$10.44	0%	0%	\$0.02	0.00	0.00	Michigan Energy Measures Database
Warehouse	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	Existing	1,284.90	16	\$165.20	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Warehouse	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	Existing	119.24	15	\$335.85	0%	0%	\$0.22	0.00	0.00	7th Power Plan
Warehouse	Refrigeration	Refrigeration - Strip Curtain	Walkin Door	Existing	124.57	2	\$10.41	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Warehouse	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBtuh	Existing	1.87	15	\$45.43	0%	0%	\$1.87	0.00	0.00	Annual Energy Outlook, 2015
Warehouse	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	Existing	38.85	15	\$313.82	0%	0%	\$0.62	0.00	0.00	Annual Energy Outlook, 2015
Warehouse	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	Existing	804.41	10	\$506.05	0%	0%	\$0.06	0.00	0.00	Vermont TRM
Warehouse	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	Existing	47.72	6	\$45.41	0%	0%	\$0.14	0.00	0.00	7th Power Plan
Warehouse	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	Existing	3.85	8	\$3.72	0%	0%	\$0.12	0.00	0.00	7th Power Plan
Warehouse	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	Existing	854.76	5	\$45.85	0%	0%	\$0.01	0.00	0.00	Illinois TRM
Warehouse	Refrigeration	Grocery - ECMs for Display Cases	Fridge Case	Existing	197.74	16	\$165.20	0%	0%	\$0.06	0.00	0.00	7th Power Plan
Warehouse	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	Existing	1,253.14	5	\$187.94	25%	75%	\$0.03	152.30	158.87	Illinois TRM
Warehouse	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	Existing	324.36	18	\$8,526.67	25%	50%	\$1.53	301.83	370.05	7th Power Plan
Warehouse	Office Equipment	Office Equipment - Smart Power Strips	Smart Strip	Existing	9.45	4	\$41.63	10%	50%	\$0.88	907.92	807.03	7th Power Plan
Warehouse	Cooling	Lodging - Guest Room Controls	LodgUnit	Existing	116.81	15	\$260.00	0%	0%	\$10.00	0.00	0.00	AEG-BEST
Warehouse	Heating	Lodging - Guest Room Controls	LodgUnit	Existing	-138.31	15	\$260.00	0%	0%	\$10.00	0.00	0.00	AEG-BEST

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Warehouse	Office Equipment	Data Center - Best Practice Measures	sqft	Existing	0.02	5	\$0.00	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse	Cooling	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse	Ventilation	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse	Interior Lighting	Data Center - Commercially Available Measures	sqft	Existing	0.02	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse	Office Equipment	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse	Cooling	Data Center - Cutting Edge Measures	sqft	Existing	0.03	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse	Office Equipment	Data Center - Cutting Edge Measures	sqft	Existing	0.00	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	Existing	1,113.89	18	\$4,092.80	0%	0%	\$0.22	0.00	0.00	7th Power Plan
Warehouse	Miscellaneous	Pool Pump - Timer	perBldg	Existing	0.00	10	\$85.22	15%	75%	\$0.00	0.00	0.00	Ontario Power TRM
Warehouse	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	Existing	5,714.42	6	\$35.93	1%	3%	\$0.00	0.00	249.19	7th Power Plan
Warehouse	Cooling	Advanced New Construction Designs	sqft	Existing	0.52	25	\$4.11	0%	0%	\$0.09	0.00	0.00	AEG Research
Warehouse	Heating	Advanced New Construction Designs	sqft	Existing	1.26	25	\$4.11	0%	0%	\$0.09	0.00	0.00	AEG Research
Warehouse	Ventilation	Advanced New Construction Designs	sqft	Existing	0.04	25	\$4.11	0%	0%	\$0.09	0.00	0.00	AEG Research
Warehouse	Water Heating	Advanced New Construction Designs	sqft	Existing	0.03	25	\$4.11	0%	0%	\$0.09	0.00	0.00	AEG Research
Warehouse	Interior Lighting	Advanced New Construction Designs	sqft	Existing	0.43	25	\$4.11	0%	0%	\$0.09	0.00	0.00	AEG Research
Warehouse	Exterior Lighting	Advanced New Construction Designs	sqft	Existing	0.10	25	\$4.11	0%	0%	\$0.09	0.00	0.00	AEG Research
Warehouse	Cooling	Strategic Energy Management	sqft	Existing	0.12	3	\$0.06	3%	11%	\$0.01	185.86	193.28	AEG Research
Warehouse	Heating	Strategic Energy Management	sqft	Existing	0.25	3	\$0.06	3%	11%	\$0.01	422.55	425.32	AEG Research
Warehouse	Ventilation	Strategic Energy Management	sqft	Existing	0.01	3	\$0.06	3%	11%	\$0.01	63.10	77.33	AEG Research

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Warehouse	Water Heating	Strategic Energy Management	sqft	Existing	0.01	3	\$0.06	3%	11%	\$0.01	14.14	26.56	AEG Research
Warehouse	Interior Lighting	Strategic Energy Management	sqft	Existing	0.07	3	\$0.06	3%	11%	\$0.01	488.25	712.51	AEG Research
Warehouse	Exterior Lighting	Strategic Energy Management	sqft	Existing	0.01	3	\$0.06	3%	11%	\$0.01	107.22	165.32	AEG Research
Warehouse	Refrigeration	Strategic Energy Management	sqft	Existing	0.00	3	\$0.06	3%	11%	\$0.01	29.23	33.49	AEG Research
Warehouse	Office Equipment	Strategic Energy Management	sqft	Existing	0.01	3	\$0.06	3%	11%	\$0.01	102.65	91.05	AEG Research
Warehouse	Cooling	Commissioning	sqft	Existing	0.16	3	\$0.22	0%	0%	\$0.01	0.00	0.00	AEG Research
Warehouse	Heating	Commissioning	sqft	Existing	0.33	3	\$0.22	0%	0%	\$0.01	0.00	0.00	AEG Research
Warehouse	Ventilation	Commissioning	sqft	Existing	0.01	3	\$0.22	0%	0%	\$0.01	0.00	0.00	AEG Research
Warehouse	Water Heating	Commissioning	sqft	Existing	0.00	3	\$0.22	0%	0%	\$0.01	0.00	0.00	AEG Research
Warehouse	Interior Lighting	Commissioning	sqft	Existing	0.08	3	\$0.22	0%	0%	\$0.01	0.00	0.00	AEG Research
Warehouse	Exterior Lighting	Commissioning	sqft	Existing	0.02	3	\$0.22	0%	0%	\$0.01	0.00	0.00	AEG Research
Warehouse	Refrigeration	Commissioning	sqft	Existing	0.01	3	\$0.22	0%	0%	\$0.01	0.00	0.00	AEG Research
Warehouse	Cooling	Retrocommissioning	sqft	Existing	0.16	3	\$0.14	11%	73%	\$0.01	1,986.39	2,070.56	AEG Research
Warehouse	Heating	Retrocommissioning	sqft	Existing	0.34	3	\$0.14	11%	73%	\$0.01	4,426.07	4,534.02	AEG Research
Warehouse	Ventilation	Retrocommissioning	sqft	Existing	0.01	3	\$0.14	11%	73%	\$0.01	660.96	824.52	AEG Research
Warehouse	Water Heating	Retrocommissioning	sqft	Existing	0.00	3	\$0.14	11%	73%	\$0.01	50.40	94.86	AEG Research
Warehouse	Interior Lighting	Retrocommissioning	sqft	Existing	0.08	3	\$0.14	11%	73%	\$0.01	4,349.59	6,361.37	AEG Research
Warehouse	Exterior Lighting	Retrocommissioning	sqft	Existing	0.02	3	\$0.14	11%	73%	\$0.01	955.17	1,476.04	AEG Research
Warehouse	Refrigeration	Retrocommissioning	sqft	Existing	0.01	3	\$0.14	11%	73%	\$0.01	520.83	597.96	AEG Research
Warehouse	Interior Lighting	Fruit Storage - Lighting Controls	sqft	Existing	0.05	10	\$0.09	0%	0%	\$0.13	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse	Refrigeration	Fruit Storage Refrigeration Retrofit	sqft	Existing	0.03	10	\$1.09	0%	0%	\$4.38	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse	Refrigeration	Fruit Storage Refrigeration Tuneup	sqft	Existing	0.01	3	\$0.23	0%	0%	\$9.69	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx

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Warehouse	Refrigeration	Fruit Storage Retrofit - CO2 Scrub	sqft	Existing	0.01	10	\$3.13	0%	0%	\$25.95	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse	Refrigeration	Fruit Storage Retrofit - Membrane	sqft	Existing	0.00	10	\$0.68	0%	0%	\$28.16	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse	Cooling	Insulation - Ceiling	sqft roof	New	0.00	45	\$1.28	15%	50%	\$0.16	0.00	0.00	Building Energy Simulation Tool
Warehouse	Heating	Insulation - Ceiling	sqft roof	New	0.39	45	\$1.28	15%	50%	\$0.16	1,310.74	1,297.07	Building Energy Simulation Tool
Warehouse	Ventilation	Insulation - Ceiling	sqft roof	New	0.01	45	\$1.28	15%	50%	\$0.16	173.81	190.48	Building Energy Simulation Tool
Warehouse	Cooling	Insulation - Ducting	sqft duct	New	0.10	20	\$0.84	15%	25%	\$0.45	86.46	87.42	Building Energy Simulation Tool
Warehouse	Heating	Insulation - Ducting	sqft duct	New	0.02	20	\$0.84	15%	25%	\$0.45	20.89	20.79	Building Energy Simulation Tool
Warehouse	Ventilation	Insulation - Ducting	sqft duct	New	0.00	20	\$0.84	15%	25%	\$0.45	2.77	3.06	Building Energy Simulation Tool
Warehouse	Cooling	Building Shell - Cool Roofs	sqft roof	New	0.20	20	\$0.78	45%	50%	\$10.00	91.62	92.71	Building Energy Simulation Tool
Warehouse	Heating	Building Shell - Cool Roofs	sqft roof	New	-0.25	20	\$0.78	45%	50%	\$10.00	-121.53	-120.99	Building Energy Simulation Tool
Warehouse	Ventilation	Building Shell - Cool Roofs	sqft roof	New	-0.01	20	\$0.78	45%	50%	\$10.00	-15.90	-17.62	Building Energy Simulation Tool
Warehouse	Cooling	Insulation - Wall Cavity	sqft wall	New	-0.01	45	\$0.78	15%	50%	\$0.10	-7.06	-7.12	Building Energy Simulation Tool
Warehouse	Heating	Insulation - Wall Cavity	sqft wall	New	0.42	45	\$0.78	15%	50%	\$0.10	264.27	264.38	Building Energy Simulation Tool
Warehouse	Ventilation	Insulation - Wall Cavity	sqft wall	New	0.01	45	\$0.78	15%	50%	\$0.10	33.38	36.62	Building Energy Simulation Tool
Warehouse	Cooling	HVAC - Duct Repair and Sealing	tonCool	New	19.59	18	\$0.57	15%	25%	\$0.00	33.08	33.34	Building Energy Simulation Tool
Warehouse	Heating	HVAC - Duct Repair and Sealing	tonCool	New	16.70	18	\$0.57	15%	25%	\$0.00	29.62	29.65	Building Energy Simulation Tool
Warehouse	Ventilation	HVAC - Duct Repair and Sealing	tonCool	New	0.36	18	\$0.57	15%	25%	\$0.00	3.74	4.13	Building Energy Simulation Tool
Warehouse	Cooling	Windows - High Efficiency Glazing	sqft window	New	4.16	30	\$35.93	66%	66%	\$0.08	0.00	0.00	7th Power Plan
Warehouse	Heating	Windows - High Efficiency Glazing	sqft window	New	21.51	30	\$35.93	66%	66%	\$0.08	0.00	0.00	7th Power Plan

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Warehouse	Ventilation	Windows - High Efficiency Glazing	sqft window	New	0.28	30	\$35.93	66%	66%	\$0.08	0.00	0.00	7th Power Plan
Warehouse	Cooling	Chiller - Chilled Water Reset	ChillCtrl	New	0.00	10	\$884.85	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Warehouse	Cooling	Chiller - Chilled Water Variable-Flow System	HP cool	New	0.00	15	\$332.55	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Warehouse	Cooling	Chiller - Variable Speed Fans	HP fan	New	0.00	15	\$208.36	15%	75%	\$0.00	0.00	0.00	New Jersey TRM
Warehouse	Cooling	Water-Cooled Chiller - Condenser Water Reset	ChillCtrl	New	0.00	10	\$884.85	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Warehouse	Cooling	HVAC - Economizer	HP cool	New	109.84	10	\$168.42	18%	75%	\$0.16	383.77	389.36	AEG-BEST
Warehouse	Heating	Space Heating - Heat Recovery Ventilator	CFM	New	7.03	14	\$5.08	6%	75%	\$0.06	1,628.98	1,627.70	7th Power Plan
Warehouse	Ventilation	Ventilation - ECM on VAV Boxes	sqft	New	0.03	18	\$0.25	15%	20%	\$0.39	82.83	91.63	7th Power Plan
Warehouse	Ventilation	Ventilation - Variable Speed Control	sqft	New	0.00	15	\$181.39	19%	50%	\$3,353.89	30.03	35.78	AEG-BEST
Warehouse	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.25	15%	75%	\$8.21	32.79	39.10	7th Power Plan
Warehouse	Cooling	Destratification Fans (HVLS)	Strat Fan	New	2,403.63	15	\$7,270.90	15%	75%	\$0.04	678.03	688.79	AEG Research
Warehouse	Heating	Destratification Fans (HVLS)	Strat Fan	New	11,536.50	15	\$7,270.90	15%	75%	\$0.04	3,441.20	3,428.45	AEG Research
Warehouse	Cooling	RTU - Maintenance	tonCool	New	66.02	3	\$35.00	15%	45%	\$0.15	45.55	47.21	AEG Research
Warehouse	Cooling	RTU - Advanced Controls	sqft	New	0.07	15	\$0.07	15%	45%	\$0.08	145.61	146.92	7th Power Plan
Warehouse	Cooling	RTU - Evaporative Precooler	tonCool	New	129.35	15	\$681.62	15%	75%	\$0.40	1,295.66	1,290.09	AEG Research
Warehouse	Cooling	Ductless Mini Split Heat Pump	tonCool	New	329.79	15	\$3,359.26	15%	25%	\$0.29	24.51	25.22	7th Power Plan
Warehouse	Heating	Ductless Mini Split Heat Pump	tonCool	New	538.51	15	\$3,359.26	15%	25%	\$0.29	587.19	585.17	7th Power Plan
Warehouse	Cooling	Thermostat - WiFi/Interactive	sqft	New	0.31	5	\$0.66	30%	40%	\$0.10	32.64	33.33	7th Power Plan
Warehouse	Heating	Thermostat - WiFi/Interactive	sqft	New	0.78	5	\$0.66	30%	40%	\$0.10	85.09	85.48	7th Power Plan
Warehouse	Ventilation	Thermostat - WiFi/Interactive	sqft	New	0.02	5	\$0.66	30%	40%	\$0.10	11.28	13.57	7th Power Plan
Warehouse	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	New	37.38	10	\$8.35	25%	65%	\$0.01	14.26	22.78	Illinois TRM

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Warehouse	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	New	38.94	10	\$11.64	25%	65%	\$0.02	7.44	11.87	7th Power Plan
Warehouse	Water Heating	Water Heater - High Efficiency Circulation Pump	WHUnits	New	49.03	15	\$36.75	15%	75%	\$0.03	26.80	34.15	Hawaii TRM
Warehouse	Water Heating	Water Heater - Pipe Insulation	PipeFeet	New	114.44	15	\$14.88	1%	75%	\$0.01	48.51	72.24	AEG-BEST
Warehouse	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	New	25.27	4	\$144.04	25%	65%	\$0.61	3.93	6.82	7th Power Plan
Warehouse	Water Heating	Water Heater - Thermostat Setback	WHUnits	New	49.24	2	\$5.00	15%	75%	\$0.02	2.09	3.81	Illinois TRM
Warehouse	Water Heating	Water Heater - Solar System	PipeFeet	New	395.05	20	\$215.28	1%	30%	\$0.02	67.86	99.94	AEG-BEST
Warehouse	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.19	15	\$0.35	11%	23%	\$0.10	2,247.66	2,711.12	7th Power Plan
Warehouse	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.26	15	\$0.58	11%	23%	\$0.12	3,088.30	3,744.42	7th Power Plan
Warehouse	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	New	529.67	15	\$54.41	1%	3%	\$0.01	29.36	40.67	7th Power Plan
Warehouse	Interior Lighting	Interior Lighting - Timeclocks and Timers	occ sens	New	0.00	8	\$111.67	7%	15%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Warehouse	Interior Lighting	Interior Lighting - Skylights	1000 sqft	New	0.00	15	\$1,006.35	18%	33%	\$0.00	0.00	0.00	AEG Research
Warehouse	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	1000 sqft	New	27.86	16	\$1,807.69	5%	15%	\$3.21	77.18	104.65	7th Power Plan
Warehouse	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	New	260.56	11	\$30.80	15%	50%	\$0.01	210.14	287.26	Illinois TRM
Warehouse	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	ELtg Watts	New	0.75	8	\$0.63	15%	25%	\$0.06	222.87	337.72	7th Power Plan
Warehouse	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	New	62.49	8	\$55.10	15%	25%	\$0.07	117.45	177.13	Pacific Gas and Electric Research
Warehouse	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	New	77.23	7	\$3,400.00	15%	30%	\$3.57	189.45	292.11	AEG Research
Warehouse	Refrigeration	Refrigeration - Anti-Sweat Heater	Fridge Feet	New	64.88	8	\$48.18	0%	0%	\$0.09	0.00	0.00	7th Power Plan
Warehouse	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	New	98.16	4	\$10.44	0%	0%	\$0.02	0.00	0.00	Michigan Energy Measures Database
Warehouse	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	New	1,108.96	16	\$165.20	0%	0%	\$0.01	0.00	0.00	7th Power Plan

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Warehouse	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	New	116.68	15	\$335.85	0%	0%	\$0.23	0.00	0.00	7th Power Plan
Warehouse	Refrigeration	Refrigeration - Strip Curtain	Walkin Door	New	111.72	2	\$10.41	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Warehouse	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	New	1.83	15	\$45.43	0%	0%	\$2.01	0.00	0.00	Annual Energy Outlook, 2015
Warehouse	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	New	38.02	15	\$313.82	0%	0%	\$0.67	0.00	0.00	Annual Energy Outlook, 2015
Warehouse	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	New	732.63	10	\$506.05	0%	0%	\$0.07	0.00	0.00	Vermont TRM
Warehouse	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	New	46.02	6	\$45.41	0%	0%	\$0.16	0.00	0.00	7th Power Plan
Warehouse	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	New	3.71	8	\$3.72	0%	0%	\$0.13	0.00	0.00	7th Power Plan
Warehouse	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	New	797.01	5	\$45.85	0%	0%	\$0.01	0.00	0.00	Illinois TRM
Warehouse	Refrigeration	Grocery - ECMs for Display Cases	Fridge Case	New	190.69	16	\$165.20	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Warehouse	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	New	1,196.09	5	\$187.94	25%	75%	\$0.03	18.36	18.65	Illinois TRM
Warehouse	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	New	268.86	18	\$8,526.67	25%	50%	\$1.58	140.25	155.87	7th Power Plan
Warehouse	Office Equipment	Office Equipment - Smart Power Strips	Smart Strip	New	10.85	4	\$41.63	10%	50%	\$0.77	76.78	70.74	7th Power Plan
Warehouse	Cooling	Lodging - Guest Room Controls	LodgUnit	New	173.38	15	\$260.00	0%	0%	\$2.97	0.00	0.00	AEG-BEST
Warehouse	Heating	Lodging - Guest Room Controls	LodgUnit	New	-173.18	15	\$260.00	0%	0%	\$2.97	0.00	0.00	AEG-BEST
Warehouse	Office Equipment	Data Center - Best Practice Measures	sqft	New	0.02	5	\$0.00	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse	Cooling	Data Center - Commercially Available Measures	sqft	New	0.01	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse	Ventilation	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse	Interior Lighting	Data Center - Commercially Available Measures	sqft	New	0.01	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse	Office Equipment	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx

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Warehouse	Cooling	Data Center - Cutting Edge Measures	sqft	New	0.03	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse	Office Equipment	Data Center - Cutting Edge Measures	sqft	New	0.00	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	New	920.94	18	\$4,092.80	0%	0%	\$0.23	0.00	0.00	7th Power Plan
Warehouse	Miscellaneous	Pool Pump - Timer	perBldg	New	0.00	10	\$85.22	15%	75%	\$0.00	0.00	0.00	Ontario Power TRM
Warehouse	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	New	5,714.42	6	\$35.93	1%	3%	\$0.00	0.00	19.73	7th Power Plan
Warehouse	Cooling	Advanced New Construction Designs	sqft	New	0.58	25	\$4.11	10%	15%	\$0.09	289.49	290.82	AEG Research
Warehouse	Heating	Advanced New Construction Designs	sqft	New	1.44	25	\$4.11	10%	15%	\$0.09	770.41	762.04	AEG Research
Warehouse	Ventilation	Advanced New Construction Designs	sqft	New	0.03	25	\$4.11	10%	15%	\$0.09	101.53	112.51	AEG Research
Warehouse	Water Heating	Advanced New Construction Designs	sqft	New	0.03	25	\$4.11	10%	15%	\$0.09	31.32	38.00	AEG Research
Warehouse	Interior Lighting	Advanced New Construction Designs	sqft	New	0.36	25	\$4.11	10%	15%	\$0.09	887.33	1,038.79	AEG Research
Warehouse	Exterior Lighting	Advanced New Construction Designs	sqft	New	0.08	25	\$4.11	10%	15%	\$0.09	197.81	231.62	AEG Research
Warehouse	Cooling	Strategic Energy Management	sqft	New	0.10	3	\$0.06	3%	11%	\$0.01	7.36	7.57	AEG Research
Warehouse	Heating	Strategic Energy Management	sqft	New	0.24	3	\$0.06	3%	11%	\$0.01	19.52	19.58	AEG Research
Warehouse	Ventilation	Strategic Energy Management	sqft	New	0.01	3	\$0.06	3%	11%	\$0.01	2.47	3.02	AEG Research
Warehouse	Water Heating	Strategic Energy Management	sqft	New	0.00	3	\$0.06	3%	11%	\$0.01	0.74	1.33	AEG Research
Warehouse	Interior Lighting	Strategic Energy Management	sqft	New	0.06	3	\$0.06	3%	11%	\$0.01	22.09	34.81	AEG Research
Warehouse	Exterior Lighting	Strategic Energy Management	sqft	New	0.01	3	\$0.06	3%	11%	\$0.01	4.77	8.14	AEG Research
Warehouse	Refrigeration	Strategic Energy Management	sqft	New	0.00	3	\$0.06	3%	11%	\$0.01	1.64	1.78	AEG Research
Warehouse	Office Equipment	Strategic Energy Management	sqft	New	0.01	3	\$0.06	3%	11%	\$0.01	5.46	5.06	AEG Research
Warehouse	Cooling	Commissioning	sqft	New	0.13	3	\$0.19	11%	73%	\$0.01	78.99	81.16	AEG Research

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Warehouse	Heating	Commissioning	sqft	New	0.34	3	\$0.19	11%	73%	\$0.01	209.41	210.02	AEG Research
Warehouse	Ventilation	Commissioning	sqft	New	0.01	3	\$0.19	11%	73%	\$0.01	26.45	32.43	AEG Research
Warehouse	Water Heating	Commissioning	sqft	New	0.00	3	\$0.19	11%	73%	\$0.01	2.66	4.74	AEG Research
Warehouse	Interior Lighting	Commissioning	sqft	New	0.07	3	\$0.19	11%	73%	\$0.01	197.48	311.08	AEG Research
Warehouse	Exterior Lighting	Commissioning	sqft	New	0.01	3	\$0.19	11%	73%	\$0.01	42.64	72.75	AEG Research
Warehouse	Refrigeration	Commissioning	sqft	New	0.01	3	\$0.19	11%	73%	\$0.01	29.32	31.88	AEG Research
Warehouse	Cooling	Retrocommissioning	sqft	New	0.13	3	\$0.12	0%	0%	\$0.01	0.00	0.00	AEG Research
Warehouse	Heating	Retrocommissioning	sqft	New	0.34	3	\$0.12	0%	0%	\$0.01	0.00	0.00	AEG Research
Warehouse	Ventilation	Retrocommissioning	sqft	New	0.01	3	\$0.12	0%	0%	\$0.01	0.00	0.00	AEG Research
Warehouse	Water Heating	Retrocommissioning	sqft	New	0.00	3	\$0.12	0%	0%	\$0.01	0.00	0.00	AEG Research
Warehouse	Interior Lighting	Retrocommissioning	sqft	New	0.07	3	\$0.12	0%	0%	\$0.01	0.00	0.00	AEG Research
Warehouse	Exterior Lighting	Retrocommissioning	sqft	New	0.01	3	\$0.12	0%	0%	\$0.01	0.00	0.00	AEG Research
Warehouse	Refrigeration	Retrocommissioning	sqft	New	0.01	3	\$0.12	0%	0%	\$0.01	0.00	0.00	AEG Research
Warehouse	Interior Lighting	Fruit Storage - Lighting Controls	sqft	New	0.05	10	\$0.09	0%	0%	\$0.13	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse	Refrigeration	Fruit Storage Refrigeration Retrofit	sqft	New	0.03	10	\$1.09	0%	0%	\$3.92	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse	Refrigeration	Fruit Storage Refrigeration Tuneup	sqft	New	0.01	3	\$0.23	0%	0%	\$8.68	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse	Refrigeration	Fruit Storage Retrofit - CO2 Scrub	sqft	New	0.01	10	\$3.13	0%	0%	\$23.25	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse	Refrigeration	Fruit Storage Retrofit - Membrane	sqft	New	0.00	10	\$0.68	0%	0%	\$25.22	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse, Controlled Atm.	Cooling	Insulation - Ceiling	sqft roof	Existing	0.14	45	\$1.28	15%	35%	\$0.12	24.52	27.99	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Heating	Insulation - Ceiling	sqft roof	Existing	0.32	45	\$1.28	15%	35%	\$0.12	21.01	22.41	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Ventilation	Insulation - Ceiling	sqft roof	Existing	0.04	45	\$1.28	15%	35%	\$0.12	17.07	20.77	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Cooling	Insulation - Ducting	sqft duct	Existing	0.05	20	\$0.84	15%	50%	\$0.73	16.00	18.77	Building Energy Simulation Tool

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Warehouse, Controlled Atm.	Heating	Insulation - Ducting	sqft duct	Existing	0.01	20	\$0.84	15%	50%	\$0.73	1.51	1.63	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Ventilation	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.84	15%	50%	\$0.73	1.22	1.51	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Cooling	Building Shell - Cool Roofs	sqft roof	Existing	0.18	20	\$0.78	45%	50%	\$10.00	7.74	9.13	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Heating	Building Shell - Cool Roofs	sqft roof	Existing	-0.21	20	\$0.78	45%	50%	\$10.00	-3.39	-3.67	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Ventilation	Building Shell - Cool Roofs	sqft roof	Existing	-0.02	20	\$0.78	45%	50%	\$10.00	-2.72	-3.39	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Cooling	Insulation - Wall Cavity	sqft wall	Existing	0.01	45	\$0.78	15%	35%	\$0.02	0.42	0.46	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Heating	Insulation - Wall Cavity	sqft wall	Existing	2.39	45	\$0.78	15%	35%	\$0.02	30.99	31.68	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Ventilation	Insulation - Wall Cavity	sqft wall	Existing	0.26	45	\$0.78	15%	35%	\$0.02	23.95	28.34	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Cooling	HVAC - Duct Repair and Sealing	tonCool	Existing	9.99	18	\$0.57	15%	50%	\$0.00	6.53	6.92	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Heating	HVAC - Duct Repair and Sealing	tonCool	Existing	16.52	18	\$0.57	15%	50%	\$0.00	3.99	4.02	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Ventilation	HVAC - Duct Repair and Sealing	tonCool	Existing	1.82	18	\$0.57	15%	50%	\$0.00	3.09	3.59	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Cooling	Windows - High Efficiency Glazing	sqft window	Existing	3.66	30	\$35.93	48%	48%	\$0.09	0.00	0.00	7th Power Plan
Warehouse, Controlled Atm.	Heating	Windows - High Efficiency Glazing	sqft window	Existing	17.58	30	\$35.93	48%	48%	\$0.09	0.00	0.00	7th Power Plan
Warehouse, Controlled Atm.	Ventilation	Windows - High Efficiency Glazing	sqft window	Existing	1.17	30	\$35.93	48%	48%	\$0.09	0.00	0.00	7th Power Plan
Warehouse, Controlled Atm.	Cooling	Chiller - Chilled Water Reset	ChillCtrl	Existing	5,073.50	10	\$884.85	15%	75%	\$0.02	13.87	15.52	AEG-BEST
Warehouse, Controlled Atm.	Cooling	Chiller - Chilled Water Variable-Flow System	HP cool	Existing	198.10	15	\$332.55	15%	75%	\$0.12	74.75	85.19	AEG-BEST
Warehouse, Controlled Atm.	Cooling	Chiller - Variable Speed Fans	HP fan	Existing	733.75	15	\$208.36	15%	75%	\$0.02	27.85	31.30	New Jersey TRM
Warehouse, Controlled Atm.	Cooling	Water-Cooled Chiller - Condenser Water Reset	ChillCtrl	Existing	19,954.00	10	\$884.85	15%	75%	\$0.00	5.44	6.05	AEG-BEST
Warehouse, Controlled Atm.	Cooling	HVAC - Economizer	HP cool	Existing	98.14	10	\$168.42	18%	75%	\$0.16	80.24	93.57	AEG-BEST

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Warehouse, Controlled Atm.	Heating	Space Heating - Heat Recovery Ventilator	CFM	Existing	5.67	14	\$5.08	3%	75%	\$0.08	90.43	95.08	7th Power Plan
Warehouse, Controlled Atm.	Ventilation	Ventilation - ECM on VAV Boxes	sqft	Existing	0.12	18	\$0.25	15%	20%	\$0.13	13.63	16.33	7th Power Plan
Warehouse, Controlled Atm.	Ventilation	Ventilation - Variable Speed Control	sqft	Existing	0.01	15	\$181.39	13%	50%	\$1,096.36	9.57	12.89	AEG-BEST
Warehouse, Controlled Atm.	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.01	15	\$0.25	15%	75%	\$2.68	8.74	11.74	7th Power Plan
Warehouse, Controlled Atm.	Cooling	Destratification Fans (HVLS)	Strat Fan	Existing	2,192.30	15	\$7,270.90	15%	15%	\$0.05	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Heating	Destratification Fans (HVLS)	Strat Fan	Existing	9,021.64	15	\$7,270.90	15%	15%	\$0.05	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Cooling	RTU - Maintenance	tonCool	Existing	44.47	3	\$35.00	15%	45%	\$0.19	13.12	15.94	AEG Research
Warehouse, Controlled Atm.	Cooling	RTU - Advanced Controls	sqft	Existing	0.05	15	\$0.07	15%	45%	\$0.10	6.71	7.29	7th Power Plan
Warehouse, Controlled Atm.	Cooling	RTU - Evaporative Precooler	tonCool	Existing	86.91	15	\$681.62	15%	75%	\$0.53	44.73	49.62	AEG Research
Warehouse, Controlled Atm.	Cooling	Ductless Mini Split Heat Pump	tonCool	Existing	201.21	15	\$3,359.26	15%	25%	\$0.38	1.09	1.37	7th Power Plan
Warehouse, Controlled Atm.	Heating	Ductless Mini Split Heat Pump	tonCool	Existing	431.47	15	\$3,359.26	15%	25%	\$0.38	22.17	24.18	7th Power Plan
Warehouse, Controlled Atm.	Cooling	Thermostat - WiFi/Interactive	sqft	Existing	0.28	5	\$0.66	30%	40%	\$0.11	24.81	28.09	7th Power Plan
Warehouse, Controlled Atm.	Heating	Thermostat - WiFi/Interactive	sqft	Existing	0.64	5	\$0.66	30%	40%	\$0.11	21.26	22.49	7th Power Plan
Warehouse, Controlled Atm.	Ventilation	Thermostat - WiFi/Interactive	sqft	Existing	0.07	5	\$0.66	30%	40%	\$0.11	17.27	20.84	7th Power Plan
Warehouse, Controlled Atm.	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	Existing	77.11	10	\$8.35	25%	65%	\$0.01	3.29	5.85	Illinois TRM
Warehouse, Controlled Atm.	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	Existing	79.67	10	\$11.64	25%	65%	\$0.01	1.69	3.04	7th Power Plan
Warehouse, Controlled Atm.	Water Heating	Water Heater - High Efficiency Circulation Pump	WHUnits	Existing	57.09	15	\$36.75	15%	75%	\$0.03	2.68	4.21	Hawaii TRM
Warehouse, Controlled Atm.	Water Heating	Water Heater - Pipe Insulation	PipeFeet	Existing	238.16	15	\$14.88	16%	75%	\$0.00	6.24	10.67	AEG-BEST
Warehouse, Controlled Atm.	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	Existing	49.55	4	\$144.04	25%	65%	\$0.37	1.99	3.78	7th Power Plan

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Warehouse, Controlled Atm.	Water Heating	Water Heater - Thermostat Setback	WHunits	Existing	57.92	2	\$5.00	15%	75%	\$0.02	2.96	5.48	Illinois TRM
Warehouse, Controlled Atm.	Water Heating	Water Heater - Solar System	PipeFeet	Existing	805.01	20	\$215.28	1%	30%	\$0.01	10.16	17.97	AEG-BEST
Warehouse, Controlled Atm.	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.21	15	\$0.35	13%	38%	\$0.10	152.65	195.15	7th Power Plan
Warehouse, Controlled Atm.	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.29	15	\$0.58	13%	38%	\$0.12	203.24	267.40	7th Power Plan
Warehouse, Controlled Atm.	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	Existing	613.12	15	\$54.41	1%	3%	\$0.01	3.41	5.01	7th Power Plan
Warehouse, Controlled Atm.	Interior Lighting	Interior Lighting - Timeclocks and Timers	occ sens	Existing	0.00	8	\$111.67	7%	15%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Warehouse, Controlled Atm.	Interior Lighting	Interior Lighting - Skylights	1000 sqft	Existing	0.00	15	\$1,006.35	15%	30%	\$0.00	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	1000 sqft	Existing	32.94	16	\$1,807.69	5%	15%	\$3.05	7.00	11.38	7th Power Plan
Warehouse, Controlled Atm.	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	Existing	319.99	11	\$30.80	15%	50%	\$0.01	25.80	36.88	Illinois TRM
Warehouse, Controlled Atm.	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	ELtg Watts	Existing	1.73	8	\$0.63	15%	25%	\$0.03	32.93	51.82	7th Power Plan
Warehouse, Controlled Atm.	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	Existing	72.51	8	\$55.10	15%	25%	\$0.07	16.66	26.99	Pacific Gas and Electric Research
Warehouse, Controlled Atm.	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	Existing	88.76	7	\$3,400.00	15%	30%	\$3.60	30.34	50.02	AEG Research
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Anti-Sweat Heater	Fridge Feet	Existing	576.80	8	\$48.18	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	Existing	12,957.53	4	\$10.44	0%	0%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	Existing	85,891.39	16	\$165.20	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	Existing	2,658.34	15	\$335.85	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Strip Curtain	Walkin Door	Existing	1,420.15	2	\$10.41	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBtuh	Existing	39.35	15	\$45.43	0%	0%	\$0.09	0.00	0.00	Annual Energy Outlook, 2015
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	Existing	815.76	15	\$313.82	0%	0%	\$0.03	0.00	0.00	Annual Energy Outlook, 2015

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Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	Existing	57,690.93	10	\$506.05	0%	0%	\$0.00	0.00	0.00	Vermont TRM
Warehouse, Controlled Atm.	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	Existing	327.42	6	\$45.41	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Warehouse, Controlled Atm.	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	Existing	26.38	8	\$3.72	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Warehouse, Controlled Atm.	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	Existing	5,764.10	5	\$45.85	0%	0%	\$0.00	0.00	0.00	Illinois TRM
Warehouse, Controlled Atm.	Refrigeration	Grocery - ECMs for Display Cases	Fridge Case	Existing	1,432.80	16	\$165.20	5%	25%	\$0.01	4.18	4.74	7th Power Plan
Warehouse, Controlled Atm.	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	Existing	1,195.37	5	\$187.94	25%	75%	\$0.03	218.40	235.33	Illinois TRM
Warehouse, Controlled Atm.	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	Existing	961.75	18	\$8,526.67	25%	50%	\$0.52	22.43	27.53	7th Power Plan
Warehouse, Controlled Atm.	Office Equipment	Office Equipment - Smart Power Strips	Smart Strip	Existing	6.73	4	\$41.63	10%	50%	\$1.24	16.22	14.42	7th Power Plan
Warehouse, Controlled Atm.	Cooling	Lodging - Guest Room Controls	LodgUnit	Existing	96.80	15	\$260.00	0%	0%	\$10.00	0.00	0.00	AEG-BEST
Warehouse, Controlled Atm.	Heating	Lodging - Guest Room Controls	LodgUnit	Existing	-125.37	15	\$260.00	0%	0%	\$10.00	0.00	0.00	AEG-BEST
Warehouse, Controlled Atm.	Office Equipment	Data Center - Best Practice Measures	sqft	Existing	0.01	5	\$0.00	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse, Controlled Atm.	Cooling	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse, Controlled Atm.	Ventilation	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse, Controlled Atm.	Interior Lighting	Data Center - Commercially Available Measures	sqft	Existing	0.02	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse, Controlled Atm.	Office Equipment	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse, Controlled Atm.	Cooling	Data Center - Cutting Edge Measures	sqft	Existing	0.03	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse, Controlled Atm.	Office Equipment	Data Center - Cutting Edge Measures	sqft	Existing	0.00	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse, Controlled Atm.	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	Existing	3,312.11	18	\$4,092.80	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Warehouse, Controlled Atm.	Miscellaneous	Pool Pump - Timer	perBldg	Existing	0.00	10	\$85.22	15%	75%	\$0.00	0.00	0.00	Ontario Power TRM

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Warehouse, Controlled Atm.	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	Existing	23,155.23	6	\$35.93	1%	3%	\$0.00	0.00	25.33	7th Power Plan
Warehouse, Controlled Atm.	Cooling	Advanced New Construction Designs	sqft	Existing	0.41	25	\$4.11	0%	0%	\$0.10	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Heating	Advanced New Construction Designs	sqft	Existing	1.12	25	\$4.11	0%	0%	\$0.10	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Ventilation	Advanced New Construction Designs	sqft	Existing	0.11	25	\$4.11	0%	0%	\$0.10	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Water Heating	Advanced New Construction Designs	sqft	Existing	0.06	25	\$4.11	0%	0%	\$0.10	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Interior Lighting	Advanced New Construction Designs	sqft	Existing	0.43	25	\$4.11	0%	0%	\$0.10	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Exterior Lighting	Advanced New Construction Designs	sqft	Existing	0.10	25	\$4.11	0%	0%	\$0.10	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Cooling	Strategic Energy Management	sqft	Existing	0.09	3	\$0.30	3%	11%	\$0.02	6.92	7.85	AEG Research
Warehouse, Controlled Atm.	Heating	Strategic Energy Management	sqft	Existing	0.18	3	\$0.30	3%	11%	\$0.02	5.36	5.84	AEG Research
Warehouse, Controlled Atm.	Ventilation	Strategic Energy Management	sqft	Existing	0.02	3	\$0.30	3%	11%	\$0.02	4.41	5.63	AEG Research
Warehouse, Controlled Atm.	Water Heating	Strategic Energy Management	sqft	Existing	0.01	3	\$0.30	3%	11%	\$0.02	0.60	1.13	AEG Research
Warehouse, Controlled Atm.	Interior Lighting	Strategic Energy Management	sqft	Existing	0.07	3	\$0.30	3%	11%	\$0.02	11.84	17.62	AEG Research
Warehouse, Controlled Atm.	Exterior Lighting	Strategic Energy Management	sqft	Existing	0.01	3	\$0.30	3%	11%	\$0.02	2.41	3.97	AEG Research
Warehouse, Controlled Atm.	Refrigeration	Strategic Energy Management	sqft	Existing	0.50	3	\$0.30	3%	11%	\$0.02	93.71	119.00	AEG Research
Warehouse, Controlled Atm.	Office Equipment	Strategic Energy Management	sqft	Existing	0.01	3	\$0.30	3%	11%	\$0.02	1.83	1.63	AEG Research
Warehouse, Controlled Atm.	Cooling	Commissioning	sqft	Existing	0.12	3	\$0.18	0%	0%	\$0.00	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Heating	Commissioning	sqft	Existing	0.27	3	\$0.18	0%	0%	\$0.00	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Ventilation	Commissioning	sqft	Existing	0.03	3	\$0.18	0%	0%	\$0.00	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Water Heating	Commissioning	sqft	Existing	0.00	3	\$0.18	0%	0%	\$0.00	0.00	0.00	AEG Research

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Warehouse, Controlled Atm.	Interior Lighting	Commissioning	sqft	Existing	0.08	3	\$0.18	0%	0%	\$0.00	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Exterior Lighting	Commissioning	sqft	Existing	0.02	3	\$0.18	0%	0%	\$0.00	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Refrigeration	Commissioning	sqft	Existing	1.24	3	\$0.18	0%	0%	\$0.00	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Cooling	Retrocommissioning	sqft	Existing	0.13	3	\$0.11	11%	73%	\$0.00	79.23	86.54	AEG Research
Warehouse, Controlled Atm.	Heating	Retrocommissioning	sqft	Existing	0.28	3	\$0.11	11%	73%	\$0.00	65.13	65.86	AEG Research
Warehouse, Controlled Atm.	Ventilation	Retrocommissioning	sqft	Existing	0.03	3	\$0.11	11%	73%	\$0.00	50.33	61.77	AEG Research
Warehouse, Controlled Atm.	Water Heating	Retrocommissioning	sqft	Existing	0.00	3	\$0.11	11%	73%	\$0.00	2.24	4.11	AEG Research
Warehouse, Controlled Atm.	Interior Lighting	Retrocommissioning	sqft	Existing	0.08	3	\$0.11	11%	73%	\$0.00	109.55	159.86	AEG Research
Warehouse, Controlled Atm.	Exterior Lighting	Retrocommissioning	sqft	Existing	0.02	3	\$0.11	11%	73%	\$0.00	24.06	37.09	AEG Research
Warehouse, Controlled Atm.	Refrigeration	Retrocommissioning	sqft	Existing	1.24	3	\$0.11	11%	73%	\$0.00	1,813.50	2,197.87	AEG Research
Warehouse, Controlled Atm.	Interior Lighting	Fruit Storage - Lighting Controls	sqft	Existing	0.05	10	\$0.09	0%	0%	\$0.13	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse, Controlled Atm.	Refrigeration	Fruit Storage Refrigeration Retrofit	sqft	Existing	3.60	10	\$1.09	0%	0%	\$0.03	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse, Controlled Atm.	Refrigeration	Fruit Storage Refrigeration Tuneup	sqft	Existing	0.93	3	\$0.23	0%	0%	\$0.07	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse, Controlled Atm.	Refrigeration	Fruit Storage Retrofit - CO2 Scrub	sqft	Existing	1.74	10	\$3.13	0%	0%	\$0.18	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse, Controlled Atm.	Refrigeration	Fruit Storage Retrofit - Membrane	sqft	Existing	0.35	10	\$0.68	0%	0%	\$0.20	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse, Controlled Atm.	Cooling	Insulation - Ceiling	sqft roof	New	0.00	45	\$1.28	15%	50%	\$0.18	0.00	0.00	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Heating	Insulation - Ceiling	sqft roof	New	0.33	45	\$1.28	15%	50%	\$0.18	19.46	19.39	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Ventilation	Insulation - Ceiling	sqft roof	New	0.03	45	\$1.28	15%	50%	\$0.18	12.85	14.11	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Cooling	Insulation - Ducting	sqft duct	New	0.07	20	\$0.84	15%	50%	\$0.55	11.91	12.24	Building Energy Simulation Tool

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Warehouse, Controlled Atm.	Heating	Insulation - Ducting	sqft duct	New	0.02	20	\$0.84	15%	50%	\$0.55	1.09	1.09	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Ventilation	Insulation - Ducting	sqft duct	New	0.00	20	\$0.84	15%	50%	\$0.55	0.71	0.79	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Cooling	Building Shell - Cool Roofs	sqft roof	New	0.15	20	\$0.78	45%	50%	\$10.00	3.59	3.70	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Heating	Building Shell - Cool Roofs	sqft roof	New	-0.22	20	\$0.78	45%	50%	\$10.00	-1.80	-1.81	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Ventilation	Building Shell - Cool Roofs	sqft roof	New	-0.02	20	\$0.78	45%	50%	\$10.00	-1.18	-1.31	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Cooling	Insulation - Wall Cavity	sqft wall	New	-0.01	45	\$0.78	15%	50%	\$0.12	-0.27	-0.28	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Heating	Insulation - Wall Cavity	sqft wall	New	0.34	45	\$0.78	15%	50%	\$0.12	3.80	3.80	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Ventilation	Insulation - Wall Cavity	sqft wall	New	0.03	45	\$0.78	15%	50%	\$0.12	2.49	2.73	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Cooling	HVAC - Duct Repair and Sealing	tonCool	New	14.55	18	\$0.57	15%	50%	\$0.00	4.50	4.63	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Heating	HVAC - Duct Repair and Sealing	tonCool	New	13.57	18	\$0.57	15%	50%	\$0.00	1.49	1.49	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Ventilation	HVAC - Duct Repair and Sealing	tonCool	New	1.07	18	\$0.57	15%	50%	\$0.00	0.97	1.08	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Cooling	Windows - High Efficiency Glazing	sqft window	New	3.09	30	\$35.93	66%	66%	\$0.09	0.00	0.00	7th Power Plan
Warehouse, Controlled Atm.	Heating	Windows - High Efficiency Glazing	sqft window	New	18.26	30	\$35.93	66%	66%	\$0.09	0.00	0.00	7th Power Plan
Warehouse, Controlled Atm.	Ventilation	Windows - High Efficiency Glazing	sqft window	New	0.84	30	\$35.93	66%	66%	\$0.09	0.00	0.00	7th Power Plan
Warehouse, Controlled Atm.	Cooling	Chiller - Chilled Water Reset	ChillCtrl	New	4,044.76	10	\$884.85	15%	75%	\$0.02	2.49	2.65	AEG-BEST
Warehouse, Controlled Atm.	Cooling	Chiller - Chilled Water Variable-Flow System	HP cool	New	159.92	15	\$332.55	15%	75%	\$0.15	17.38	18.32	AEG-BEST
Warehouse, Controlled Atm.	Cooling	Chiller - Variable Speed Fans	HP fan	New	586.95	15	\$208.36	15%	75%	\$0.03	6.37	6.71	New Jersey TRM
Warehouse, Controlled Atm.	Cooling	Water-Cooled Chiller - Condenser Water Reset	ChillCtrl	New	19,374.37	10	\$884.85	15%	75%	\$0.00	1.19	1.27	AEG-BEST
Warehouse, Controlled Atm.	Cooling	HVAC - Economizer	HP cool	New	81.15	10	\$168.42	18%	75%	\$0.19	15.23	16.14	AEG-BEST

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Warehouse, Controlled Atm.	Heating	Space Heating - Heat Recovery Ventilator	CFM	New	5.71	14	\$5.08	6%	75%	\$0.08	23.40	23.40	7th Power Plan
Warehouse, Controlled Atm.	Ventilation	Ventilation - ECM on VAV Boxes	sqft	New	0.10	18	\$0.25	15%	20%	\$0.13	6.25	6.89	7th Power Plan
Warehouse, Controlled Atm.	Ventilation	Ventilation - Variable Speed Control	sqft	New	0.01	15	\$181.39	19%	50%	\$1,130.09	2.23	2.66	AEG-BEST
Warehouse, Controlled Atm.	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.25	15%	75%	\$2.77	2.44	2.91	7th Power Plan
Warehouse, Controlled Atm.	Cooling	Destratification Fans (HVLS)	Strat Fan	New	1,770.75	15	\$7,270.90	15%	15%	\$0.05	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Heating	Destratification Fans (HVLS)	Strat Fan	New	9,369.46	15	\$7,270.90	15%	15%	\$0.05	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Cooling	RTU - Maintenance	tonCool	New	51.53	3	\$35.00	15%	45%	\$0.17	1.08	1.20	AEG Research
Warehouse, Controlled Atm.	Cooling	RTU - Advanced Controls	sqft	New	0.05	15	\$0.07	15%	45%	\$0.09	3.44	3.56	7th Power Plan
Warehouse, Controlled Atm.	Cooling	RTU - Evaporative Precooler	tonCool	New	101.03	15	\$681.62	15%	75%	\$0.47	30.85	31.34	AEG Research
Warehouse, Controlled Atm.	Cooling	Ductless Mini Split Heat Pump	tonCool	New	259.77	15	\$3,359.26	15%	25%	\$0.35	0.54	0.57	7th Power Plan
Warehouse, Controlled Atm.	Heating	Ductless Mini Split Heat Pump	tonCool	New	461.81	15	\$3,359.26	15%	25%	\$0.35	8.37	8.42	7th Power Plan
Warehouse, Controlled Atm.	Cooling	Thermostat - WiFi/Interactive	sqft	New	0.23	5	\$0.66	30%	40%	\$0.12	1.27	1.36	7th Power Plan
Warehouse, Controlled Atm.	Heating	Thermostat - WiFi/Interactive	sqft	New	0.66	5	\$0.66	30%	40%	\$0.12	1.26	1.26	7th Power Plan
Warehouse, Controlled Atm.	Ventilation	Thermostat - WiFi/Interactive	sqft	New	0.05	5	\$0.66	30%	40%	\$0.12	0.83	1.01	7th Power Plan
Warehouse, Controlled Atm.	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	New	62.86	10	\$8.35	25%	65%	\$0.01	0.61	0.98	Illinois TRM
Warehouse, Controlled Atm.	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	New	65.32	10	\$11.64	25%	65%	\$0.01	0.32	0.51	7th Power Plan
Warehouse, Controlled Atm.	Water Heating	Water Heater - High Efficiency Circulation Pump	WHUnits	New	48.92	15	\$36.75	15%	75%	\$0.03	1.15	1.46	Hawaii TRM
Warehouse, Controlled Atm.	Water Heating	Water Heater - Pipe Insulation	PipeFeet	New	192.41	15	\$14.88	1%	75%	\$0.00	2.08	3.09	AEG-BEST
Warehouse, Controlled Atm.	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	New	42.67	4	\$144.04	25%	65%	\$0.36	0.17	0.29	7th Power Plan

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Warehouse, Controlled Atm.	Water Heating	Water Heater - Thermostat Setback	WHunits	New	49.12	2	\$5.00	15%	75%	\$0.02	0.09	0.16	Illinois TRM
Warehouse, Controlled Atm.	Water Heating	Water Heater - Solar System	PipeFeet	New	662.70	20	\$215.28	1%	30%	\$0.01	2.90	4.27	AEG-BEST
Warehouse, Controlled Atm.	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.19	15	\$0.35	13%	38%	\$0.10	125.16	150.97	7th Power Plan
Warehouse, Controlled Atm.	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.25	15	\$0.58	13%	38%	\$0.12	168.01	205.04	7th Power Plan
Warehouse, Controlled Atm.	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	New	529.67	15	\$54.41	1%	3%	\$0.01	0.74	1.02	7th Power Plan
Warehouse, Controlled Atm.	Interior Lighting	Interior Lighting - Timeclocks and Timers	occ sens	New	0.00	8	\$111.67	7%	15%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Warehouse, Controlled Atm.	Interior Lighting	Interior Lighting - Skylights	1000 sqft	New	0.00	15	\$1,006.35	18%	33%	\$0.00	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	1000 sqft	New	26.65	16	\$1,807.69	5%	15%	\$3.21	1.83	2.54	7th Power Plan
Warehouse, Controlled Atm.	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	New	260.56	11	\$30.80	15%	50%	\$0.01	5.27	7.21	Illinois TRM
Warehouse, Controlled Atm.	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	ELtg Watts	New	1.46	8	\$0.63	15%	25%	\$0.03	5.59	8.48	7th Power Plan
Warehouse, Controlled Atm.	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	New	62.53	8	\$55.10	15%	25%	\$0.07	2.95	4.45	Pacific Gas and Electric Research
Warehouse, Controlled Atm.	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	New	77.23	7	\$3,400.00	15%	30%	\$3.57	4.75	7.33	AEG Research
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Anti-Sweat Heater	Fridge Feet	New	445.93	8	\$48.18	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	New	11,529.17	4	\$10.44	0%	0%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	New	76,470.61	16	\$165.20	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	New	2,394.97	15	\$335.85	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Strip Curtain	Walkin Door	New	1,264.51	2	\$10.41	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBtuh	New	37.12	15	\$45.43	0%	0%	\$0.10	0.00	0.00	Annual Energy Outlook, 2015
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	New	771.54	15	\$313.82	0%	0%	\$0.03	0.00	0.00	Annual Energy Outlook, 2015

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Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	New	51,363.25	10	\$506.05	0%	0%	\$0.00	0.00	0.00	Vermont TRM
Warehouse, Controlled Atm.	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	New	312.75	6	\$45.41	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Warehouse, Controlled Atm.	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	New	25.20	8	\$3.72	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Warehouse, Controlled Atm.	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	New	5,388.55	5	\$45.85	0%	0%	\$0.00	0.00	0.00	Illinois TRM
Warehouse, Controlled Atm.	Refrigeration	Grocery - ECMs for Display Cases	Fridge Case	New	1,310.68	16	\$165.20	5%	25%	\$0.01	1.33	1.38	7th Power Plan
Warehouse, Controlled Atm.	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	New	1,195.48	5	\$187.94	25%	75%	\$0.03	28.15	28.15	Illinois TRM
Warehouse, Controlled Atm.	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	New	801.17	18	\$8,526.67	25%	50%	\$0.53	10.52	11.66	7th Power Plan
Warehouse, Controlled Atm.	Office Equipment	Office Equipment - Smart Power Strips	Smart Strip	New	7.73	4	\$41.63	10%	50%	\$1.08	1.37	1.26	7th Power Plan
Warehouse, Controlled Atm.	Cooling	Lodging - Guest Room Controls	LodgUnit	New	135.52	15	\$260.00	0%	0%	\$1.83	0.00	0.00	AEG-BEST
Warehouse, Controlled Atm.	Heating	Lodging - Guest Room Controls	LodgUnit	New	-142.12	15	\$260.00	0%	0%	\$1.83	0.00	0.00	AEG-BEST
Warehouse, Controlled Atm.	Office Equipment	Data Center - Best Practice Measures	sqft	New	0.01	5	\$0.00	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse, Controlled Atm.	Cooling	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse, Controlled Atm.	Ventilation	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse, Controlled Atm.	Interior Lighting	Data Center - Commercially Available Measures	sqft	New	0.01	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse, Controlled Atm.	Office Equipment	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse, Controlled Atm.	Cooling	Data Center - Cutting Edge Measures	sqft	New	0.02	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse, Controlled Atm.	Office Equipment	Data Center - Cutting Edge Measures	sqft	New	0.00	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse, Controlled Atm.	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	New	2,733.64	18	\$4,092.80	0%	0%	\$0.08	0.00	0.00	7th Power Plan
Warehouse, Controlled Atm.	Miscellaneous	Pool Pump - Timer	perBldg	New	0.00	10	\$85.22	15%	75%	\$0.00	0.00	0.00	Ontario Power TRM

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Warehouse, Controlled Atm.	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	New	23,155.23	6	\$35.93	1%	3%	\$0.00	0.00	2.01	7th Power Plan
Warehouse, Controlled Atm.	Cooling	Advanced New Construction Designs	sqft	New	0.43	25	\$4.11	10%	15%	\$0.10	11.39	11.63	AEG Research
Warehouse, Controlled Atm.	Heating	Advanced New Construction Designs	sqft	New	1.22	25	\$4.11	10%	15%	\$0.10	11.44	11.43	AEG Research
Warehouse, Controlled Atm.	Ventilation	Advanced New Construction Designs	sqft	New	0.10	25	\$4.11	10%	15%	\$0.10	7.47	8.31	AEG Research
Warehouse, Controlled Atm.	Water Heating	Advanced New Construction Designs	sqft	New	0.05	25	\$4.11	10%	15%	\$0.10	1.34	1.62	AEG Research
Warehouse, Controlled Atm.	Interior Lighting	Advanced New Construction Designs	sqft	New	0.35	25	\$4.11	10%	15%	\$0.10	21.04	24.90	AEG Research
Warehouse, Controlled Atm.	Exterior Lighting	Advanced New Construction Designs	sqft	New	0.08	25	\$4.11	10%	15%	\$0.10	4.96	5.81	AEG Research
Warehouse, Controlled Atm.	Cooling	Strategic Energy Management	sqft	New	0.07	3	\$0.32	3%	11%	\$0.02	0.28	0.31	AEG Research
Warehouse, Controlled Atm.	Heating	Strategic Energy Management	sqft	New	0.19	3	\$0.32	3%	11%	\$0.02	0.28	0.28	AEG Research
Warehouse, Controlled Atm.	Ventilation	Strategic Energy Management	sqft	New	0.02	3	\$0.32	3%	11%	\$0.02	0.18	0.22	AEG Research
Warehouse, Controlled Atm.	Water Heating	Strategic Energy Management	sqft	New	0.01	3	\$0.32	3%	11%	\$0.02	0.03	0.06	AEG Research
Warehouse, Controlled Atm.	Interior Lighting	Strategic Energy Management	sqft	New	0.06	3	\$0.32	3%	11%	\$0.02	0.55	0.87	AEG Research
Warehouse, Controlled Atm.	Exterior Lighting	Strategic Energy Management	sqft	New	0.01	3	\$0.32	3%	11%	\$0.02	0.12	0.20	AEG Research
Warehouse, Controlled Atm.	Refrigeration	Strategic Energy Management	sqft	New	0.57	3	\$0.32	3%	11%	\$0.02	5.53	6.30	AEG Research
Warehouse, Controlled Atm.	Office Equipment	Strategic Energy Management	sqft	New	0.01	3	\$0.32	3%	11%	\$0.02	0.10	0.09	AEG Research
Warehouse, Controlled Atm.	Cooling	Commissioning	sqft	New	0.10	3	\$0.16	11%	73%	\$0.00	3.06	3.35	AEG Research
Warehouse, Controlled Atm.	Heating	Commissioning	sqft	New	0.27	3	\$0.16	11%	73%	\$0.00	3.01	3.02	AEG Research
Warehouse, Controlled Atm.	Ventilation	Commissioning	sqft	New	0.02	3	\$0.16	11%	73%	\$0.00	1.97	2.42	AEG Research
Warehouse, Controlled Atm.	Water Heating	Commissioning	sqft	New	0.00	3	\$0.16	11%	73%	\$0.00	0.12	0.21	AEG Research

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Warehouse, Controlled Atm.	Interior Lighting	Commissioning	sqft	New	0.07	3	\$0.16	11%	73%	\$0.00	4.96	7.81	AEG Research
Warehouse, Controlled Atm.	Exterior Lighting	Commissioning	sqft	New	0.01	3	\$0.16	11%	73%	\$0.00	1.07	1.83	AEG Research
Warehouse, Controlled Atm.	Refrigeration	Commissioning	sqft	New	1.34	3	\$0.16	11%	73%	\$0.00	99.36	113.99	AEG Research
Warehouse, Controlled Atm.	Cooling	Retrocommissioning	sqft	New	0.10	3	\$0.10	0%	0%	\$0.00	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Heating	Retrocommissioning	sqft	New	0.27	3	\$0.10	0%	0%	\$0.00	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Ventilation	Retrocommissioning	sqft	New	0.02	3	\$0.10	0%	0%	\$0.00	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Water Heating	Retrocommissioning	sqft	New	0.00	3	\$0.10	0%	0%	\$0.00	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Interior Lighting	Retrocommissioning	sqft	New	0.07	3	\$0.10	0%	0%	\$0.00	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Exterior Lighting	Retrocommissioning	sqft	New	0.01	3	\$0.10	0%	0%	\$0.00	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Refrigeration	Retrocommissioning	sqft	New	1.32	3	\$0.10	0%	0%	\$0.00	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Interior Lighting	Fruit Storage - Lighting Controls	sqft	New	0.04	10	\$0.09	0%	0%	\$0.13	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse, Controlled Atm.	Refrigeration	Fruit Storage Refrigeration Retrofit	sqft	New	4.08	10	\$1.09	0%	0%	\$0.03	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse, Controlled Atm.	Refrigeration	Fruit Storage Refrigeration Tuneup	sqft	New	1.06	3	\$0.23	0%	0%	\$0.06	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse, Controlled Atm.	Refrigeration	Fruit Storage Retrofit - CO2 Scrub	sqft	New	1.98	10	\$3.13	0%	0%	\$0.17	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse, Controlled Atm.	Refrigeration	Fruit Storage Retrofit - Membrane	sqft	New	0.40	10	\$0.68	0%	0%	\$0.18	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Data Center	Cooling	Insulation - Ceiling	sqft roof	Existing	2.42	45	\$1.28	15%	35%	\$0.01	415.87	454.38	Building Energy Simulation Tool
Data Center	Heating	Insulation - Ceiling	sqft roof	Existing	0.20	45	\$1.28	15%	35%	\$0.01	14.58	14.98	Building Energy Simulation Tool
Data Center	Ventilation	Insulation - Ceiling	sqft roof	Existing	1.44	45	\$1.28	15%	35%	\$0.01	255.32	308.55	Building Energy Simulation Tool
Data Center	Cooling	Insulation - Ducting	sqft duct	Existing	0.89	20	\$0.84	15%	35%	\$0.05	150.84	169.66	Building Energy Simulation Tool

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Data Center	Heating	Insulation - Ducting	sqft duct	Existing	0.01	20	\$0.84	15%	35%	\$0.05	0.61	0.63	Building Energy Simulation Tool
Data Center	Ventilation	Insulation - Ducting	sqft duct	Existing	0.06	20	\$0.84	15%	35%	\$0.05	10.55	12.90	Building Energy Simulation Tool
Data Center	Cooling	Building Shell - Cool Roofs	sqft roof	Existing	3.42	20	\$0.78	45%	50%	\$0.02	150.42	158.79	Building Energy Simulation Tool
Data Center	Heating	Building Shell - Cool Roofs	sqft roof	Existing	-0.14	20	\$0.78	45%	50%	\$0.02	-2.52	-2.54	Building Energy Simulation Tool
Data Center	Ventilation	Building Shell - Cool Roofs	sqft roof	Existing	-1.00	20	\$0.78	45%	50%	\$0.02	-45.53	-52.99	Building Energy Simulation Tool
Data Center	Cooling	Insulation - Wall Cavity	sqft wall	Existing	0.20	45	\$0.78	15%	35%	\$0.00	6.67	7.15	Building Energy Simulation Tool
Data Center	Heating	Insulation - Wall Cavity	sqft wall	Existing	1.44	45	\$0.78	15%	35%	\$0.00	20.14	20.31	Building Energy Simulation Tool
Data Center	Ventilation	Insulation - Wall Cavity	sqft wall	Existing	10.43	45	\$0.78	15%	35%	\$0.00	360.00	421.71	Building Energy Simulation Tool
Data Center	Cooling	HVAC - Duct Repair and Sealing	tonCool	Existing	31.91	18	\$0.57	15%	50%	\$0.00	98.02	104.04	Building Energy Simulation Tool
Data Center	Heating	HVAC - Duct Repair and Sealing	tonCool	Existing	1.93	18	\$0.57	15%	50%	\$0.00	2.49	2.51	Building Energy Simulation Tool
Data Center	Ventilation	HVAC - Duct Repair and Sealing	tonCool	Existing	13.96	18	\$0.57	15%	50%	\$0.00	44.49	52.04	Building Energy Simulation Tool
Data Center	Cooling	Windows - High Efficiency Glazing	sqft window	Existing	63.13	30	\$35.93	48%	48%	\$0.02	0.00	0.00	7th Power Plan
Data Center	Heating	Windows - High Efficiency Glazing	sqft window	Existing	11.00	30	\$35.93	48%	48%	\$0.02	0.00	0.00	7th Power Plan
Data Center	Ventilation	Windows - High Efficiency Glazing	sqft window	Existing	45.41	30	\$35.93	48%	48%	\$0.02	0.00	0.00	7th Power Plan
Data Center	Cooling	Chiller - Chilled Water Reset	ChillCtrl	Existing	16,970.49	10	\$884.85	15%	75%	\$0.01	152.59	167.47	AEG-BEST
Data Center	Cooling	Chiller - Chilled Water Variable-Flow System	HP cool	Existing	667.49	15	\$332.55	15%	75%	\$0.04	830.14	923.10	AEG-BEST
Data Center	Cooling	Chiller - Variable Speed Fans	HP fan	Existing	2,458.58	15	\$208.36	15%	75%	\$0.01	307.10	338.04	New Jersey TRM
Data Center	Cooling	Water-Cooled Chiller - Condenser Water Reset	ChillCtrl	Existing	67,796.51	10	\$884.85	15%	75%	\$0.00	231.23	255.22	AEG-BEST
Data Center	Cooling	HVAC - Economizer	HP cool	Existing	328.54	10	\$168.42	18%	75%	\$0.05	1,263.67	1,453.77	AEG-BEST

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Data Center	Heating	Space Heating - Heat Recovery Ventilator	CFM	Existing	0.06	14	\$5.08	3%	75%	\$6.40	53.70	58.57	7th Power Plan
Data Center	Ventilation	Ventilation - ECM on VAV Boxes	sqft	Existing	4.65	18	\$0.25	15%	20%	\$0.00	212.87	247.39	7th Power Plan
Data Center	Ventilation	Ventilation - Variable Speed Control	sqft	Existing	0.41	15	\$181.39	13%	50%	\$28.50	139.73	187.89	AEG-BEST
Data Center	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.23	15	\$0.25	15%	75%	\$0.07	133.62	174.36	7th Power Plan
Data Center	Cooling	Destratification Fans (HVLS)	Strat Fan	Existing	36,434.86	15	\$7,270.90	15%	15%	\$0.01	0.00	0.00	AEG Research
Data Center	Heating	Destratification Fans (HVLS)	Strat Fan	Existing	5,745.66	15	\$7,270.90	15%	15%	\$0.01	0.00	0.00	AEG Research
Data Center	Cooling	RTU - Maintenance	tonCool	Existing	145.76	3	\$35.00	15%	45%	\$0.06	239.26	285.68	AEG Research
Data Center	Cooling	RTU - Advanced Controls	sqft	Existing	0.80	15	\$0.07	15%	45%	\$0.01	124.70	133.11	7th Power Plan
Data Center	Cooling	RTU - Evaporative Precooler	tonCool	Existing	288.38	15	\$681.62	15%	75%	\$0.17	834.60	913.71	AEG Research
Data Center	Cooling	Ductless Mini Split Heat Pump	tonCool	Existing	644.52	15	\$3,359.26	15%	25%	\$0.33	17.00	21.30	7th Power Plan
Data Center	Heating	Ductless Mini Split Heat Pump	tonCool	Existing	54.47	15	\$3,359.26	15%	25%	\$0.33	15.39	16.31	7th Power Plan
Data Center	Cooling	Thermostat - WiFi/Interactive	sqft	Existing	4.86	5	\$0.66	30%	40%	\$0.01	420.89	456.05	7th Power Plan
Data Center	Heating	Thermostat - WiFi/Interactive	sqft	Existing	0.40	5	\$0.66	30%	40%	\$0.01	14.76	15.04	7th Power Plan
Data Center	Ventilation	Thermostat - WiFi/Interactive	sqft	Existing	2.90	5	\$0.66	30%	40%	\$0.01	258.39	309.63	7th Power Plan
Data Center	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	Existing	132.92	10	\$8.35	25%	65%	\$0.00	2.49	4.43	Illinois TRM
Data Center	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	Existing	137.35	10	\$11.64	25%	65%	\$0.01	1.28	2.30	7th Power Plan
Data Center	Water Heating	Water Heater - High Efficiency Circulation Pump	WHUnits	Existing	57.63	15	\$36.75	15%	75%	\$0.03	2.06	3.22	Hawaii TRM
Data Center	Water Heating	Water Heater - Pipe Insulation	PipeFeet	Existing	410.56	15	\$14.88	16%	75%	\$0.00	4.73	8.09	AEG-BEST
Data Center	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	Existing	86.44	4	\$144.04	25%	65%	\$0.21	1.54	2.88	7th Power Plan
Data Center	Water Heating	Water Heater - Thermostat Setback	WHUnits	Existing	58.46	2	\$5.00	15%	75%	\$0.02	2.28	4.18	Illinois TRM
Data Center	Water Heating	Water Heater - Solar System	PipeFeet	Existing	1,387.72	20	\$215.28	1%	30%	\$0.01	7.70	13.63	AEG-BEST

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Data Center	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.75	15	\$0.35	3%	23%	\$0.03	159.91	200.82	7th Power Plan
Data Center	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	1.03	15	\$0.58	3%	23%	\$0.03	215.67	276.62	7th Power Plan
Data Center	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	Existing	2,172.12	15	\$54.41	1%	3%	\$0.00	4.56	6.76	7th Power Plan
Data Center	Interior Lighting	Interior Lighting - Timeclocks and Timers	occ sens	Existing	0.00	8	\$111.67	7%	15%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Data Center	Interior Lighting	Interior Lighting - Skylights	1000 sqft	Existing	0.00	15	\$1,006.35	15%	25%	\$0.00	0.00	0.00	AEG Research
Data Center	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	1000 sqft	Existing	472.66	16	\$1,807.69	5%	15%	\$0.22	38.84	60.66	7th Power Plan
Data Center	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	Existing	4,486.96	11	\$30.80	15%	50%	\$0.00	136.73	194.52	Illinois TRM
Data Center	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	ELtg Watts	Existing	1.95	8	\$0.63	15%	25%	\$0.03	38.51	59.54	7th Power Plan
Data Center	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	Existing	68.35	8	\$55.10	15%	25%	\$0.07	19.49	31.01	Pacific Gas and Electric Research
Data Center	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	Existing	81.82	7	\$3,400.00	15%	30%	\$3.93	34.39	56.74	AEG Research
Data Center	Refrigeration	Refrigeration - Anti-Sweat Heater	Fridge Feet	Existing	20.40	8	\$48.18	0%	0%	\$0.30	0.00	0.00	7th Power Plan
Data Center	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	Existing	29.91	4	\$10.44	0%	0%	\$0.08	0.00	0.00	Michigan Energy Measures Database
Data Center	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	Existing	194.64	16	\$165.20	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Data Center	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	Existing	23.21	15	\$335.85	0%	0%	\$1.13	0.00	0.00	7th Power Plan
Data Center	Refrigeration	Refrigeration - Strip Curtain	WalkIn Door	Existing	30.12	2	\$10.41	0%	0%	\$0.15	0.00	0.00	7th Power Plan
Data Center	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	Existing	0.36	15	\$45.43	0%	0%	\$9.71	0.00	0.00	Annual Energy Outlook, 2015
Data Center	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	Existing	7.56	15	\$313.82	0%	0%	\$3.23	0.00	0.00	Annual Energy Outlook, 2015
Data Center	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	Existing	123.88	10	\$506.05	0%	0%	\$0.42	0.00	0.00	Vermont TRM
Data Center	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	Existing	11.56	6	\$45.41	0%	0%	\$0.59	0.00	0.00	7th Power Plan

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Data Center	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	Existing	0.93	8	\$3.72	0%	0%	\$0.48	0.00	0.00	7th Power Plan
Data Center	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	Existing	203.66	5	\$45.85	0%	0%	\$0.04	0.00	0.00	Illinois TRM
Data Center	Refrigeration	Grocery - ECMs for Display Cases	Fridge Case	Existing	50.63	16	\$165.20	0%	0%	\$0.26	0.00	0.00	7th Power Plan
Data Center	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	Existing	1,257.69	5	\$187.94	25%	75%	\$0.03	0.18	0.18	Illinois TRM
Data Center	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	Existing	38,939.15	18	\$8,526.67	25%	50%	\$0.01	353.10	418.33	7th Power Plan
Data Center	Office Equipment	Office Equipment - Smart Power Strips	Smart Strip	Existing	3,170.98	4	\$41.63	10%	50%	\$0.00	3,083.93	2,482.68	7th Power Plan
Data Center	Cooling	Lodging - Guest Room Controls	LodgUnit	Existing	1,832.72	15	\$260.00	0%	0%	\$0.01	0.00	0.00	AEG-BEST
Data Center	Heating	Lodging - Guest Room Controls	LodgUnit	Existing	-85.33	15	\$260.00	0%	0%	\$0.01	0.00	0.00	AEG-BEST
Data Center	Office Equipment	Data Center - Best Practice Measures	sqft	Existing	10.80	5	\$0.91	20%	75%	\$0.01	7,400.38	7,914.96	com-datacenters-7p_v5p.xlsx
Data Center	Cooling	Data Center - Commercially Available Measures	sqft	Existing	0.08	8	\$2.26	10%	35%	\$0.09	16.62	20.34	com-datacenters-7p_v5p.xlsx
Data Center	Ventilation	Data Center - Commercially Available Measures	sqft	Existing	0.05	8	\$2.26	10%	35%	\$0.09	10.34	13.56	com-datacenters-7p_v5p.xlsx
Data Center	Interior Lighting	Data Center - Commercially Available Measures	sqft	Existing	0.05	8	\$2.26	10%	35%	\$0.09	10.69	16.50	com-datacenters-7p_v5p.xlsx
Data Center	Office Equipment	Data Center - Commercially Available Measures	sqft	Existing	2.39	8	\$2.26	10%	35%	\$0.09	731.59	815.29	com-datacenters-7p_v5p.xlsx
Data Center	Cooling	Data Center - Cutting Edge Measures	sqft	Existing	0.40	6	\$0.05	10%	15%	\$0.01	18.37	20.09	com-datacenters-7p_v5p.xlsx
Data Center	Office Equipment	Data Center - Cutting Edge Measures	sqft	Existing	0.87	6	\$0.05	10%	15%	\$0.01	53.95	57.68	com-datacenters-7p_v5p.xlsx
Data Center	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	Existing	133,229.99	18	\$4,092.80	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Data Center	Miscellaneous	Pool Pump - Timer	perBldg	Existing	0.00	10	\$85.22	15%	75%	\$0.00	0.00	0.00	Ontario Power TRM
Data Center	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	Existing	226,513.70	6	\$35.93	1%	3%	\$0.00	0.00	93.76	7th Power Plan
Data Center	Cooling	Advanced New Construction Designs	sqft	Existing	6.95	25	\$4.11	0%	0%	\$0.02	0.00	0.00	AEG Research

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Data Center	Heating	Advanced New Construction Designs	sqft	Existing	0.69	25	\$4.11	0%	0%	\$0.02	0.00	0.00	AEG Research
Data Center	Ventilation	Advanced New Construction Designs	sqft	Existing	4.24	25	\$4.11	0%	0%	\$0.02	0.00	0.00	AEG Research
Data Center	Water Heating	Advanced New Construction Designs	sqft	Existing	0.10	25	\$4.11	0%	0%	\$0.02	0.00	0.00	AEG Research
Data Center	Interior Lighting	Advanced New Construction Designs	sqft	Existing	1.68	25	\$4.11	0%	0%	\$0.02	0.00	0.00	AEG Research
Data Center	Exterior Lighting	Advanced New Construction Designs	sqft	Existing	0.30	25	\$4.11	0%	0%	\$0.02	0.00	0.00	AEG Research
Data Center	Cooling	Strategic Energy Management	sqft	Existing	1.26	3	\$9.42	0%	0%	\$0.10	0.00	0.00	AEG Research
Data Center	Heating	Strategic Energy Management	sqft	Existing	0.11	3	\$9.42	0%	0%	\$0.10	0.00	0.00	AEG Research
Data Center	Ventilation	Strategic Energy Management	sqft	Existing	0.80	3	\$9.42	0%	0%	\$0.10	0.00	0.00	AEG Research
Data Center	Water Heating	Strategic Energy Management	sqft	Existing	0.02	3	\$9.42	0%	0%	\$0.10	0.00	0.00	AEG Research
Data Center	Interior Lighting	Strategic Energy Management	sqft	Existing	0.22	3	\$9.42	0%	0%	\$0.10	0.00	0.00	AEG Research
Data Center	Exterior Lighting	Strategic Energy Management	sqft	Existing	0.04	3	\$9.42	0%	0%	\$0.10	0.00	0.00	AEG Research
Data Center	Refrigeration	Strategic Energy Management	sqft	Existing	0.00	3	\$9.42	0%	0%	\$0.10	0.00	0.00	AEG Research
Data Center	Office Equipment	Strategic Energy Management	sqft	Existing	3.20	3	\$9.42	0%	0%	\$0.10	0.00	0.00	AEG Research
Data Center	Cooling	Commissioning	sqft	Existing	1.74	3	\$9.30	0%	0%	\$0.08	0.00	0.00	AEG Research
Data Center	Heating	Commissioning	sqft	Existing	0.15	3	\$9.30	0%	0%	\$0.08	0.00	0.00	AEG Research
Data Center	Ventilation	Commissioning	sqft	Existing	1.10	3	\$9.30	0%	0%	\$0.08	0.00	0.00	AEG Research
Data Center	Water Heating	Commissioning	sqft	Existing	0.01	3	\$9.30	0%	0%	\$0.08	0.00	0.00	AEG Research
Data Center	Interior Lighting	Commissioning	sqft	Existing	0.26	3	\$9.30	0%	0%	\$0.08	0.00	0.00	AEG Research
Data Center	Exterior Lighting	Commissioning	sqft	Existing	0.05	3	\$9.30	0%	0%	\$0.08	0.00	0.00	AEG Research
Data Center	Refrigeration	Commissioning	sqft	Existing	0.00	3	\$9.30	0%	0%	\$0.08	0.00	0.00	AEG Research
Data Center	Cooling	Retrocommissioning	sqft	Existing	1.80	3	\$5.91	2%	65%	\$0.08	1,015.98	1,250.44	AEG Research
Data Center	Heating	Retrocommissioning	sqft	Existing	0.16	3	\$5.91	2%	65%	\$0.08	39.20	41.25	AEG Research

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Data Center	Ventilation	Retrocommissioning	sqft	Existing	1.14	3	\$5.91	2%	65%	\$0.08	680.87	893.07	AEG Research
Data Center	Water Heating	Retrocommissioning	sqft	Existing	0.01	3	\$5.91	2%	65%	\$0.08	1.65	3.12	AEG Research
Data Center	Interior Lighting	Retrocommissioning	sqft	Existing	0.26	3	\$5.91	2%	65%	\$0.08	135.80	215.25	AEG Research
Data Center	Exterior Lighting	Retrocommissioning	sqft	Existing	0.05	3	\$5.91	2%	65%	\$0.08	25.62	41.40	AEG Research
Data Center	Refrigeration	Retrocommissioning	sqft	Existing	0.00	3	\$5.91	2%	65%	\$0.08	0.80	0.95	AEG Research
Data Center	Interior Lighting	Fruit Storage - Lighting Controls	sqft	Existing	0.19	10	\$0.09	0%	0%	\$0.04	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Data Center	Refrigeration	Fruit Storage Refrigeration Retrofit	sqft	Existing	0.00	10	\$1.09	0%	0%	\$27.12	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Data Center	Refrigeration	Fruit Storage Refrigeration Tuneup	sqft	Existing	0.00	3	\$0.23	0%	0%	\$60.06	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Data Center	Refrigeration	Fruit Storage Retrofit - CO2 Scrub	sqft	Existing	0.00	10	\$3.13	0%	0%	\$160.82	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Data Center	Refrigeration	Fruit Storage Retrofit - Membrane	sqft	Existing	0.00	10	\$0.68	0%	0%	\$174.51	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Data Center	Cooling	Insulation - Ceiling	sqft roof	New	0.00	45	\$1.28	15%	50%	\$0.04	0.00	0.00	Building Energy Simulation Tool
Data Center	Heating	Insulation - Ceiling	sqft roof	New	0.19	45	\$1.28	15%	50%	\$0.04	12.36	12.38	Building Energy Simulation Tool
Data Center	Ventilation	Insulation - Ceiling	sqft roof	New	1.01	45	\$1.28	15%	50%	\$0.04	185.31	204.23	Building Energy Simulation Tool
Data Center	Cooling	Insulation - Ducting	sqft duct	New	1.19	20	\$0.84	15%	50%	\$0.04	181.57	184.96	Building Energy Simulation Tool
Data Center	Heating	Insulation - Ducting	sqft duct	New	0.01	20	\$0.84	15%	50%	\$0.04	0.69	0.70	Building Energy Simulation Tool
Data Center	Ventilation	Insulation - Ducting	sqft duct	New	0.06	20	\$0.84	15%	50%	\$0.04	10.40	11.54	Building Energy Simulation Tool
Data Center	Cooling	Building Shell - Cool Roofs	sqft roof	New	2.66	20	\$0.78	45%	50%	\$0.03	57.40	58.69	Building Energy Simulation Tool
Data Center	Heating	Building Shell - Cool Roofs	sqft roof	New	-0.13	20	\$0.78	45%	50%	\$0.03	-1.18	-1.18	Building Energy Simulation Tool
Data Center	Ventilation	Building Shell - Cool Roofs	sqft roof	New	-0.69	20	\$0.78	45%	50%	\$0.03	-18.04	-19.79	Building Energy Simulation Tool
Data Center	Cooling	Insulation - Wall Cavity	sqft wall	New	-0.14	45	\$0.78	15%	50%	\$0.03	-4.08	-4.17	Building Energy Simulation Tool

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Data Center	Heating	Insulation - Wall Cavity	sqft wall	New	0.19	45	\$0.78	15%	50%	\$0.03	2.37	2.37	Building Energy Simulation Tool
Data Center	Ventilation	Insulation - Wall Cavity	sqft wall	New	1.04	45	\$0.78	15%	50%	\$0.03	36.22	39.72	Building Energy Simulation Tool
Data Center	Cooling	HVAC - Duct Repair and Sealing	tonCool	New	46.84	18	\$0.57	15%	35%	\$0.00	38.18	39.12	Building Energy Simulation Tool
Data Center	Heating	HVAC - Duct Repair and Sealing	tonCool	New	1.53	18	\$0.57	15%	35%	\$0.00	0.53	0.53	Building Energy Simulation Tool
Data Center	Ventilation	HVAC - Duct Repair and Sealing	tonCool	New	8.22	18	\$0.57	15%	35%	\$0.00	8.12	8.95	Building Energy Simulation Tool
Data Center	Cooling	Windows - High Efficiency Glazing	sqft window	New	50.92	30	\$35.93	66%	66%	\$0.02	0.00	0.00	7th Power Plan
Data Center	Heating	Windows - High Efficiency Glazing	sqft window	New	10.56	30	\$35.93	66%	66%	\$0.02	0.00	0.00	7th Power Plan
Data Center	Ventilation	Windows - High Efficiency Glazing	sqft window	New	32.35	30	\$35.93	66%	66%	\$0.02	0.00	0.00	7th Power Plan
Data Center	Cooling	Chiller - Chilled Water Reset	ChillCtrl	New	13,214.75	10	\$884.85	15%	75%	\$0.01	26.84	28.38	AEG-BEST
Data Center	Cooling	Chiller - Chilled Water Variable-Flow System	HP cool	New	524.79	15	\$332.55	15%	75%	\$0.05	187.81	196.97	AEG-BEST
Data Center	Cooling	Chiller - Variable Speed Fans	HP fan	New	1,918.93	15	\$208.36	15%	75%	\$0.01	68.60	71.98	New Jersey TRM
Data Center	Cooling	Water-Cooled Chiller - Condenser Water Reset	ChillCtrl	New	66,077.85	10	\$884.85	15%	75%	\$0.00	57.12	60.36	AEG-BEST
Data Center	Cooling	HVAC - Economizer	HP cool	New	267.57	10	\$168.42	18%	75%	\$0.06	231.02	243.32	AEG-BEST
Data Center	Heating	Space Heating - Heat Recovery Ventilator	CFM	New	0.06	14	\$5.08	6%	75%	\$6.82	14.20	14.42	7th Power Plan
Data Center	Ventilation	Ventilation - ECM on VAV Boxes	sqft	New	3.70	18	\$0.25	15%	20%	\$0.00	91.30	100.71	7th Power Plan
Data Center	Ventilation	Ventilation - Variable Speed Control	sqft	New	0.34	15	\$181.39	19%	50%	\$29.37	32.52	38.77	AEG-BEST
Data Center	Ventilation	Ventilation - Demand Controlled	sqft	New	0.19	15	\$0.25	15%	75%	\$0.07	36.39	42.93	7th Power Plan
Data Center	Cooling	Destratification Fans (HVLS)	Strat Fan	New	28,678.21	15	\$7,270.90	15%	15%	\$0.02	0.00	0.00	AEG Research
Data Center	Heating	Destratification Fans (HVLS)	Strat Fan	New	5,431.30	15	\$7,270.90	15%	15%	\$0.02	0.00	0.00	AEG Research
Data Center	Cooling	RTU - Maintenance	tonCool	New	166.83	3	\$35.00	15%	45%	\$0.05	18.24	19.95	AEG Research
Data Center	Cooling	RTU - Advanced Controls	sqft	New	0.87	15	\$0.07	15%	45%	\$0.01	58.01	59.75	7th Power Plan

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Data Center	Cooling	RTU - Evaporative Precooler	tonCool	New	324.62	15	\$681.62	15%	75%	\$0.15	511.01	520.06	AEG Research
Data Center	Cooling	Ductless Mini Split Heat Pump	tonCool	New	831.16	15	\$3,359.26	15%	25%	\$0.26	7.91	8.34	7th Power Plan
Data Center	Heating	Ductless Mini Split Heat Pump	tonCool	New	56.44	15	\$3,359.26	15%	25%	\$0.26	5.52	5.60	7th Power Plan
Data Center	Cooling	Thermostat - WiFi/Interactive	sqft	New	3.87	5	\$0.66	30%	40%	\$0.02	19.13	20.53	7th Power Plan
Data Center	Heating	Thermostat - WiFi/Interactive	sqft	New	0.38	5	\$0.66	30%	40%	\$0.02	0.80	0.81	7th Power Plan
Data Center	Ventilation	Thermostat - WiFi/Interactive	sqft	New	2.04	5	\$0.66	30%	40%	\$0.02	12.06	14.75	7th Power Plan
Data Center	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	New	108.36	10	\$8.35	25%	65%	\$0.00	0.46	0.74	Illinois TRM
Data Center	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	New	112.86	10	\$11.64	25%	65%	\$0.01	0.24	0.39	7th Power Plan
Data Center	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	New	49.03	15	\$36.75	15%	75%	\$0.03	0.87	1.11	Hawaii TRM
Data Center	Water Heating	Water Heater - Pipe Insulation	PipeFeet	New	331.68	15	\$14.88	1%	75%	\$0.00	1.58	2.35	AEG-BEST
Data Center	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	New	73.46	4	\$144.04	25%	65%	\$0.21	0.13	0.22	7th Power Plan
Data Center	Water Heating	Water Heater - Thermostat Setback	WHunits	New	49.24	2	\$5.00	15%	75%	\$0.02	0.07	0.12	Illinois TRM
Data Center	Water Heating	Water Heater - Solar System	PipeFeet	New	1,145.02	20	\$215.28	1%	30%	\$0.01	2.20	3.24	AEG-BEST
Data Center	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.70	15	\$0.35	11%	23%	\$0.03	79.46	94.29	7th Power Plan
Data Center	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.96	15	\$0.58	11%	23%	\$0.03	109.24	130.27	7th Power Plan
Data Center	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	New	2,020.24	15	\$54.41	1%	3%	\$0.00	1.06	1.44	7th Power Plan
Data Center	Interior Lighting	Interior Lighting - Timeclocks and Timers	occ sens	New	0.00	8	\$111.67	7%	15%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Data Center	Interior Lighting	Interior Lighting - Skylights	1000 sqft	New	0.00	15	\$1,006.35	18%	25%	\$0.00	0.00	0.00	AEG Research
Data Center	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	1000 sqft	New	407.09	16	\$1,807.69	5%	15%	\$0.23	10.74	14.14	7th Power Plan

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Data Center	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	New	3,831.19	11	\$30.80	15%	50%	\$0.00	29.35	38.87	Illinois TRM
Data Center	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	ELtg Watts	New	1.61	8	\$0.63	15%	25%	\$0.03	6.33	9.59	7th Power Plan
Data Center	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	New	57.70	8	\$55.10	15%	25%	\$0.07	3.34	5.03	Pacific Gas and Electric Research
Data Center	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	New	70.89	7	\$3,400.00	15%	30%	\$3.91	5.37	8.25	AEG Research
Data Center	Refrigeration	Refrigeration - Anti-Sweat Heater	Fridge Feet	New	15.67	8	\$48.18	0%	0%	\$0.39	0.00	0.00	7th Power Plan
Data Center	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	New	24.83	4	\$10.44	0%	0%	\$0.10	0.00	0.00	Michigan Energy Measures Database
Data Center	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	New	163.84	16	\$165.20	0%	0%	\$0.08	0.00	0.00	7th Power Plan
Data Center	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	New	22.05	15	\$335.85	0%	0%	\$1.24	0.00	0.00	7th Power Plan
Data Center	Refrigeration	Refrigeration - Strip Curtain	Walkin Door	New	26.97	2	\$10.41	0%	0%	\$0.16	0.00	0.00	7th Power Plan
Data Center	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBtuh	New	0.35	15	\$45.43	0%	0%	\$10.71	0.00	0.00	Annual Energy Outlook, 2015
Data Center	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	New	7.19	15	\$313.82	0%	0%	\$3.57	0.00	0.00	Annual Energy Outlook, 2015
Data Center	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	New	108.78	10	\$506.05	0%	0%	\$0.50	0.00	0.00	Vermont TRM
Data Center	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	New	11.12	6	\$45.41	0%	0%	\$0.65	0.00	0.00	7th Power Plan
Data Center	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	New	0.90	8	\$3.72	0%	0%	\$0.52	0.00	0.00	7th Power Plan
Data Center	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	New	191.53	5	\$45.85	0%	0%	\$0.04	0.00	0.00	Illinois TRM
Data Center	Refrigeration	Grocery - ECMs for Display Cases	Fridge Case	New	46.05	16	\$165.20	0%	0%	\$0.28	0.00	0.00	7th Power Plan
Data Center	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	New	1,201.45	5	\$187.94	25%	75%	\$0.03	0.02	0.02	Illinois TRM
Data Center	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	New	31,425.20	18	\$8,526.67	25%	50%	\$0.01	155.82	172.20	7th Power Plan
Data Center	Office Equipment	Office Equipment - Smart Power Strips	Smart Strip	New	3,495.92	4	\$41.63	10%	50%	\$0.00	242.97	210.90	7th Power Plan

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Data Center	Cooling	Lodging - Guest Room Controls	LodgUnit	New	2,174.78	15	\$260.00	0%	0%	\$0.01	0.00	0.00	AEG-BEST
Data Center	Heating	Lodging - Guest Room Controls	LodgUnit	New	-84.87	15	\$260.00	0%	0%	\$0.01	0.00	0.00	AEG-BEST
Data Center	Office Equipment	Data Center - Best Practice Measures	sqft	New	10.99	5	\$0.91	20%	75%	\$0.01	1,161.28	1,202.22	com-datacenters-7p_v5p.xlsx
Data Center	Cooling	Data Center - Commercially Available Measures	sqft	New	0.07	8	\$2.23	10%	35%	\$0.09	3.65	3.89	com-datacenters-7p_v5p.xlsx
Data Center	Ventilation	Data Center - Commercially Available Measures	sqft	New	0.03	8	\$2.23	10%	35%	\$0.09	2.19	2.62	com-datacenters-7p_v5p.xlsx
Data Center	Interior Lighting	Data Center - Commercially Available Measures	sqft	New	0.05	8	\$2.23	10%	35%	\$0.09	2.78	3.75	com-datacenters-7p_v5p.xlsx
Data Center	Office Equipment	Data Center - Commercially Available Measures	sqft	New	2.54	8	\$2.23	10%	35%	\$0.09	224.16	226.22	com-datacenters-7p_v5p.xlsx
Data Center	Cooling	Data Center - Cutting Edge Measures	sqft	New	0.31	6	\$0.05	10%	15%	\$0.01	2.53	2.66	com-datacenters-7p_v5p.xlsx
Data Center	Office Equipment	Data Center - Cutting Edge Measures	sqft	New	0.88	6	\$0.05	10%	15%	\$0.01	11.09	11.41	com-datacenters-7p_v5p.xlsx
Data Center	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	New	106,001.64	18	\$4,092.80	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Data Center	Miscellaneous	Pool Pump - Timer	perBldg	New	0.00	10	\$85.22	15%	75%	\$0.00	0.00	0.00	Ontario Power TRM
Data Center	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	New	226,513.70	6	\$35.93	1%	3%	\$0.00	0.00	7.42	7th Power Plan
Data Center	Cooling	Advanced New Construction Designs	sqft	New	7.10	25	\$4.11	10%	15%	\$0.02	173.59	175.69	AEG Research
Data Center	Heating	Advanced New Construction Designs	sqft	New	0.71	25	\$4.11	10%	15%	\$0.02	7.26	7.31	AEG Research
Data Center	Ventilation	Advanced New Construction Designs	sqft	New	3.76	25	\$4.11	10%	15%	\$0.02	108.92	121.10	AEG Research
Data Center	Water Heating	Advanced New Construction Designs	sqft	New	0.09	25	\$4.11	10%	15%	\$0.02	1.02	1.24	AEG Research
Data Center	Interior Lighting	Advanced New Construction Designs	sqft	New	1.39	25	\$4.11	10%	15%	\$0.02	32.28	37.40	AEG Research
Data Center	Exterior Lighting	Advanced New Construction Designs	sqft	New	0.23	25	\$4.11	10%	15%	\$0.02	5.62	6.58	AEG Research
Data Center	Cooling	Strategic Energy Management	sqft	New	1.07	3	\$10.47	0%	0%	\$0.11	0.00	0.00	AEG Research

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Data Center	Heating	Strategic Energy Management	sqft	New	0.11	3	\$10.47	0%	0%	\$0.11	0.00	0.00	AEG Research
Data Center	Ventilation	Strategic Energy Management	sqft	New	0.57	3	\$10.47	0%	0%	\$0.11	0.00	0.00	AEG Research
Data Center	Water Heating	Strategic Energy Management	sqft	New	0.01	3	\$10.47	0%	0%	\$0.11	0.00	0.00	AEG Research
Data Center	Interior Lighting	Strategic Energy Management	sqft	New	0.21	3	\$10.47	0%	0%	\$0.11	0.00	0.00	AEG Research
Data Center	Exterior Lighting	Strategic Energy Management	sqft	New	0.04	3	\$10.47	0%	0%	\$0.11	0.00	0.00	AEG Research
Data Center	Refrigeration	Strategic Energy Management	sqft	New	0.00	3	\$10.47	0%	0%	\$0.11	0.00	0.00	AEG Research
Data Center	Office Equipment	Strategic Energy Management	sqft	New	3.79	3	\$10.47	0%	0%	\$0.11	0.00	0.00	AEG Research
Data Center	Cooling	Commissioning	sqft	New	1.49	3	\$6.62	2%	65%	\$0.06	43.24	48.98	AEG Research
Data Center	Heating	Commissioning	sqft	New	0.15	3	\$6.62	2%	65%	\$0.06	1.87	1.91	AEG Research
Data Center	Ventilation	Commissioning	sqft	New	0.80	3	\$6.62	2%	65%	\$0.06	27.97	35.46	AEG Research
Data Center	Water Heating	Commissioning	sqft	New	0.01	3	\$6.62	2%	65%	\$0.06	0.09	0.16	AEG Research
Data Center	Interior Lighting	Commissioning	sqft	New	0.25	3	\$6.62	2%	65%	\$0.06	6.91	11.13	AEG Research
Data Center	Exterior Lighting	Commissioning	sqft	New	0.04	3	\$6.62	2%	65%	\$0.06	1.20	2.06	AEG Research
Data Center	Refrigeration	Commissioning	sqft	New	0.00	3	\$6.62	2%	65%	\$0.06	0.04	0.05	AEG Research
Data Center	Cooling	Retrocommissioning	sqft	New	1.48	3	\$4.20	0%	0%	\$0.06	0.00	0.00	AEG Research
Data Center	Heating	Retrocommissioning	sqft	New	0.15	3	\$4.20	0%	0%	\$0.06	0.00	0.00	AEG Research
Data Center	Ventilation	Retrocommissioning	sqft	New	0.80	3	\$4.20	0%	0%	\$0.06	0.00	0.00	AEG Research
Data Center	Water Heating	Retrocommissioning	sqft	New	0.01	3	\$4.20	0%	0%	\$0.06	0.00	0.00	AEG Research
Data Center	Interior Lighting	Retrocommissioning	sqft	New	0.25	3	\$4.20	0%	0%	\$0.06	0.00	0.00	AEG Research
Data Center	Exterior Lighting	Retrocommissioning	sqft	New	0.04	3	\$4.20	0%	0%	\$0.06	0.00	0.00	AEG Research
Data Center	Refrigeration	Retrocommissioning	sqft	New	0.00	3	\$4.20	0%	0%	\$0.06	0.00	0.00	AEG Research
Data Center	Interior Lighting	Fruit Storage - Lighting Controls	sqft	New	0.17	10	\$0.09	0%	0%	\$0.03	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx

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Data Center	Refrigeration	Fruit Storage Refrigeration Retrofit	sqft	New	0.00	10	\$1.09	0%	0%	\$27.21	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Data Center	Refrigeration	Fruit Storage Refrigeration Tuneup	sqft	New	0.00	3	\$0.23	0%	0%	\$60.25	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Data Center	Refrigeration	Fruit Storage Retrofit - CO2 Scrub	sqft	New	0.00	10	\$3.13	0%	0%	\$161.32	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Data Center	Refrigeration	Fruit Storage Retrofit - Membrane	sqft	New	0.00	10	\$0.68	0%	0%	\$175.05	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Miscellaneous	Cooling	Insulation - Ceiling	sqft roof	Existing	0.14	45	\$1.28	15%	35%	\$0.12	1,281.53	1,443.31	Building Energy Simulation Tool
Miscellaneous	Heating	Insulation - Ceiling	sqft roof	Existing	0.30	45	\$1.28	15%	35%	\$0.12	911.93	975.59	Building Energy Simulation Tool
Miscellaneous	Ventilation	Insulation - Ceiling	sqft roof	Existing	0.05	45	\$1.28	15%	35%	\$0.12	512.09	610.94	Building Energy Simulation Tool
Miscellaneous	Cooling	Insulation - Ducting	sqft duct	Existing	0.32	20	\$0.84	15%	50%	\$0.00	1,280.32	1,391.27	Building Energy Simulation Tool
Miscellaneous	Heating	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.84	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Miscellaneous	Ventilation	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.84	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Miscellaneous	Cooling	Building Shell - Cool Roofs	sqft roof	Existing	0.37	20	\$0.78	45%	50%	\$0.45	873.45	912.51	Building Energy Simulation Tool
Miscellaneous	Heating	Building Shell - Cool Roofs	sqft roof	Existing	-0.22	20	\$0.78	45%	50%	\$0.45	-175.22	-176.69	Building Energy Simulation Tool
Miscellaneous	Ventilation	Building Shell - Cool Roofs	sqft roof	Existing	-0.03	20	\$0.78	45%	50%	\$0.45	-93.37	-106.71	Building Energy Simulation Tool
Miscellaneous	Cooling	Insulation - Wall Cavity	sqft wall	Existing	-0.08	45	\$0.78	15%	35%	\$0.03	-213.60	-223.79	Building Energy Simulation Tool
Miscellaneous	Heating	Insulation - Wall Cavity	sqft wall	Existing	1.49	45	\$0.78	15%	35%	\$0.03	1,405.43	1,415.20	Building Energy Simulation Tool
Miscellaneous	Ventilation	Insulation - Wall Cavity	sqft wall	Existing	0.23	45	\$0.78	15%	35%	\$0.03	748.92	854.65	Building Energy Simulation Tool
Miscellaneous	Cooling	HVAC - Duct Repair and Sealing	tonCool	Existing	2.77	18	\$0.57	15%	50%	\$10.00	241.90	281.17	Building Energy Simulation Tool
Miscellaneous	Heating	HVAC - Duct Repair and Sealing	tonCool	Existing	-2.60	18	\$0.57	15%	50%	\$10.00	-77.71	-84.24	Building Energy Simulation Tool
Miscellaneous	Ventilation	HVAC - Duct Repair and Sealing	tonCool	Existing	-0.41	18	\$0.57	15%	50%	\$10.00	-42.61	-52.20	Building Energy Simulation Tool

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Miscellaneous	Cooling	Windows - High Efficiency Glazing	sqft window	Existing	6.78	30	\$35.93	48%	48%	\$0.08	0.00	0.00	7th Power Plan
Miscellaneous	Heating	Windows - High Efficiency Glazing	sqft window	Existing	16.80	30	\$35.93	48%	48%	\$0.08	0.00	0.00	7th Power Plan
Miscellaneous	Ventilation	Windows - High Efficiency Glazing	sqft window	Existing	1.53	30	\$35.93	48%	48%	\$0.08	0.00	0.00	7th Power Plan
Miscellaneous	Cooling	Chiller - Chilled Water Reset	ChillCtrl	Existing	1,871.76	10	\$884.85	15%	75%	\$0.05	316.46	344.51	AEG-BEST
Miscellaneous	Cooling	Chiller - Chilled Water Variable-Flow System	HP cool	Existing	183.75	15	\$332.55	15%	75%	\$0.14	4,275.36	4,780.69	AEG-BEST
Miscellaneous	Cooling	Chiller - Variable Speed Fans	HP fan	Existing	446.59	15	\$208.36	15%	75%	\$0.04	1,051.54	1,140.49	New Jersey TRM
Miscellaneous	Cooling	Water-Cooled Chiller - Condenser Water Reset	ChillCtrl	Existing	12,929.75	10	\$884.85	15%	75%	\$0.01	744.51	809.36	AEG-BEST
Miscellaneous	Cooling	HVAC - Economizer	HP cool	Existing	61.09	10	\$168.42	18%	75%	\$0.27	7,051.67	8,017.65	AEG-BEST
Miscellaneous	Heating	Space Heating - Heat Recovery Ventilator	CFM	Existing	3.61	14	\$5.08	3%	75%	\$0.12	3,971.98	4,184.81	7th Power Plan
Miscellaneous	Ventilation	Ventilation - ECM on VAV Boxes	sqft	Existing	0.15	18	\$0.25	15%	20%	\$0.10	409.21	480.56	7th Power Plan
Miscellaneous	Ventilation	Ventilation - Variable Speed Control	sqft	Existing	0.04	15	\$181.39	13%	25%	\$323.73	254.35	334.92	AEG-BEST
Miscellaneous	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.01	15	\$0.25	15%	25%	\$2.18	44.11	58.04	7th Power Plan
Miscellaneous	Cooling	Destratification Fans (HVLS)	Strat Fan	Existing	3,857.56	15	\$7,270.90	15%	15%	\$0.04	0.00	0.00	AEG Research
Miscellaneous	Heating	Destratification Fans (HVLS)	Strat Fan	Existing	9,060.58	15	\$7,270.90	15%	15%	\$0.04	0.00	0.00	AEG Research
Miscellaneous	Cooling	RTU - Maintenance	tonCool	Existing	26.75	3	\$35.00	15%	45%	\$0.33	1,593.83	1,909.17	AEG Research
Miscellaneous	Cooling	RTU - Advanced Controls	sqft	Existing	0.18	15	\$0.07	15%	45%	\$0.03	1,726.96	1,808.06	7th Power Plan
Miscellaneous	Cooling	RTU - Evaporative Precooler	tonCool	Existing	52.76	15	\$681.62	15%	75%	\$0.91	5,422.86	5,934.87	AEG Research
Miscellaneous	Cooling	Ductless Mini Split Heat Pump	tonCool	Existing	121.51	15	\$3,359.26	15%	25%	\$0.91	196.28	243.17	7th Power Plan
Miscellaneous	Heating	Ductless Mini Split Heat Pump	tonCool	Existing	145.56	15	\$3,359.26	15%	25%	\$0.91	577.01	630.40	7th Power Plan
Miscellaneous	Cooling	Thermostat - WiFi/Interactive	sqft	Existing	0.49	5	\$0.66	30%	40%	\$0.09	2,238.04	2,488.63	7th Power Plan
Miscellaneous	Heating	Thermostat - WiFi/Interactive	sqft	Existing	0.61	5	\$0.66	30%	40%	\$0.09	923.33	979.25	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Miscellaneous	Ventilation	Thermostat - WiFi/Interactive	sqft	Existing	0.10	5	\$0.66	30%	40%	\$0.09	518.49	613.11	7th Power Plan
Miscellaneous	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	Existing	48.00	10	\$8.35	25%	65%	\$0.01	70.58	127.61	Illinois TRM
Miscellaneous	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	Existing	49.59	10	\$11.64	25%	65%	\$0.02	36.26	66.33	7th Power Plan
Miscellaneous	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	Existing	56.82	15	\$36.75	15%	25%	\$0.03	9.54	15.20	Hawaii TRM
Miscellaneous	Water Heating	Water Heater - Pipe Insulation	PipeFeet	Existing	148.28	15	\$14.88	16%	75%	\$0.01	133.88	232.30	AEG-BEST
Miscellaneous	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	Existing	31.02	4	\$144.04	25%	65%	\$0.58	43.02	82.49	7th Power Plan
Miscellaneous	Water Heating	Water Heater - Thermostat Setback	WHunits	Existing	57.65	2	\$5.00	15%	75%	\$0.02	64.15	119.97	Illinois TRM
Miscellaneous	Water Heating	Water Heater - Solar System	PipeFeet	Existing	501.10	20	\$215.28	1%	30%	\$0.02	217.37	391.38	AEG-BEST
Miscellaneous	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.32	15	\$0.35	3%	23%	\$0.06	4,158.20	5,329.63	7th Power Plan
Miscellaneous	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.44	15	\$0.58	3%	23%	\$0.08	5,611.47	7,346.99	7th Power Plan
Miscellaneous	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	Existing	151.18	15	\$54.41	1%	3%	\$0.02	130.50	201.70	7th Power Plan
Miscellaneous	Interior Lighting	Interior Lighting - Timeclocks and Timers	occ sens	Existing	0.00	8	\$111.67	7%	15%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Miscellaneous	Interior Lighting	Interior Lighting - Skylights	1000 sqft	Existing	0.00	15	\$1,006.35	15%	25%	\$0.00	0.00	0.00	AEG Research
Miscellaneous	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	1000 sqft	Existing	169.14	16	\$1,807.69	5%	15%	\$0.59	862.06	1,380.97	7th Power Plan
Miscellaneous	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	Existing	1,640.04	11	\$30.80	15%	50%	\$0.00	3,129.92	4,479.58	Illinois TRM
Miscellaneous	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	ELtg Watts	Existing	1.82	8	\$0.63	15%	25%	\$0.03	1,356.29	2,096.67	7th Power Plan
Miscellaneous	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	Existing	70.11	8	\$55.10	15%	25%	\$0.07	659.82	1,076.14	Pacific Gas and Electric Research
Miscellaneous	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	Existing	86.04	7	\$3,400.00	15%	30%	\$3.60	1,204.67	1,997.15	AEG Research
Miscellaneous	Refrigeration	Refrigeration - Anti-Sweat Heater	Fridge Feet	Existing	23.94	8	\$48.18	0%	0%	\$0.23	0.00	0.00	7th Power Plan

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Miscellaneous	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	Existing	37.42	4	\$10.44	0%	0%	\$0.06	0.00	0.00	Michigan Energy Measures Database
Miscellaneous	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	Existing	231.69	16	\$165.20	0%	0%	\$0.05	0.00	0.00	7th Power Plan
Miscellaneous	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	Existing	25.25	15	\$335.85	0%	0%	\$0.97	0.00	0.00	7th Power Plan
Miscellaneous	Refrigeration	Refrigeration - Strip Curtain	Walkin Door	Existing	35.25	2	\$10.41	0%	0%	\$0.11	0.00	0.00	7th Power Plan
Miscellaneous	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	Existing	0.40	15	\$45.43	0%	0%	\$8.34	0.00	0.00	Annual Energy Outlook, 2015
Miscellaneous	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	Existing	8.23	15	\$313.82	0%	0%	\$2.78	0.00	0.00	Annual Energy Outlook, 2015
Miscellaneous	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	Existing	147.87	10	\$506.05	0%	0%	\$0.33	0.00	0.00	Vermont TRM
Miscellaneous	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	Existing	14.27	6	\$45.41	0%	0%	\$0.45	0.00	0.00	7th Power Plan
Miscellaneous	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	Existing	1.15	8	\$3.72	0%	0%	\$0.36	0.00	0.00	7th Power Plan
Miscellaneous	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	Existing	250.53	5	\$45.85	0%	0%	\$0.03	0.00	0.00	Illinois TRM
Miscellaneous	Refrigeration	Grocery - ECMs for Display Cases	Fridge Case	Existing	59.12	16	\$165.20	0%	0%	\$0.20	0.00	0.00	7th Power Plan
Miscellaneous	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	Existing	1,232.57	5	\$187.94	25%	75%	\$0.03	798.03	851.70	Illinois TRM
Miscellaneous	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	Existing	1,255.09	18	\$8,526.67	25%	50%	\$0.42	670.51	808.72	7th Power Plan
Miscellaneous	Office Equipment	Office Equipment - Smart Power Strips	Smart Strip	Existing	17.92	4	\$41.63	10%	50%	\$0.47	1,001.43	907.17	7th Power Plan
Miscellaneous	Cooling	Lodging - Guest Room Controls	LodgUnit	Existing	195.88	15	\$260.00	0%	0%	\$0.32	0.00	0.00	AEG-BEST
Miscellaneous	Heating	Lodging - Guest Room Controls	LodgUnit	Existing	-136.68	15	\$260.00	0%	0%	\$0.32	0.00	0.00	AEG-BEST
Miscellaneous	Office Equipment	Data Center - Best Practice Measures	sqft	Existing	0.03	5	\$0.00	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Miscellaneous	Cooling	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Miscellaneous	Ventilation	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx

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Miscellaneous	Interior Lighting	Data Center - Commercially Available Measures	sqft	Existing	0.03	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Miscellaneous	Office Equipment	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Miscellaneous	Cooling	Data Center - Cutting Edge Measures	sqft	Existing	0.04	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Miscellaneous	Office Equipment	Data Center - Cutting Edge Measures	sqft	Existing	0.00	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Miscellaneous	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	Existing	633.56	18	\$4,092.80	0%	5%	\$0.40	112.28	135.16	7th Power Plan
Miscellaneous	Miscellaneous	Pool Pump - Timer	perBldg	Existing	90.74	10	\$85.22	15%	75%	\$0.10	8.27	8.29	Ontario Power TRM
Miscellaneous	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	Existing	1,327.90	6	\$35.93	1%	3%	\$0.00	225.97	226.01	7th Power Plan
Miscellaneous	Cooling	Advanced New Construction Designs	sqft	Existing	0.67	25	\$4.11	0%	0%	\$0.07	0.00	0.00	AEG Research
Miscellaneous	Heating	Advanced New Construction Designs	sqft	Existing	1.04	25	\$4.11	0%	0%	\$0.07	0.00	0.00	AEG Research
Miscellaneous	Ventilation	Advanced New Construction Designs	sqft	Existing	0.14	25	\$4.11	0%	0%	\$0.07	0.00	0.00	AEG Research
Miscellaneous	Water Heating	Advanced New Construction Designs	sqft	Existing	0.24	25	\$4.11	0%	0%	\$0.07	0.00	0.00	AEG Research
Miscellaneous	Interior Lighting	Advanced New Construction Designs	sqft	Existing	0.73	25	\$4.11	0%	0%	\$0.07	0.00	0.00	AEG Research
Miscellaneous	Exterior Lighting	Advanced New Construction Designs	sqft	Existing	0.18	25	\$4.11	0%	0%	\$0.07	0.00	0.00	AEG Research
Miscellaneous	Cooling	Strategic Energy Management	sqft	Existing	0.15	3	\$0.11	5%	16%	\$0.01	856.02	950.36	AEG Research
Miscellaneous	Heating	Strategic Energy Management	sqft	Existing	0.19	3	\$0.11	5%	16%	\$0.01	346.46	363.87	AEG Research
Miscellaneous	Ventilation	Strategic Energy Management	sqft	Existing	0.03	3	\$0.11	5%	16%	\$0.01	184.62	229.77	AEG Research
Miscellaneous	Water Heating	Strategic Energy Management	sqft	Existing	0.04	3	\$0.11	5%	16%	\$0.01	17.78	33.98	AEG Research
Miscellaneous	Interior Lighting	Strategic Energy Management	sqft	Existing	0.11	3	\$0.11	5%	16%	\$0.01	628.59	969.18	AEG Research
Miscellaneous	Exterior Lighting	Strategic Energy Management	sqft	Existing	0.02	3	\$0.11	5%	16%	\$0.01	135.44	220.17	AEG Research

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Miscellaneous	Refrigeration	Strategic Energy Management	sqft	Existing	0.01	3	\$0.11	5%	16%	\$0.01	48.80	61.35	AEG Research
Miscellaneous	Office Equipment	Strategic Energy Management	sqft	Existing	0.02	3	\$0.11	5%	16%	\$0.01	155.93	140.81	AEG Research
Miscellaneous	Cooling	Commissioning	sqft	Existing	0.21	3	\$0.32	0%	0%	\$0.01	0.00	0.00	AEG Research
Miscellaneous	Heating	Commissioning	sqft	Existing	0.26	3	\$0.32	0%	0%	\$0.01	0.00	0.00	AEG Research
Miscellaneous	Ventilation	Commissioning	sqft	Existing	0.04	3	\$0.32	0%	0%	\$0.01	0.00	0.00	AEG Research
Miscellaneous	Water Heating	Commissioning	sqft	Existing	0.02	3	\$0.32	0%	0%	\$0.01	0.00	0.00	AEG Research
Miscellaneous	Interior Lighting	Commissioning	sqft	Existing	0.13	3	\$0.32	0%	0%	\$0.01	0.00	0.00	AEG Research
Miscellaneous	Exterior Lighting	Commissioning	sqft	Existing	0.03	3	\$0.32	0%	0%	\$0.01	0.00	0.00	AEG Research
Miscellaneous	Refrigeration	Commissioning	sqft	Existing	0.02	3	\$0.32	0%	0%	\$0.01	0.00	0.00	AEG Research
Miscellaneous	Cooling	Retrocommissioning	sqft	Existing	0.22	3	\$0.21	10%	65%	\$0.01	6,157.54	6,684.05	AEG Research
Miscellaneous	Heating	Retrocommissioning	sqft	Existing	0.27	3	\$0.21	10%	65%	\$0.01	2,492.15	2,559.48	AEG Research
Miscellaneous	Ventilation	Retrocommissioning	sqft	Existing	0.04	3	\$0.21	10%	65%	\$0.01	1,328.00	1,615.76	AEG Research
Miscellaneous	Water Heating	Retrocommissioning	sqft	Existing	0.02	3	\$0.21	10%	65%	\$0.01	41.56	78.81	AEG Research
Miscellaneous	Interior Lighting	Retrocommissioning	sqft	Existing	0.13	3	\$0.21	10%	65%	\$0.01	3,743.65	5,662.07	AEG Research
Miscellaneous	Exterior Lighting	Retrocommissioning	sqft	Existing	0.03	3	\$0.21	10%	65%	\$0.01	806.63	1,286.26	AEG Research
Miscellaneous	Refrigeration	Retrocommissioning	sqft	Existing	0.02	3	\$0.21	10%	65%	\$0.01	600.62	726.37	AEG Research
Miscellaneous	Interior Lighting	Fruit Storage - Lighting Controls	sqft	Existing	0.09	10	\$0.09	0%	0%	\$0.08	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Miscellaneous	Refrigeration	Fruit Storage Refrigeration Retrofit	sqft	Existing	0.06	10	\$1.09	0%	0%	\$1.85	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Miscellaneous	Refrigeration	Fruit Storage Refrigeration Tuneup	sqft	Existing	0.01	3	\$0.23	0%	0%	\$4.10	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Miscellaneous	Refrigeration	Fruit Storage Retrofit - CO2 Scrub	sqft	Existing	0.03	10	\$3.13	0%	0%	\$10.97	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Miscellaneous	Refrigeration	Fruit Storage Retrofit - Membrane	sqft	Existing	0.01	10	\$0.68	0%	0%	\$11.90	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Miscellaneous	Cooling	Insulation - Ceiling	sqft roof	New	0.00	45	\$1.28	15%	50%	\$0.19	0.00	0.00	Building Energy Simulation Tool

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Miscellaneous	Heating	Insulation - Ceiling	sqft roof	New	0.30	45	\$1.28	15%	50%	\$0.19	968.23	967.02	Building Energy Simulation Tool
Miscellaneous	Ventilation	Insulation - Ceiling	sqft roof	New	0.04	45	\$1.28	15%	50%	\$0.19	443.85	481.30	Building Energy Simulation Tool
Miscellaneous	Cooling	Insulation - Ducting	sqft duct	New	0.42	20	\$0.84	15%	50%	\$0.10	1,293.50	1,311.24	Building Energy Simulation Tool
Miscellaneous	Heating	Insulation - Ducting	sqft duct	New	0.12	20	\$0.84	15%	50%	\$0.10	93.28	93.16	Building Energy Simulation Tool
Miscellaneous	Ventilation	Insulation - Ducting	sqft duct	New	0.01	20	\$0.84	15%	50%	\$0.10	42.76	46.37	Building Energy Simulation Tool
Miscellaneous	Cooling	Building Shell - Cool Roofs	sqft roof	New	0.10	20	\$0.78	45%	50%	\$20.76	166.64	169.42	Building Energy Simulation Tool
Miscellaneous	Heating	Building Shell - Cool Roofs	sqft roof	New	-0.09	20	\$0.78	45%	50%	\$20.76	-38.83	-38.89	Building Energy Simulation Tool
Miscellaneous	Ventilation	Building Shell - Cool Roofs	sqft roof	New	-0.01	20	\$0.78	45%	50%	\$20.76	-17.63	-19.07	Building Energy Simulation Tool
Miscellaneous	Cooling	Insulation - Wall Cavity	sqft wall	New	0.00	45	\$0.78	15%	50%	\$0.12	-7.03	-7.15	Building Energy Simulation Tool
Miscellaneous	Heating	Insulation - Wall Cavity	sqft wall	New	0.30	45	\$0.78	15%	50%	\$0.12	281.76	282.14	Building Energy Simulation Tool
Miscellaneous	Ventilation	Insulation - Wall Cavity	sqft wall	New	0.04	45	\$0.78	15%	50%	\$0.12	127.93	138.38	Building Energy Simulation Tool
Miscellaneous	Cooling	HVAC - Duct Repair and Sealing	tonCool	New	2.50	18	\$0.57	15%	50%	\$0.00	165.49	168.39	Building Energy Simulation Tool
Miscellaneous	Heating	HVAC - Duct Repair and Sealing	tonCool	New	9.68	18	\$0.57	15%	50%	\$0.00	163.94	164.38	Building Energy Simulation Tool
Miscellaneous	Ventilation	HVAC - Duct Repair and Sealing	tonCool	New	1.14	18	\$0.57	15%	50%	\$0.00	74.43	80.96	Building Energy Simulation Tool
Miscellaneous	Cooling	Windows - High Efficiency Glazing	sqft window	New	5.16	30	\$35.93	66%	66%	\$0.09	0.00	0.00	7th Power Plan
Miscellaneous	Heating	Windows - High Efficiency Glazing	sqft window	New	16.87	30	\$35.93	66%	66%	\$0.09	0.00	0.00	7th Power Plan
Miscellaneous	Ventilation	Windows - High Efficiency Glazing	sqft window	New	1.16	30	\$35.93	66%	66%	\$0.09	0.00	0.00	7th Power Plan
Miscellaneous	Cooling	Chiller - Chilled Water Reset	ChillCtrl	New	1,485.08	10	\$884.85	15%	75%	\$0.06	83.65	87.25	AEG-BEST
Miscellaneous	Cooling	Chiller - Chilled Water Variable-Flow System	HP cool	New	150.90	15	\$332.55	15%	75%	\$0.17	1,492.85	1,547.66	AEG-BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Miscellaneous	Cooling	Chiller - Variable Speed Fans	HP fan	New	353.44	15	\$208.36	15%	75%	\$0.04	349.36	362.35	New Jersey TRM
Miscellaneous	Cooling	Water-Cooled Chiller - Condenser Water Reset	ChillCtrl	New	12,871.02	10	\$884.85	15%	75%	\$0.01	246.31	256.36	AEG-BEST
Miscellaneous	Cooling	HVAC - Economizer	HP cool	New	46.41	10	\$168.42	18%	75%	\$0.35	1,812.29	1,891.63	AEG-BEST
Miscellaneous	Heating	Space Heating - Heat Recovery Ventilator	CFM	New	3.52	14	\$5.08	6%	75%	\$0.12	1,173.76	1,177.77	7th Power Plan
Miscellaneous	Ventilation	Ventilation - ECM on VAV Boxes	sqft	New	0.13	18	\$0.25	15%	20%	\$0.11	205.93	223.87	7th Power Plan
Miscellaneous	Ventilation	Ventilation - Variable Speed Control	sqft	New	0.03	15	\$181.39	19%	25%	\$332.14	36.93	43.19	AEG-BEST
Miscellaneous	Ventilation	Ventilation - Demand Controlled	sqft	New	0.01	15	\$0.25	15%	25%	\$2.23	13.47	15.76	7th Power Plan
Miscellaneous	Cooling	Destratification Fans (HVLS)	Strat Fan	New	2,899.31	15	\$7,270.90	15%	15%	\$0.05	0.00	0.00	AEG Research
Miscellaneous	Heating	Destratification Fans (HVLS)	Strat Fan	New	8,838.76	15	\$7,270.90	15%	15%	\$0.05	0.00	0.00	AEG Research
Miscellaneous	Cooling	RTU - Maintenance	tonCool	New	36.54	3	\$35.00	15%	45%	\$0.25	231.29	247.85	AEG Research
Miscellaneous	Cooling	RTU - Advanced Controls	sqft	New	0.22	15	\$0.07	15%	45%	\$0.02	1,465.73	1,498.26	7th Power Plan
Miscellaneous	Cooling	RTU - Evaporative Precooler	tonCool	New	70.93	15	\$681.62	15%	75%	\$0.70	6,392.79	6,465.80	AEG Research
Miscellaneous	Cooling	Ductless Mini Split Heat Pump	tonCool	New	157.92	15	\$3,359.26	15%	25%	\$0.81	144.89	152.80	7th Power Plan
Miscellaneous	Heating	Ductless Mini Split Heat Pump	tonCool	New	154.82	15	\$3,359.26	15%	25%	\$0.81	238.35	240.90	7th Power Plan
Miscellaneous	Cooling	Thermostat - WiFi/Interactive	sqft	New	0.39	5	\$0.66	30%	40%	\$0.11	157.24	166.31	7th Power Plan
Miscellaneous	Heating	Thermostat - WiFi/Interactive	sqft	New	0.61	5	\$0.66	30%	40%	\$0.11	63.32	63.73	7th Power Plan
Miscellaneous	Ventilation	Thermostat - WiFi/Interactive	sqft	New	0.07	5	\$0.66	30%	40%	\$0.11	29.03	34.26	7th Power Plan
Miscellaneous	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	New	39.74	10	\$8.35	25%	65%	\$0.01	14.65	23.42	Illinois TRM
Miscellaneous	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	New	41.38	10	\$11.64	25%	65%	\$0.02	7.65	12.21	7th Power Plan
Miscellaneous	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	New	49.13	15	\$36.75	15%	25%	\$0.03	4.53	5.79	Hawaii TRM
Miscellaneous	Water Heating	Water Heater - Pipe Insulation	PipeFeet	New	121.62	15	\$14.88	1%	75%	\$0.01	49.71	74.09	AEG-BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Miscellaneous	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	New	26.99	4	\$144.04	25%	65%	\$0.58	4.06	7.03	7th Power Plan
Miscellaneous	Water Heating	Water Heater - Thermostat Setback	WHUnits	New	49.33	2	\$5.00	15%	75%	\$0.02	2.16	3.93	Illinois TRM
Miscellaneous	Water Heating	Water Heater - Solar System	PipeFeet	New	419.95	20	\$215.28	1%	30%	\$0.02	69.54	102.52	AEG-BEST
Miscellaneous	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.30	15	\$0.35	11%	23%	\$0.06	2,328.46	2,748.29	7th Power Plan
Miscellaneous	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.41	15	\$0.58	11%	23%	\$0.08	3,203.50	3,799.44	7th Power Plan
Miscellaneous	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	New	137.82	15	\$54.41	1%	3%	\$0.02	33.08	45.21	7th Power Plan
Miscellaneous	Interior Lighting	Interior Lighting - Timeclocks and Timers	occ sens	New	0.00	8	\$111.67	7%	15%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Miscellaneous	Interior Lighting	Interior Lighting - Skylights	1000 sqft	New	0.00	15	\$1,006.35	18%	25%	\$0.00	0.00	0.00	AEG Research
Miscellaneous	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	1000 sqft	New	144.64	16	\$1,807.69	5%	15%	\$0.64	263.32	344.67	7th Power Plan
Miscellaneous	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	New	1,355.34	11	\$30.80	15%	50%	\$0.00	718.36	945.11	Illinois TRM
Miscellaneous	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	ELtg Watts	New	1.58	8	\$0.63	15%	25%	\$0.03	251.37	392.46	7th Power Plan
Miscellaneous	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	New	63.46	8	\$55.10	15%	25%	\$0.06	132.25	204.98	Pacific Gas and Electric Research
Miscellaneous	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	New	78.43	7	\$3,400.00	15%	30%	\$3.46	213.43	338.95	AEG Research
Miscellaneous	Refrigeration	Refrigeration - Anti-Sweat Heater	Fridge Feet	New	19.88	8	\$48.18	0%	0%	\$0.29	0.00	0.00	7th Power Plan
Miscellaneous	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	New	31.74	4	\$10.44	0%	0%	\$0.07	0.00	0.00	Michigan Energy Measures Database
Miscellaneous	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	New	197.58	16	\$165.20	0%	0%	\$0.06	0.00	0.00	7th Power Plan
Miscellaneous	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	New	25.56	15	\$335.85	0%	0%	\$1.03	0.00	0.00	7th Power Plan
Miscellaneous	Refrigeration	Refrigeration - Strip Curtain	Walkin Door	New	33.79	2	\$10.41	0%	0%	\$0.12	0.00	0.00	7th Power Plan
Miscellaneous	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBtuh	New	0.40	15	\$45.43	0%	0%	\$8.87	0.00	0.00	Annual Energy Outlook, 2015

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Miscellaneous	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	New	8.33	15	\$313.82	0%	0%	\$2.96	0.00	0.00	Annual Energy Outlook, 2015
Miscellaneous	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	New	132.71	10	\$506.05	0%	0%	\$0.39	0.00	0.00	Vermont TRM
Miscellaneous	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	New	14.08	6	\$45.41	0%	0%	\$0.49	0.00	0.00	7th Power Plan
Miscellaneous	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	New	1.13	8	\$3.72	0%	0%	\$0.40	0.00	0.00	7th Power Plan
Miscellaneous	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	New	242.31	5	\$45.85	0%	0%	\$0.03	0.00	0.00	Illinois TRM
Miscellaneous	Refrigeration	Grocery - ECMs for Display Cases	Fridge Case	New	58.35	16	\$165.20	0%	0%	\$0.21	0.00	0.00	7th Power Plan
Miscellaneous	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	New	1,206.92	5	\$187.94	25%	75%	\$0.03	127.68	132.26	Illinois TRM
Miscellaneous	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	New	1,049.83	18	\$8,526.67	25%	50%	\$0.43	342.98	376.46	7th Power Plan
Miscellaneous	Office Equipment	Office Equipment - Smart Power Strips	Smart Strip	New	21.08	4	\$41.63	10%	50%	\$0.40	96.79	89.23	7th Power Plan
Miscellaneous	Cooling	Lodging - Guest Room Controls	LodgUnit	New	237.31	15	\$260.00	0%	0%	\$0.18	0.00	0.00	AEG-BEST
Miscellaneous	Heating	Lodging - Guest Room Controls	LodgUnit	New	-136.25	15	\$260.00	0%	0%	\$0.18	0.00	0.00	AEG-BEST
Miscellaneous	Office Equipment	Data Center - Best Practice Measures	sqft	New	0.03	5	\$0.00	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Miscellaneous	Cooling	Data Center - Commercially Available Measures	sqft	New	0.01	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Miscellaneous	Ventilation	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Miscellaneous	Interior Lighting	Data Center - Commercially Available Measures	sqft	New	0.02	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Miscellaneous	Office Equipment	Data Center - Commercially Available Measures	sqft	New	0.01	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Miscellaneous	Cooling	Data Center - Cutting Edge Measures	sqft	New	0.03	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Miscellaneous	Office Equipment	Data Center - Cutting Edge Measures	sqft	New	0.00	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Miscellaneous	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	New	529.58	18	\$4,092.80	0%	5%	\$0.41	57.33	62.90	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Miscellaneous	Miscellaneous	Pool Pump - Timer	perBldg	New	90.86	10	\$85.22	15%	75%	\$0.10	2.07	2.07	Ontario Power TRM
Miscellaneous	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	New	1,327.65	6	\$35.93	1%	3%	\$0.00	19.67	19.68	7th Power Plan
Miscellaneous	Cooling	Advanced New Construction Designs	sqft	New	0.72	25	\$4.11	10%	15%	\$0.07	1,417.66	1,430.01	AEG Research
Miscellaneous	Heating	Advanced New Construction Designs	sqft	New	1.13	25	\$4.11	10%	15%	\$0.07	569.03	569.96	AEG Research
Miscellaneous	Ventilation	Advanced New Construction Designs	sqft	New	0.14	25	\$4.11	10%	15%	\$0.07	260.85	285.24	AEG Research
Miscellaneous	Water Heating	Advanced New Construction Designs	sqft	New	0.21	25	\$4.11	10%	15%	\$0.07	32.05	38.91	AEG Research
Miscellaneous	Interior Lighting	Advanced New Construction Designs	sqft	New	0.63	25	\$4.11	10%	15%	\$0.07	997.56	1,149.49	AEG Research
Miscellaneous	Exterior Lighting	Advanced New Construction Designs	sqft	New	0.13	25	\$4.11	10%	15%	\$0.07	220.65	259.65	AEG Research
Miscellaneous	Cooling	Strategic Energy Management	sqft	New	0.11	3	\$0.10	16%	16%	\$0.01	0.00	0.00	AEG Research
Miscellaneous	Heating	Strategic Energy Management	sqft	New	0.18	3	\$0.10	16%	16%	\$0.01	0.00	0.00	AEG Research
Miscellaneous	Ventilation	Strategic Energy Management	sqft	New	0.02	3	\$0.10	16%	16%	\$0.01	0.00	0.00	AEG Research
Miscellaneous	Water Heating	Strategic Energy Management	sqft	New	0.03	3	\$0.10	16%	16%	\$0.01	0.00	0.00	AEG Research
Miscellaneous	Interior Lighting	Strategic Energy Management	sqft	New	0.10	3	\$0.10	16%	16%	\$0.01	0.00	0.00	AEG Research
Miscellaneous	Exterior Lighting	Strategic Energy Management	sqft	New	0.02	3	\$0.10	16%	16%	\$0.01	0.00	0.00	AEG Research
Miscellaneous	Refrigeration	Strategic Energy Management	sqft	New	0.01	3	\$0.10	16%	16%	\$0.01	0.00	0.00	AEG Research
Miscellaneous	Office Equipment	Strategic Energy Management	sqft	New	0.02	3	\$0.10	16%	16%	\$0.01	0.00	0.00	AEG Research
Miscellaneous	Cooling	Commissioning	sqft	New	0.16	3	\$0.28	10%	65%	\$0.01	334.20	356.90	AEG Research
Miscellaneous	Heating	Commissioning	sqft	New	0.25	3	\$0.28	10%	65%	\$0.01	134.36	135.47	AEG Research
Miscellaneous	Ventilation	Commissioning	sqft	New	0.03	3	\$0.28	10%	65%	\$0.01	61.01	72.85	AEG Research
Miscellaneous	Water Heating	Commissioning	sqft	New	0.01	3	\$0.28	10%	65%	\$0.01	2.44	4.33	AEG Research
Miscellaneous	Interior Lighting	Commissioning	sqft	New	0.12	3	\$0.28	10%	65%	\$0.01	198.44	314.60	AEG Research

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Miscellaneous	Exterior Lighting	Commissioning	sqft	New	0.02	3	\$0.28	10%	65%	\$0.01	42.29	75.26	AEG Research
Miscellaneous	Refrigeration	Commissioning	sqft	New	0.03	3	\$0.28	10%	65%	\$0.01	46.04	51.30	AEG Research
Miscellaneous	Cooling	Retrocommissioning	sqft	New	0.16	3	\$0.17	0%	0%	\$0.01	0.00	0.00	AEG Research
Miscellaneous	Heating	Retrocommissioning	sqft	New	0.25	3	\$0.17	0%	0%	\$0.01	0.00	0.00	AEG Research
Miscellaneous	Ventilation	Retrocommissioning	sqft	New	0.03	3	\$0.17	0%	0%	\$0.01	0.00	0.00	AEG Research
Miscellaneous	Water Heating	Retrocommissioning	sqft	New	0.01	3	\$0.17	0%	0%	\$0.01	0.00	0.00	AEG Research
Miscellaneous	Interior Lighting	Retrocommissioning	sqft	New	0.12	3	\$0.17	0%	0%	\$0.01	0.00	0.00	AEG Research
Miscellaneous	Exterior Lighting	Retrocommissioning	sqft	New	0.02	3	\$0.17	0%	0%	\$0.01	0.00	0.00	AEG Research
Miscellaneous	Refrigeration	Retrocommissioning	sqft	New	0.03	3	\$0.17	0%	0%	\$0.01	0.00	0.00	AEG Research
Miscellaneous	Interior Lighting	Fruit Storage - Lighting Controls	sqft	New	0.08	10	\$0.09	0%	0%	\$0.08	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Miscellaneous	Refrigeration	Fruit Storage Refrigeration Retrofit	sqft	New	0.08	10	\$1.09	0%	0%	\$1.41	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Miscellaneous	Refrigeration	Fruit Storage Refrigeration Tuneup	sqft	New	0.02	3	\$0.23	0%	0%	\$3.11	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Miscellaneous	Refrigeration	Fruit Storage Retrofit - CO2 Scrub	sqft	New	0.04	10	\$3.13	0%	0%	\$8.34	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Miscellaneous	Refrigeration	Fruit Storage Retrofit - Membrane	sqft	New	0.01	10	\$0.68	0%	0%	\$9.04	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx

Washington Commercial Measures Assumptions

Table H-9 Comparison of 7th Plan and RTF Commercial Measures in Washington

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036) (MWh @gen)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Large Office	Cooling	Air-Cooled Chiller	1 kBTU/hr	Existing	24.95	20	\$26.36	14%	at stock turnover	\$0.10	175.01	175.01	Annual Energy Outlook, 2015
Large Office	Cooling	Water-Cooled Chiller	1 kBTU/hr	Existing	39.51	25	\$12.65	9%	at stock turnover	\$0.03	170.70	170.70	Annual Energy Outlook, 2015
Large Office	Cooling	RTU	1 kBTU/hr	Existing	3.69	15	\$6.75	45%	at stock turnover	\$0.20	99.78	99.78	Annual Energy Outlook, 2015
Large Office	Cooling	Room AC	1 kBTU/hr	Existing	14.54	15	\$23.62	2%	at stock turnover	\$0.18	20.82	20.82	Annual Energy Outlook, 2015
Large Office	Cooling	Evaporative AC	11 per TR	Existing	0.00	15	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	New Buildings Institute Study, 2006
Large Office	Cooling	Air-Source Heat Pump	1 kBTU/hr	Existing	7.10	15	\$21.65	14%	at stock turnover	\$0.22	44.97	44.97	Annual Energy Outlook, 2015
Large Office	Heating	Air-Source Heat Pump	1 kBTU/hr	Existing	3.63	15	\$21.65	14%	at stock turnover	\$0.22	22.99	22.99	Annual Energy Outlook, 2015
Large Office	Cooling	Geothermal Heat Pump	1 kBTU/hr	Existing	17.26	25	\$26.36	8%	at stock turnover	\$0.08	44.33	44.33	Annual Energy Outlook, 2015
Large Office	Heating	Geothermal Heat Pump	1 kBTU/hr	Existing	13.14	25	\$26.36	8%	at stock turnover	\$0.08	33.75	33.75	Annual Energy Outlook, 2015
Large Office	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	1%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Large Office	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	24%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Large Office	Ventilation	Ventilation	1000 CFM	Existing	10,391.16	20	\$1,219.71	100%	at stock turnover	\$0.01	425.64	425.64	AEG-BEST
Large Office	Water Heating	Water Heater	65 gallons	Existing	2,093.31	13	\$3,537.01	45%	at stock turnover	\$0.20	550.45	550.45	7th Power Plan
Large Office	Interior Lighting	Screw-in	lamps	Existing	47.12	8	\$3.95	100%	at stock turnover	\$0.00	97.50	190.51	7th Power Plan
Large Office	Interior Lighting	Linear Lighting	lamps	Existing	65.98	17	\$52.83	100%	at stock turnover	\$0.06	1,636.65	1,554.69	7th Power Plan
Large Office	Interior Lighting	High-Bay Fixtures	lamps	Existing	235.03	15	\$123.86	100%	at stock turnover	\$0.06	470.93	449.69	Annual Energy Outlook, 2015
Large Office	Exterior Lighting	Screw-in	lamps	Existing	80.28	8	\$3.95	100%	at stock turnover	\$0.00	19.35	47.21	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Large Office	Exterior Lighting	Linear Lighting	lamps	Existing	90.99	17	\$52.83	100%	at stock turnover	\$0.04	170.80	162.24	7th Power Plan
Large Office	Exterior Lighting	Area Lighting	lamps	Existing	1,221.23	15	\$44.55	100%	at stock turnover	-\$0.02	1,110.10	1,046.91	Annual Energy Outlook, 2015
Large Office	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	Existing	1,507.00	11	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Large Office	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	Existing	605.00	15	\$0.00	14%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Large Office	Refrigeration	Glass Door Display	1 unit	Existing	767.00	15	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Large Office	Refrigeration	Open Display Case	1 unit	Existing	1,438.00	10	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Large Office	Refrigeration	Icemaker	1 unit	Existing	443.88	9	\$1,056.09	45%	at stock turnover	\$0.37	2.79	2.81	ENERGY STAR
Large Office	Refrigeration	Vending Machine	1 unit	Existing	81.00	10	\$42.81	45%	at stock turnover	\$0.07	1.55	1.55	EIA 2011-2012 Ref. Case
Large Office	Food Preparation	Oven	1 unit	Existing	15,104.75	10	\$1,067.99	66%	at stock turnover	-\$0.01	29.04	29.04	RTF Workbook
Large Office	Food Preparation	Fryer	1 unit	Existing	2,881.11	10	\$782.02	76%	at stock turnover	\$0.04	25.89	25.89	RTF Workbook
Large Office	Food Preparation	Dishwasher	1 unit	Existing	1,348.33	15	\$564.57	43%	at stock turnover	-\$0.13	6.92	6.92	ENERGY STAR
Large Office	Food Preparation	Hot Food Container	1 unit	Existing	802.23	20	\$490.95	43%	at stock turnover	\$0.06	7.55	7.55	RTF Workbook
Large Office	Food Preparation	Steamer	1 unit	Existing	66,188.82	9	\$837.45	43%	at stock turnover	-\$0.02	93.24	93.24	RTF Workbook
Large Office	Office Equipment	Desktop Computer	1 unit	Existing	123.52	5	\$0.01	100%	at stock turnover	\$0.00	1,046.64	1,046.64	7th Power Plan
Large Office	Office Equipment	Laptop	1 unit	Existing	36.86	4	\$0.01	100%	at stock turnover	\$0.00	128.37	128.37	7th Power Plan
Large Office	Office Equipment	Monitor	1 unit	Existing	30.65	5	\$0.01	100%	at stock turnover	\$0.00	65.53	65.53	7th Power Plan
Large Office	Office Equipment	Server	1 unit	Existing	74.10	4	\$0.01	100%	at stock turnover	\$0.00	97.28	97.28	AEG Research
Large Office	Office Equipment	Printer/Copier/Fax	1 unit	Existing	223.00	6	\$0.01	100%	at stock turnover	\$0.00	19.94	19.94	ENERGY STAR
Large Office	Office Equipment	POS Terminal	1 unit	Existing	123.52	5	\$0.01	40%	at stock turnover	\$0.00	8.12	8.12	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Large Office	Miscellaneous	Non-HVAC Motors	1 unit	Existing	0.00	15	\$0.00	90%	at stock turnover	\$0.00	0.00	0.00	N/A
Large Office	Miscellaneous	Pool Pump	1 unit	Existing	0.00	10	\$246.30	0%	at stock turnover	\$0.00	0.00	0.00	Southern California Edison
Large Office	Miscellaneous	Pool Heater	1 unit	Existing	0.00	15	\$3,546.07	0%	at stock turnover	\$0.00	0.00	0.00	AEG Research
Large Office	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Large Office	Cooling	Air-Cooled Chiller	1 kBTU/hr	New	24.37	20	\$26.36	14%	at stock turnover	\$0.10	141.02	141.02	Annual Energy Outlook, 2015
Large Office	Cooling	Water-Cooled Chiller	1 kBTU/hr	New	37.86	25	\$12.65	9%	at stock turnover	\$0.03	119.02	119.02	Annual Energy Outlook, 2015
Large Office	Cooling	RTU	1 kBTU/hr	New	3.19	15	\$6.75	45%	at stock turnover	\$0.23	54.70	54.70	Annual Energy Outlook, 2015
Large Office	Cooling	Room AC	1 kBTU/hr	New	12.73	15	\$23.62	2%	at stock turnover	\$0.20	11.55	11.55	Annual Energy Outlook, 2015
Large Office	Cooling	Evaporative AC	11 per TR	New	0.00	15	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	New Buildings Institute Study, 2006
Large Office	Cooling	Air-Source Heat Pump	1 kBTU/hr	New	6.13	15	\$21.65	14%	at stock turnover	\$0.25	25.77	25.77	Annual Energy Outlook, 2015
Large Office	Heating	Air-Source Heat Pump	1 kBTU/hr	New	3.48	15	\$21.65	14%	at stock turnover	\$0.25	14.63	14.63	Annual Energy Outlook, 2015
Large Office	Cooling	Geothermal Heat Pump	1 kBTU/hr	New	14.87	25	\$26.36	8%	at stock turnover	\$0.09	27.72	27.72	Annual Energy Outlook, 2015
Large Office	Heating	Geothermal Heat Pump	1 kBTU/hr	New	12.96	25	\$26.36	8%	at stock turnover	\$0.09	24.17	24.17	Annual Energy Outlook, 2015
Large Office	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	1%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Large Office	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	24%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Large Office	Ventilation	Ventilation	1000 CFM	New	8,604.60	20	\$1,219.71	100%	at stock turnover	\$0.01	281.37	281.37	AEG-BEST
Large Office	Water Heating	Water Heater	65 gallons	New	2,164.01	13	\$3,537.01	45%	at stock turnover	\$0.19	318.93	318.93	7th Power Plan
Large Office	Interior Lighting	Screw-in	lamps	New	47.12	8	\$3.95	100%	at stock turnover	\$0.00	34.85	44.02	7th Power Plan
Large Office	Interior Lighting	Linear Lighting	lamps	New	65.98	17	\$52.83	100%	at stock turnover	\$0.06	881.46	845.40	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Large Office	Interior Lighting	High-Bay Fixtures	lamps	New	235.03	15	\$123.86	100%	at stock turnover	\$0.06	288.77	278.96	Annual Energy Outlook, 2015
Large Office	Exterior Lighting	Screw-in	lamps	New	80.28	8	\$3.95	100%	at stock turnover	\$0.00	6.29	9.53	7th Power Plan
Large Office	Exterior Lighting	Linear Lighting	lamps	New	90.99	17	\$52.83	100%	at stock turnover	\$0.04	91.99	88.22	7th Power Plan
Large Office	Exterior Lighting	Area Lighting	lamps	New	1,221.23	15	\$44.55	100%	at stock turnover	-\$0.02	709.03	678.85	Annual Energy Outlook, 2015
Large Office	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	New	1,507.00	11	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Large Office	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	New	605.00	15	\$0.00	14%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Large Office	Refrigeration	Glass Door Display	1 unit	New	767.00	15	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Large Office	Refrigeration	Open Display Case	1 unit	New	1,438.00	10	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Large Office	Refrigeration	Icemaker	1 unit	New	443.88	9	\$1,056.09	45%	at stock turnover	\$0.37	1.61	1.61	ENERGY STAR
Large Office	Refrigeration	Vending Machine	1 unit	New	81.00	10	\$42.81	45%	at stock turnover	\$0.07	1.13	1.13	EIA 2011-2012 Ref. Case
Large Office	Food Preparation	Oven	1 unit	New	15,104.75	10	\$1,067.99	66%	at stock turnover	-\$0.01	16.73	16.73	RTF Workbook
Large Office	Food Preparation	Fryer	1 unit	New	2,881.11	10	\$782.02	76%	at stock turnover	\$0.04	14.39	14.39	RTF Workbook
Large Office	Food Preparation	Dishwasher	1 unit	New	1,348.33	15	\$564.57	43%	at stock turnover	-\$0.13	3.12	3.12	ENERGY STAR
Large Office	Food Preparation	Hot Food Container	1 unit	New	802.23	20	\$490.95	43%	at stock turnover	\$0.06	5.53	5.53	RTF Workbook
Large Office	Food Preparation	Steamer	1 unit	New	66,188.82	9	\$837.45	43%	at stock turnover	-\$0.02	55.89	55.89	RTF Workbook
Large Office	Office Equipment	Desktop Computer	1 unit	New	123.52	5	\$0.01	100%	at stock turnover	\$0.00	415.63	415.63	7th Power Plan
Large Office	Office Equipment	Laptop	1 unit	New	36.86	4	\$0.01	100%	at stock turnover	\$0.00	55.81	55.81	7th Power Plan
Large Office	Office Equipment	Monitor	1 unit	New	30.65	5	\$0.01	100%	at stock turnover	\$0.00	26.02	26.02	7th Power Plan
Large Office	Office Equipment	Server	1 unit	New	74.10	4	\$0.01	100%	at stock turnover	\$0.00	40.99	40.99	AEG Research

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Large Office	Office Equipment	Printer/Copier/Fax	1 unit	New	223.00	6	\$0.01	100%	at stock turnover	\$0.00	10.06	10.06	ENERGY STAR
Large Office	Office Equipment	POS Terminal	1 unit	New	123.52	5	\$0.01	40%	at stock turnover	\$0.00	3.76	3.76	7th Power Plan
Large Office	Miscellaneous	Non-HVAC Motors	1 unit	New	0.00	15	\$0.00	90%	at stock turnover	\$0.00	0.00	0.00	N/A
Large Office	Miscellaneous	Pool Pump	1 unit	New	0.00	10	\$246.30	0%	at stock turnover	\$0.00	0.00	0.00	Southern California Edison
Large Office	Miscellaneous	Pool Heater	1 unit	New	0.00	15	\$3,546.07	0%	at stock turnover	\$0.00	0.00	0.00	AEG Research
Large Office	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Small Office	Cooling	Air-Cooled Chiller	1 kBTU/hr	Existing	0.00	20	\$26.36	14%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Small Office	Cooling	Water-Cooled Chiller	1 kBTU/hr	Existing	0.00	25	\$12.65	9%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Small Office	Cooling	RTU	1 kBTU/hr	Existing	4.21	15	\$6.75	45%	at stock turnover	\$0.17	600.90	600.90	Annual Energy Outlook, 2015
Small Office	Cooling	Room AC	1 kBTU/hr	Existing	16.62	15	\$23.62	2%	at stock turnover	\$0.15	83.65	83.65	Annual Energy Outlook, 2015
Small Office	Cooling	Evaporative AC	11 per TR	Existing	0.00	15	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	New Buildings Institute Study, 2006
Small Office	Cooling	Air-Source Heat Pump	1 kBTU/hr	Existing	8.11	15	\$21.65	14%	at stock turnover	\$0.19	180.69	180.69	Annual Energy Outlook, 2015
Small Office	Heating	Air-Source Heat Pump	1 kBTU/hr	Existing	4.46	15	\$21.65	14%	at stock turnover	\$0.19	99.27	99.27	Annual Energy Outlook, 2015
Small Office	Cooling	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	8%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Small Office	Heating	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	8%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Small Office	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	1%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Small Office	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	24%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Small Office	Ventilation	Ventilation	1000 CFM	Existing	6,762.10	20	\$1,219.71	100%	at stock turnover	\$0.02	1,583.53	1,583.53	AEG-BEST
Small Office	Water Heating	Water Heater	65 gallons	Existing	2,051.41	13	\$3,537.01	45%	at stock turnover	\$0.20	2,354.70	2,354.70	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Small Office	Interior Lighting	Screw-in	lamps	Existing	48.68	8	\$3.95	100%	at stock turnover	\$0.00	361.43	703.17	7th Power Plan
Small Office	Interior Lighting	Linear Lighting	lamps	Existing	70.96	17	\$52.83	100%	at stock turnover	\$0.05	5,743.45	5,457.94	7th Power Plan
Small Office	Interior Lighting	High-Bay Fixtures	lamps	Existing	354.21	15	\$123.86	100%	at stock turnover	\$0.04	2,576.65	2,472.24	Annual Energy Outlook, 2015
Small Office	Exterior Lighting	Screw-in	lamps	Existing	74.71	8	\$3.95	100%	at stock turnover	\$0.00	197.88	334.78	7th Power Plan
Small Office	Exterior Lighting	Linear Lighting	lamps	Existing	117.36	17	\$52.83	100%	at stock turnover	\$0.03	270.92	257.46	7th Power Plan
Small Office	Exterior Lighting	Area Lighting	lamps	Existing	1,091.70	15	\$44.55	100%	at stock turnover	-\$0.02	5,131.81	4,842.68	Annual Energy Outlook, 2015
Small Office	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	Existing	1,507.00	11	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Small Office	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	Existing	605.00	15	\$0.00	14%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Small Office	Refrigeration	Glass Door Display	1 unit	Existing	767.00	15	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Small Office	Refrigeration	Open Display Case	1 unit	Existing	1,438.00	10	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Small Office	Refrigeration	Icemaker	1 unit	Existing	443.88	9	\$1,056.09	45%	at stock turnover	\$0.37	5.90	5.94	ENERGY STAR
Small Office	Refrigeration	Vending Machine	1 unit	Existing	81.00	10	\$42.81	45%	at stock turnover	\$0.07	5.30	5.30	EIA 2011-2012 Ref. Case
Small Office	Food Preparation	Oven	1 unit	Existing	15,104.75	10	\$1,067.99	66%	at stock turnover	-\$0.01	89.18	89.18	RTF Workbook
Small Office	Food Preparation	Fryer	1 unit	Existing	2,881.11	10	\$782.02	76%	at stock turnover	\$0.04	9.55	9.55	RTF Workbook
Small Office	Food Preparation	Dishwasher	1 unit	Existing	1,348.33	15	\$564.57	43%	at stock turnover	-\$0.13	27.67	27.67	ENERGY STAR
Small Office	Food Preparation	Hot Food Container	1 unit	Existing	802.23	20	\$490.95	43%	at stock turnover	\$0.06	16.61	16.61	RTF Workbook
Small Office	Food Preparation	Steamer	1 unit	Existing	66,188.82	9	\$837.45	43%	at stock turnover	-\$0.02	195.98	195.98	RTF Workbook
Small Office	Office Equipment	Desktop Computer	1 unit	Existing	123.52	5	\$0.01	100%	at stock turnover	\$0.00	2,020.44	2,020.44	7th Power Plan
Small Office	Office Equipment	Laptop	1 unit	Existing	36.86	4	\$0.01	100%	at stock turnover	\$0.00	247.81	247.81	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Small Office	Office Equipment	Monitor	1 unit	Existing	30.65	5	\$0.01	100%	at stock turnover	\$0.00	126.50	126.50	7th Power Plan
Small Office	Office Equipment	Server	1 unit	Existing	74.10	4	\$0.01	100%	at stock turnover	\$0.00	563.39	563.39	AEG Research
Small Office	Office Equipment	Printer/Copier/Fax	1 unit	Existing	223.00	6	\$0.01	100%	at stock turnover	\$0.00	57.74	57.74	ENERGY STAR
Small Office	Office Equipment	POS Terminal	1 unit	Existing	123.52	5	\$0.01	40%	at stock turnover	\$0.00	48.76	48.76	7th Power Plan
Small Office	Miscellaneous	Non-HVAC Motors	1 unit	Existing	0.00	15	\$0.00	90%	at stock turnover	\$0.00	0.00	0.00	N/A
Small Office	Miscellaneous	Pool Pump	1 unit	Existing	0.00	10	\$246.30	0%	at stock turnover	\$0.00	0.00	0.00	Southern California Edison
Small Office	Miscellaneous	Pool Heater	1 unit	Existing	0.00	15	\$3,546.07	0%	at stock turnover	\$0.00	0.00	0.00	AEG Research
Small Office	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Small Office	Cooling	Air-Cooled Chiller	1 kBTU/hr	New	0.00	20	\$26.36	14%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Small Office	Cooling	Water-Cooled Chiller	1 kBTU/hr	New	0.00	25	\$12.65	9%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Small Office	Cooling	RTU	1 kBTU/hr	New	3.46	15	\$6.75	45%	at stock turnover	\$0.21	312.71	312.71	Annual Energy Outlook, 2015
Small Office	Cooling	Room AC	1 kBTU/hr	New	14.55	15	\$23.62	2%	at stock turnover	\$0.18	46.42	46.42	Annual Energy Outlook, 2015
Small Office	Cooling	Evaporative AC	11 per TR	New	0.00	15	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	New Buildings Institute Study, 2006
Small Office	Cooling	Air-Source Heat Pump	1 kBTU/hr	New	7.01	15	\$21.65	14%	at stock turnover	\$0.21	103.53	103.53	Annual Energy Outlook, 2015
Small Office	Heating	Air-Source Heat Pump	1 kBTU/hr	New	4.28	15	\$21.65	14%	at stock turnover	\$0.21	63.16	63.16	Annual Energy Outlook, 2015
Small Office	Cooling	Geothermal Heat Pump	1 kBTU/hr	New	16.11	25	\$26.36	8%	at stock turnover	\$0.09	105.59	105.59	Annual Energy Outlook, 2015
Small Office	Heating	Geothermal Heat Pump	1 kBTU/hr	New	11.98	25	\$26.36	8%	at stock turnover	\$0.09	78.55	78.55	Annual Energy Outlook, 2015
Small Office	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	1%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Small Office	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	24%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Small Office	Ventilation	Ventilation	1000 CFM	New	6,146.49	20	\$1,219.71	100%	at stock turnover	\$0.02	957.47	957.47	AEG-BEST
Small Office	Water Heating	Water Heater	65 gallons	New	2,163.68	13	\$3,537.01	45%	at stock turnover	\$0.19	1,391.91	1,391.91	7th Power Plan
Small Office	Interior Lighting	Screw-in	lamps	New	48.68	8	\$3.95	100%	at stock turnover	\$0.00	124.78	159.12	7th Power Plan
Small Office	Interior Lighting	Linear Lighting	lamps	New	70.96	17	\$52.83	100%	at stock turnover	\$0.05	3,083.65	2,958.01	7th Power Plan
Small Office	Interior Lighting	High-Bay Fixtures	lamps	New	354.21	15	\$123.86	100%	at stock turnover	\$0.04	1,557.24	1,509.00	Annual Energy Outlook, 2015
Small Office	Exterior Lighting	Screw-in	lamps	New	74.71	8	\$3.95	100%	at stock turnover	\$0.00	78.02	89.22	7th Power Plan
Small Office	Exterior Lighting	Linear Lighting	lamps	New	117.36	17	\$52.83	100%	at stock turnover	\$0.03	145.46	139.53	7th Power Plan
Small Office	Exterior Lighting	Area Lighting	lamps	New	1,091.70	15	\$44.55	100%	at stock turnover	-\$0.02	3,294.53	3,156.42	Annual Energy Outlook, 2015
Small Office	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	New	1,507.00	11	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Small Office	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	New	605.00	15	\$0.00	14%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Small Office	Refrigeration	Glass Door Display	1 unit	New	767.00	15	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Small Office	Refrigeration	Open Display Case	1 unit	New	1,438.00	10	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Small Office	Refrigeration	Icemaker	1 unit	New	443.88	9	\$1,056.09	45%	at stock turnover	\$0.37	3.59	3.60	ENERGY STAR
Small Office	Refrigeration	Vending Machine	1 unit	New	81.00	10	\$42.81	45%	at stock turnover	\$0.07	1.87	1.87	EIA 2011-2012 Ref. Case
Small Office	Food Preparation	Oven	1 unit	New	15,104.75	10	\$1,067.99	66%	at stock turnover	-\$0.01	53.43	53.43	RTF Workbook
Small Office	Food Preparation	Fryer	1 unit	New	2,881.11	10	\$782.02	76%	at stock turnover	\$0.04	5.31	5.31	RTF Workbook
Small Office	Food Preparation	Dishwasher	1 unit	New	1,348.33	15	\$564.57	43%	at stock turnover	-\$0.13	6.94	6.94	ENERGY STAR
Small Office	Food Preparation	Hot Food Container	1 unit	New	802.23	20	\$490.95	43%	at stock turnover	\$0.06	12.70	12.70	RTF Workbook
Small Office	Food Preparation	Steamer	1 unit	New	66,188.82	9	\$837.45	43%	at stock turnover	-\$0.02	119.65	119.65	RTF Workbook

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Small Office	Office Equipment	Desktop Computer	1 unit	New	123.52	5	\$0.01	100%	at stock turnover	\$0.00	802.33	802.33	7th Power Plan
Small Office	Office Equipment	Laptop	1 unit	New	36.86	4	\$0.01	100%	at stock turnover	\$0.00	107.74	107.74	7th Power Plan
Small Office	Office Equipment	Monitor	1 unit	New	30.65	5	\$0.01	100%	at stock turnover	\$0.00	50.23	50.23	7th Power Plan
Small Office	Office Equipment	Server	1 unit	New	74.10	4	\$0.01	100%	at stock turnover	\$0.00	237.36	237.36	AEG Research
Small Office	Office Equipment	Printer/Copier/Fax	1 unit	New	223.00	6	\$0.01	100%	at stock turnover	\$0.00	29.12	29.12	ENERGY STAR
Small Office	Office Equipment	POS Terminal	1 unit	New	123.52	5	\$0.01	40%	at stock turnover	\$0.00	21.77	21.77	7th Power Plan
Small Office	Miscellaneous	Non-HVAC Motors	1 unit	New	0.00	15	\$0.00	90%	at stock turnover	\$0.00	0.00	0.00	N/A
Small Office	Miscellaneous	Pool Pump	1 unit	New	0.00	10	\$246.30	0%	at stock turnover	\$0.00	0.00	0.00	Southern California Edison
Small Office	Miscellaneous	Pool Heater	1 unit	New	0.00	15	\$3,546.07	0%	at stock turnover	\$0.00	0.00	0.00	AEG Research
Small Office	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Large Retail	Cooling	Air-Cooled Chiller	1 kBTU/hr	Existing	16.74	20	\$26.36	14%	at stock turnover	\$0.15	12.17	12.17	Annual Energy Outlook, 2015
Large Retail	Cooling	Water-Cooled Chiller	1 kBTU/hr	Existing	26.37	25	\$12.65	9%	at stock turnover	\$0.04	11.81	11.81	Annual Energy Outlook, 2015
Large Retail	Cooling	RTU	1 kBTU/hr	Existing	2.69	15	\$6.75	45%	at stock turnover	\$0.27	163.79	163.79	Annual Energy Outlook, 2015
Large Retail	Cooling	Room AC	1 kBTU/hr	Existing	10.62	15	\$23.62	2%	at stock turnover	\$0.24	28.29	28.29	Annual Energy Outlook, 2015
Large Retail	Cooling	Evaporative AC	11 per TR	Existing	0.00	15	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	New Buildings Institute Study, 2006
Large Retail	Cooling	Air-Source Heat Pump	1 kBTU/hr	Existing	5.18	15	\$21.65	14%	at stock turnover	\$0.31	12.26	12.26	Annual Energy Outlook, 2015
Large Retail	Heating	Air-Source Heat Pump	1 kBTU/hr	Existing	2.46	15	\$21.65	14%	at stock turnover	\$0.31	5.83	5.83	Annual Energy Outlook, 2015
Large Retail	Cooling	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	8%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Large Retail	Heating	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	8%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Large Retail	Heating	Electric Furnace	1 kBtu/hr	Existing	0.00	18	\$0.00	1%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Large Retail	Heating	Electric Room Heat	3.5 kBtu/hr	Existing	0.00	18	\$0.00	24%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Large Retail	Ventilation	Ventilation	1000 CFM	Existing	6,695.35	20	\$1,219.71	100%	at stock turnover	\$0.02	1,070.03	1,070.03	AEG-BEST
Large Retail	Water Heating	Water Heater	65 gallons	Existing	2,080.23	13	\$3,537.01	45%	at stock turnover	\$0.20	733.96	733.96	7th Power Plan
Large Retail	Interior Lighting	Screw-in	lamps	Existing	126.01	8	\$3.95	100%	at stock turnover	\$0.00	198.81	560.43	7th Power Plan
Large Retail	Interior Lighting	Linear Lighting	lamps	Existing	142.69	17	\$52.83	100%	at stock turnover	\$0.03	2,652.45	2,521.64	7th Power Plan
Large Retail	Interior Lighting	High-Bay Fixtures	lamps	Existing	626.84	15	\$123.86	100%	at stock turnover	\$0.02	1,003.33	962.70	Annual Energy Outlook, 2015
Large Retail	Exterior Lighting	Screw-in	lamps	Existing	86.91	8	\$3.95	100%	at stock turnover	\$0.00	55.80	120.90	7th Power Plan
Large Retail	Exterior Lighting	Linear Lighting	lamps	Existing	134.65	17	\$52.83	100%	at stock turnover	\$0.03	70.88	67.38	7th Power Plan
Large Retail	Exterior Lighting	Area Lighting	lamps	Existing	1,128.26	15	\$44.55	100%	at stock turnover	-\$0.02	555.43	523.20	Annual Energy Outlook, 2015
Large Retail	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	Existing	1,507.00	11	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Large Retail	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	Existing	605.00	15	\$0.00	14%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Large Retail	Refrigeration	Glass Door Display	1 unit	Existing	767.00	15	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Large Retail	Refrigeration	Open Display Case	1 unit	Existing	1,438.00	10	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Large Retail	Refrigeration	Icemaker	1 unit	Existing	443.88	9	\$1,056.09	45%	at stock turnover	\$0.37	13.91	14.03	ENERGY STAR
Large Retail	Refrigeration	Vending Machine	1 unit	Existing	81.00	10	\$42.81	45%	at stock turnover	\$0.07	2.84	2.84	EIA 2011-2012 Ref. Case
Large Retail	Food Preparation	Oven	1 unit	Existing	15,104.75	10	\$1,067.99	66%	at stock turnover	-\$0.01	39.54	39.54	RTF Workbook
Large Retail	Food Preparation	Fryer	1 unit	Existing	2,881.11	10	\$782.02	76%	at stock turnover	\$0.04	26.14	26.14	RTF Workbook
Large Retail	Food Preparation	Dishwasher	1 unit	Existing	1,348.33	15	\$564.57	43%	at stock turnover	-\$0.13	11.50	11.50	ENERGY STAR

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Large Retail	Food Preparation	Hot Food Container	1 unit	Existing	802.23	20	\$490.95	43%	at stock turnover	\$0.06	11.94	11.94	RTF Workbook
Large Retail	Food Preparation	Steamer	1 unit	Existing	66,188.82	9	\$837.45	43%	at stock turnover	-\$0.02	148.91	148.91	RTF Workbook
Large Retail	Office Equipment	Desktop Computer	1 unit	Existing	123.52	5	\$0.01	100%	at stock turnover	\$0.00	124.35	124.35	7th Power Plan
Large Retail	Office Equipment	Laptop	1 unit	Existing	36.86	4	\$0.01	100%	at stock turnover	\$0.00	15.37	15.37	7th Power Plan
Large Retail	Office Equipment	Monitor	1 unit	Existing	30.65	5	\$0.01	100%	at stock turnover	\$0.00	7.79	7.79	7th Power Plan
Large Retail	Office Equipment	Server	1 unit	Existing	74.10	4	\$0.01	100%	at stock turnover	\$0.00	15.43	15.43	AEG Research
Large Retail	Office Equipment	Printer/Copier/Fax	1 unit	Existing	223.00	6	\$0.01	100%	at stock turnover	\$0.00	3.61	3.61	ENERGY STAR
Large Retail	Office Equipment	POS Terminal	1 unit	Existing	123.52	5	\$0.01	40%	at stock turnover	\$0.00	4.29	4.29	7th Power Plan
Large Retail	Miscellaneous	Non-HVAC Motors	1 unit	Existing	0.00	15	\$0.00	90%	at stock turnover	\$0.00	0.00	0.00	N/A
Large Retail	Miscellaneous	Pool Pump	1 unit	Existing	0.00	10	\$246.30	0%	at stock turnover	\$0.00	0.00	0.00	Southern California Edison
Large Retail	Miscellaneous	Pool Heater	1 unit	Existing	0.00	15	\$3,546.07	0%	at stock turnover	\$0.00	0.00	0.00	AEG Research
Large Retail	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Large Retail	Cooling	Air-Cooled Chiller	1 kBTU/hr	New	14.41	20	\$26.36	14%	at stock turnover	\$0.17	7.76	7.76	Annual Energy Outlook, 2015
Large Retail	Cooling	Water-Cooled Chiller	1 kBTU/hr	New	22.94	25	\$12.65	9%	at stock turnover	\$0.05	6.75	6.75	Annual Energy Outlook, 2015
Large Retail	Cooling	RTU	1 kBTU/hr	New	2.62	15	\$6.75	45%	at stock turnover	\$0.28	90.23	90.23	Annual Energy Outlook, 2015
Large Retail	Cooling	Room AC	1 kBTU/hr	New	9.29	15	\$23.62	2%	at stock turnover	\$0.28	14.03	14.03	Annual Energy Outlook, 2015
Large Retail	Cooling	Evaporative AC	11 per TR	New	0.00	15	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	New Buildings Institute Study, 2006
Large Retail	Cooling	Air-Source Heat Pump	1 kBTU/hr	New	4.48	15	\$21.65	14%	at stock turnover	\$0.35	6.27	6.27	Annual Energy Outlook, 2015
Large Retail	Heating	Air-Source Heat Pump	1 kBTU/hr	New	2.36	15	\$21.65	14%	at stock turnover	\$0.35	3.31	3.31	Annual Energy Outlook, 2015

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Large Retail	Cooling	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	8%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Large Retail	Heating	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	8%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Large Retail	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	1%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Large Retail	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	24%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Large Retail	Ventilation	Ventilation	1000 CFM	New	5,794.64	20	\$1,219.71	100%	at stock turnover	\$0.02	563.32	563.32	AEG-BEST
Large Retail	Water Heating	Water Heater	65 gallons	New	2,098.45	13	\$3,537.01	45%	at stock turnover	\$0.20	370.00	370.00	7th Power Plan
Large Retail	Interior Lighting	Screw-in	lamps	New	126.01	8	\$3.95	100%	at stock turnover	\$0.00	72.81	107.00	7th Power Plan
Large Retail	Interior Lighting	Linear Lighting	lamps	New	142.69	17	\$52.83	100%	at stock turnover	\$0.03	1,270.71	1,218.78	7th Power Plan
Large Retail	Interior Lighting	High-Bay Fixtures	lamps	New	626.84	15	\$123.86	100%	at stock turnover	\$0.02	567.18	550.24	Annual Energy Outlook, 2015
Large Retail	Exterior Lighting	Screw-in	lamps	New	86.91	8	\$3.95	100%	at stock turnover	\$0.00	18.44	24.30	7th Power Plan
Large Retail	Exterior Lighting	Linear Lighting	lamps	New	134.65	17	\$52.83	100%	at stock turnover	\$0.03	33.95	32.56	7th Power Plan
Large Retail	Exterior Lighting	Area Lighting	lamps	New	1,128.26	15	\$44.55	100%	at stock turnover	-\$0.02	305.89	291.96	Annual Energy Outlook, 2015
Large Retail	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	New	1,507.00	11	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Large Retail	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	New	605.00	15	\$0.00	14%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Large Retail	Refrigeration	Glass Door Display	1 unit	New	767.00	15	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Large Retail	Refrigeration	Open Display Case	1 unit	New	1,438.00	10	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Large Retail	Refrigeration	Icemaker	1 unit	New	443.88	9	\$1,056.09	45%	at stock turnover	\$0.37	7.23	7.26	ENERGY STAR
Large Retail	Refrigeration	Vending Machine	1 unit	New	81.00	10	\$42.81	45%	at stock turnover	\$0.07	1.41	1.41	EIA 2011-2012 Ref. Case
Large Retail	Food Preparation	Oven	1 unit	New	15,104.75	10	\$1,067.99	66%	at stock turnover	-\$0.01	19.73	19.73	RTF Workbook

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Large Retail	Food Preparation	Fryer	1 unit	New	2,881.11	10	\$782.02	76%	at stock turnover	\$0.04	12.89	12.89	RTF Workbook
Large Retail	Food Preparation	Dishwasher	1 unit	New	1,348.33	15	\$564.57	43%	at stock turnover	-\$0.13	4.42	4.42	ENERGY STAR
Large Retail	Food Preparation	Hot Food Container	1 unit	New	802.23	20	\$490.95	43%	at stock turnover	\$0.06	7.89	7.89	RTF Workbook
Large Retail	Food Preparation	Steamer	1 unit	New	66,188.82	9	\$837.45	43%	at stock turnover	-\$0.02	79.23	79.23	RTF Workbook
Large Retail	Office Equipment	Desktop Computer	1 unit	New	123.52	5	\$0.01	100%	at stock turnover	\$0.00	44.21	44.21	7th Power Plan
Large Retail	Office Equipment	Laptop	1 unit	New	36.86	4	\$0.01	100%	at stock turnover	\$0.00	5.96	5.96	7th Power Plan
Large Retail	Office Equipment	Monitor	1 unit	New	30.65	5	\$0.01	100%	at stock turnover	\$0.00	2.77	2.77	7th Power Plan
Large Retail	Office Equipment	Server	1 unit	New	74.10	4	\$0.01	100%	at stock turnover	\$0.00	5.74	5.74	AEG Research
Large Retail	Office Equipment	Printer/Copier/Fax	1 unit	New	223.00	6	\$0.01	100%	at stock turnover	\$0.00	1.61	1.61	ENERGY STAR
Large Retail	Office Equipment	POS Terminal	1 unit	New	123.52	5	\$0.01	40%	at stock turnover	\$0.00	1.81	1.81	7th Power Plan
Large Retail	Miscellaneous	Non-HVAC Motors	1 unit	New	0.00	15	\$0.00	90%	at stock turnover	\$0.00	0.00	0.00	N/A
Large Retail	Miscellaneous	Pool Pump	1 unit	New	0.00	10	\$246.30	0%	at stock turnover	\$0.00	0.00	0.00	Southern California Edison
Large Retail	Miscellaneous	Pool Heater	1 unit	New	0.00	15	\$3,546.07	0%	at stock turnover	\$0.00	0.00	0.00	AEG Research
Large Retail	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Small Retail	Cooling	Air-Cooled Chiller	1 kBTU/hr	Existing	0.00	20	\$26.36	14%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Small Retail	Cooling	Water-Cooled Chiller	1 kBTU/hr	Existing	0.00	25	\$12.65	9%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Small Retail	Cooling	RTU	1 kBTU/hr	Existing	2.86	15	\$6.75	45%	at stock turnover	\$0.26	405.72	405.72	Annual Energy Outlook, 2015
Small Retail	Cooling	Room AC	1 kBTU/hr	Existing	10.08	15	\$23.62	2%	at stock turnover	\$0.26	50.38	50.38	Annual Energy Outlook, 2015
Small Retail	Cooling	Evaporative AC	11 per TR	Existing	0.00	15	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	New Buildings Institute Study, 2006

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Small Retail	Cooling	Air-Source Heat Pump	1 kBtu/hr	Existing	5.51	15	\$21.65	14%	at stock turnover	\$0.28	122.17	122.17	Annual Energy Outlook, 2015
Small Retail	Heating	Air-Source Heat Pump	1 kBtu/hr	Existing	3.06	15	\$21.65	14%	at stock turnover	\$0.28	67.88	67.88	Annual Energy Outlook, 2015
Small Retail	Cooling	Geothermal Heat Pump	1 kBtu/hr	Existing	0.00	25	\$26.36	8%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Small Retail	Heating	Geothermal Heat Pump	1 kBtu/hr	Existing	0.00	25	\$26.36	8%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Small Retail	Heating	Electric Furnace	1 kBtu/hr	Existing	0.00	18	\$0.00	1%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Small Retail	Heating	Electric Room Heat	3.5 kBtu/hr	Existing	0.00	18	\$0.00	24%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Small Retail	Ventilation	Ventilation	1000 CFM	Existing	2,056.20	20	\$1,219.71	100%	at stock turnover	\$0.06	905.98	905.98	AEG-BEST
Small Retail	Water Heating	Water Heater	65 gallons	Existing	2,080.28	13	\$3,537.01	45%	at stock turnover	\$0.20	1,611.24	1,611.24	7th Power Plan
Small Retail	Interior Lighting	Screw-in	lamps	Existing	83.17	8	\$3.95	100%	at stock turnover	\$0.00	361.76	1,019.76	7th Power Plan
Small Retail	Interior Lighting	Linear Lighting	lamps	Existing	94.18	17	\$52.83	100%	at stock turnover	\$0.04	4,826.37	4,588.34	7th Power Plan
Small Retail	Interior Lighting	High-Bay Fixtures	lamps	Existing	413.71	15	\$123.86	100%	at stock turnover	\$0.03	1,825.65	1,751.72	Annual Energy Outlook, 2015
Small Retail	Exterior Lighting	Screw-in	lamps	Existing	86.91	8	\$3.95	100%	at stock turnover	\$0.00	153.84	333.31	7th Power Plan
Small Retail	Exterior Lighting	Linear Lighting	lamps	Existing	134.65	17	\$52.83	100%	at stock turnover	\$0.03	195.40	185.78	7th Power Plan
Small Retail	Exterior Lighting	Area Lighting	lamps	Existing	1,128.26	15	\$44.55	100%	at stock turnover	-\$0.02	1,531.30	1,442.44	Annual Energy Outlook, 2015
Small Retail	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	Existing	1,507.00	11	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Small Retail	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	Existing	605.00	15	\$0.00	14%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Small Retail	Refrigeration	Glass Door Display	1 unit	Existing	767.00	15	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Small Retail	Refrigeration	Open Display Case	1 unit	Existing	1,438.00	10	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Small Retail	Refrigeration	Icemaker	1 unit	Existing	443.88	9	\$1,056.09	45%	at stock turnover	\$0.37	4.19	4.22	ENERGY STAR

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Small Retail	Refrigeration	Vending Machine	1 unit	Existing	81.00	10	\$42.81	45%	at stock turnover	\$0.07	1.11	1.11	EIA 2011-2012 Ref. Case
Small Retail	Food Preparation	Oven	1 unit	Existing	15,104.75	10	\$1,067.99	66%	at stock turnover	-\$0.01	28.73	28.73	RTF Workbook
Small Retail	Food Preparation	Fryer	1 unit	Existing	2,881.11	10	\$782.02	76%	at stock turnover	\$0.04	6.30	6.30	RTF Workbook
Small Retail	Food Preparation	Dishwasher	1 unit	Existing	1,348.33	15	\$564.57	43%	at stock turnover	-\$0.13	18.56	18.56	ENERGY STAR
Small Retail	Food Preparation	Hot Food Container	1 unit	Existing	802.23	20	\$490.95	43%	at stock turnover	\$0.06	11.23	11.23	RTF Workbook
Small Retail	Food Preparation	Steamer	1 unit	Existing	66,188.82	9	\$837.45	43%	at stock turnover	-\$0.02	131.16	131.16	RTF Workbook
Small Retail	Office Equipment	Desktop Computer	1 unit	Existing	123.52	5	\$0.01	100%	at stock turnover	\$0.00	108.98	108.98	7th Power Plan
Small Retail	Office Equipment	Laptop	1 unit	Existing	36.86	4	\$0.01	100%	at stock turnover	\$0.00	13.47	13.47	7th Power Plan
Small Retail	Office Equipment	Monitor	1 unit	Existing	30.65	5	\$0.01	100%	at stock turnover	\$0.00	6.82	6.82	7th Power Plan
Small Retail	Office Equipment	Server	1 unit	Existing	74.10	4	\$0.01	100%	at stock turnover	\$0.00	123.04	123.04	AEG Research
Small Retail	Office Equipment	Printer/Copier/Fax	1 unit	Existing	223.00	6	\$0.01	100%	at stock turnover	\$0.00	2.53	2.53	ENERGY STAR
Small Retail	Office Equipment	POS Terminal	1 unit	Existing	123.52	5	\$0.01	40%	at stock turnover	\$0.00	50.15	50.15	7th Power Plan
Small Retail	Miscellaneous	Non-HVAC Motors	1 unit	Existing	0.00	15	\$0.00	90%	at stock turnover	\$0.00	0.00	0.00	N/A
Small Retail	Miscellaneous	Pool Pump	1 unit	Existing	0.00	10	\$246.30	0%	at stock turnover	\$0.00	0.00	0.00	Southern California Edison
Small Retail	Miscellaneous	Pool Heater	1 unit	Existing	0.00	15	\$3,546.07	0%	at stock turnover	\$0.00	0.00	0.00	AEG Research
Small Retail	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Small Retail	Cooling	Air-Cooled Chiller	1 kBTU/hr	New	0.00	20	\$26.36	14%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Small Retail	Cooling	Water-Cooled Chiller	1 kBTU/hr	New	0.00	25	\$12.65	9%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Small Retail	Cooling	RTU	1 kBTU/hr	New	2.81	15	\$6.75	45%	at stock turnover	\$0.26	226.01	226.01	Annual Energy Outlook, 2015

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Small Retail	Cooling	Room AC	1 kBTU/hr	New	8.82	15	\$23.62	2%	at stock turnover	\$0.29	24.98	24.98	Annual Energy Outlook, 2015
Small Retail	Cooling	Evaporative AC	11 per TR	New	0.00	15	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	New Buildings Institute Study, 2006
Small Retail	Cooling	Air-Source Heat Pump	1 kBTU/hr	New	4.76	15	\$21.65	14%	at stock turnover	\$0.31	62.42	62.42	Annual Energy Outlook, 2015
Small Retail	Heating	Air-Source Heat Pump	1 kBTU/hr	New	2.94	15	\$21.65	14%	at stock turnover	\$0.31	38.51	38.51	Annual Energy Outlook, 2015
Small Retail	Cooling	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	8%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Small Retail	Heating	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	8%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Small Retail	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	1%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Small Retail	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	24%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Small Retail	Ventilation	Ventilation	1000 CFM	New	1,939.45	20	\$1,219.71	100%	at stock turnover	\$0.06	519.80	519.80	AEG-BEST
Small Retail	Water Heating	Water Heater	65 gallons	New	2,098.49	13	\$3,537.01	45%	at stock turnover	\$0.20	812.24	812.24	7th Power Plan
Small Retail	Interior Lighting	Screw-in	lamps	New	83.17	8	\$3.95	100%	at stock turnover	\$0.00	132.49	194.70	7th Power Plan
Small Retail	Interior Lighting	Linear Lighting	lamps	New	94.18	17	\$52.83	100%	at stock turnover	\$0.04	2,312.17	2,217.68	7th Power Plan
Small Retail	Interior Lighting	High-Bay Fixtures	lamps	New	413.71	15	\$123.86	100%	at stock turnover	\$0.03	1,032.03	1,001.22	Annual Energy Outlook, 2015
Small Retail	Exterior Lighting	Screw-in	lamps	New	86.91	8	\$3.95	100%	at stock turnover	\$0.00	50.83	66.98	7th Power Plan
Small Retail	Exterior Lighting	Linear Lighting	lamps	New	134.65	17	\$52.83	100%	at stock turnover	\$0.03	93.60	89.78	7th Power Plan
Small Retail	Exterior Lighting	Area Lighting	lamps	New	1,128.26	15	\$44.55	100%	at stock turnover	-\$0.02	843.31	804.91	Annual Energy Outlook, 2015
Small Retail	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	New	1,507.00	11	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Small Retail	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	New	605.00	15	\$0.00	14%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Small Retail	Refrigeration	Glass Door Display	1 unit	New	767.00	15	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Small Retail	Refrigeration	Open Display Case	1 unit	New	1,438.00	10	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Small Retail	Refrigeration	Icemaker	1 unit	New	443.88	9	\$1,056.09	45%	at stock turnover	\$0.37	1.91	1.91	ENERGY STAR
Small Retail	Refrigeration	Vending Machine	1 unit	New	81.00	10	\$42.81	45%	at stock turnover	\$0.07	0.37	0.37	EIA 2011-2012 Ref. Case
Small Retail	Food Preparation	Oven	1 unit	New	15,104.75	10	\$1,067.99	66%	at stock turnover	-\$0.01	14.60	14.60	RTF Workbook
Small Retail	Food Preparation	Fryer	1 unit	New	2,881.11	10	\$782.02	76%	at stock turnover	\$0.04	3.11	3.11	RTF Workbook
Small Retail	Food Preparation	Dishwasher	1 unit	New	1,348.33	15	\$564.57	43%	at stock turnover	-\$0.13	4.07	4.07	ENERGY STAR
Small Retail	Food Preparation	Hot Food Container	1 unit	New	802.23	20	\$490.95	43%	at stock turnover	\$0.06	7.46	7.46	RTF Workbook
Small Retail	Food Preparation	Steamer	1 unit	New	66,188.82	9	\$837.45	43%	at stock turnover	-\$0.02	70.05	70.05	RTF Workbook
Small Retail	Office Equipment	Desktop Computer	1 unit	New	123.52	5	\$0.01	100%	at stock turnover	\$0.00	38.74	38.74	7th Power Plan
Small Retail	Office Equipment	Laptop	1 unit	New	36.86	4	\$0.01	100%	at stock turnover	\$0.00	5.22	5.22	7th Power Plan
Small Retail	Office Equipment	Monitor	1 unit	New	30.65	5	\$0.01	100%	at stock turnover	\$0.00	2.43	2.43	7th Power Plan
Small Retail	Office Equipment	Server	1 unit	New	74.10	4	\$0.01	100%	at stock turnover	\$0.00	46.02	46.02	AEG Research
Small Retail	Office Equipment	Printer/Copier/Fax	1 unit	New	223.00	6	\$0.01	100%	at stock turnover	\$0.00	1.13	1.13	ENERGY STAR
Small Retail	Office Equipment	POS Terminal	1 unit	New	123.52	5	\$0.01	40%	at stock turnover	\$0.00	21.16	21.16	7th Power Plan
Small Retail	Miscellaneous	Non-HVAC Motors	1 unit	New	0.00	15	\$0.00	90%	at stock turnover	\$0.00	0.00	0.00	N/A
Small Retail	Miscellaneous	Pool Pump	1 unit	New	0.00	10	\$246.30	0%	at stock turnover	\$0.00	0.00	0.00	Southern California Edison
Small Retail	Miscellaneous	Pool Heater	1 unit	New	0.00	15	\$3,546.07	0%	at stock turnover	\$0.00	0.00	0.00	AEG Research
Small Retail	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Restaurant	Cooling	Air-Cooled Chiller	1 kBTU/hr	Existing	0.00	20	\$26.36	14%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Restaurant	Cooling	Water-Cooled Chiller	1 kBTU/hr	Existing	0.00	25	\$12.65	9%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Restaurant	Cooling	RTU	1 kBTU/hr	Existing	2.58	15	\$6.75	45%	at stock turnover	\$0.29	100.68	100.68	Annual Energy Outlook, 2015
Restaurant	Cooling	Room AC	1 kBTU/hr	Existing	10.17	15	\$23.62	2%	at stock turnover	\$0.25	14.61	14.61	Annual Energy Outlook, 2015
Restaurant	Cooling	Evaporative AC	11 per TR	Existing	0.00	15	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	New Buildings Institute Study, 2006
Restaurant	Cooling	Air-Source Heat Pump	1 kBTU/hr	Existing	4.97	15	\$21.65	14%	at stock turnover	\$0.37	16.11	16.11	Annual Energy Outlook, 2015
Restaurant	Heating	Air-Source Heat Pump	1 kBTU/hr	Existing	1.43	15	\$21.65	14%	at stock turnover	\$0.37	4.63	4.63	Annual Energy Outlook, 2015
Restaurant	Cooling	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	8%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Restaurant	Heating	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	8%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Restaurant	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	1%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Restaurant	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	24%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Restaurant	Ventilation	Ventilation	1000 CFM	Existing	963.55	20	\$1,219.71	100%	at stock turnover	\$0.12	167.76	167.76	AEG-BEST
Restaurant	Water Heating	Water Heater	65 gallons	Existing	2,164.01	13	\$3,537.01	45%	at stock turnover	\$0.19	2,298.97	2,298.97	7th Power Plan
Restaurant	Interior Lighting	Screw-in	lamps	Existing	106.65	8	\$3.95	100%	at stock turnover	\$0.00	316.59	643.60	7th Power Plan
Restaurant	Interior Lighting	Linear Lighting	lamps	Existing	165.19	17	\$52.83	100%	at stock turnover	\$0.02	779.79	741.29	7th Power Plan
Restaurant	Interior Lighting	High-Bay Fixtures	lamps	Existing	1,109.54	15	\$123.86	100%	at stock turnover	\$0.01	669.05	650.82	Annual Energy Outlook, 2015
Restaurant	Exterior Lighting	Screw-in	lamps	Existing	76.70	8	\$3.95	100%	at stock turnover	\$0.00	31.83	56.54	7th Power Plan
Restaurant	Exterior Lighting	Linear Lighting	lamps	Existing	137.09	17	\$52.83	100%	at stock turnover	\$0.03	168.98	160.64	7th Power Plan
Restaurant	Exterior Lighting	Area Lighting	lamps	Existing	1,101.83	15	\$44.55	100%	at stock turnover	-\$0.02	736.36	693.98	Annual Energy Outlook, 2015
Restaurant	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	Existing	1,507.00	11	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Restaurant	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	Existing	605.00	15	\$0.00	14%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Restaurant	Refrigeration	Glass Door Display	1 unit	Existing	767.00	15	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Restaurant	Refrigeration	Open Display Case	1 unit	Existing	1,438.00	10	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Restaurant	Refrigeration	Icemaker	1 unit	Existing	443.88	9	\$1,056.09	45%	at stock turnover	\$0.37	128.37	129.53	ENERGY STAR
Restaurant	Refrigeration	Vending Machine	1 unit	Existing	81.00	10	\$42.81	45%	at stock turnover	\$0.07	25.11	25.11	EIA 2011-2012 Ref. Case
Restaurant	Food Preparation	Oven	1 unit	Existing	15,104.75	10	\$1,067.99	66%	at stock turnover	-\$0.01	261.49	261.49	RTF Workbook
Restaurant	Food Preparation	Fryer	1 unit	Existing	2,881.11	10	\$782.02	76%	at stock turnover	\$0.04	614.78	614.78	RTF Workbook
Restaurant	Food Preparation	Dishwasher	1 unit	Existing	1,348.33	15	\$564.57	43%	at stock turnover	-\$0.13	86.90	86.90	ENERGY STAR
Restaurant	Food Preparation	Hot Food Container	1 unit	Existing	802.23	20	\$490.95	43%	at stock turnover	\$0.06	150.96	150.96	RTF Workbook
Restaurant	Food Preparation	Steamer	1 unit	Existing	66,188.82	9	\$837.45	43%	at stock turnover	-\$0.02	506.88	506.88	RTF Workbook
Restaurant	Office Equipment	Desktop Computer	1 unit	Existing	123.52	5	\$0.01	100%	at stock turnover	\$0.00	63.67	63.67	7th Power Plan
Restaurant	Office Equipment	Laptop	1 unit	Existing	36.86	4	\$0.01	100%	at stock turnover	\$0.00	6.29	6.29	7th Power Plan
Restaurant	Office Equipment	Monitor	1 unit	Existing	30.65	5	\$0.01	100%	at stock turnover	\$0.00	3.99	3.99	7th Power Plan
Restaurant	Office Equipment	Server	1 unit	Existing	74.10	4	\$0.01	100%	at stock turnover	\$0.00	48.11	48.11	AEG Research
Restaurant	Office Equipment	Printer/Copier/Fax	1 unit	Existing	223.00	6	\$0.01	100%	at stock turnover	\$0.00	2.96	2.96	ENERGY STAR
Restaurant	Office Equipment	POS Terminal	1 unit	Existing	123.52	5	\$0.01	40%	at stock turnover	\$0.00	29.30	29.30	7th Power Plan
Restaurant	Miscellaneous	Non-HVAC Motors	1 unit	Existing	0.00	15	\$0.00	90%	at stock turnover	\$0.00	0.00	0.00	N/A
Restaurant	Miscellaneous	Pool Pump	1 unit	Existing	0.00	10	\$246.30	0%	at stock turnover	\$0.00	0.00	0.00	Southern California Edison
Restaurant	Miscellaneous	Pool Heater	1 unit	Existing	0.00	15	\$3,546.07	0%	at stock turnover	\$0.00	0.00	0.00	AEG Research

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Restaurant	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Restaurant	Cooling	Air-Cooled Chiller	1 kBTU/hr	New	0.00	20	\$26.36	14%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Restaurant	Cooling	Water-Cooled Chiller	1 kBTU/hr	New	0.00	25	\$12.65	9%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Restaurant	Cooling	RTU	1 kBTU/hr	New	2.50	15	\$6.75	45%	at stock turnover	\$0.29	55.67	55.67	Annual Energy Outlook, 2015
Restaurant	Cooling	Room AC	1 kBTU/hr	New	8.90	15	\$23.62	2%	at stock turnover	\$0.29	7.25	7.25	Annual Energy Outlook, 2015
Restaurant	Cooling	Evaporative AC	11 per TR	New	0.00	15	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	New Buildings Institute Study, 2006
Restaurant	Cooling	Air-Source Heat Pump	1 kBTU/hr	New	4.82	15	\$21.65	14%	at stock turnover	\$0.38	9.25	9.25	Annual Energy Outlook, 2015
Restaurant	Heating	Air-Source Heat Pump	1 kBTU/hr	New	1.38	15	\$21.65	14%	at stock turnover	\$0.38	2.64	2.64	Annual Energy Outlook, 2015
Restaurant	Cooling	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	8%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Restaurant	Heating	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	8%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Restaurant	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	1%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Restaurant	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	24%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Restaurant	Ventilation	Ventilation	1000 CFM	New	813.36	20	\$1,219.71	100%	at stock turnover	\$0.14	78.36	78.36	AEG-BEST
Restaurant	Water Heating	Water Heater	65 gallons	New	2,164.01	13	\$3,537.01	45%	at stock turnover	\$0.19	1,141.94	1,141.94	7th Power Plan
Restaurant	Interior Lighting	Screw-in	lamps	New	106.65	8	\$3.95	100%	at stock turnover	\$0.00	128.36	154.80	7th Power Plan
Restaurant	Interior Lighting	Linear Lighting	lamps	New	165.19	17	\$52.83	100%	at stock turnover	\$0.02	373.87	358.59	7th Power Plan
Restaurant	Interior Lighting	High-Bay Fixtures	lamps	New	1,109.54	15	\$123.86	100%	at stock turnover	\$0.01	348.80	341.21	Annual Energy Outlook, 2015
Restaurant	Exterior Lighting	Screw-in	lamps	New	76.70	8	\$3.95	100%	at stock turnover	\$0.00	9.53	11.63	7th Power Plan
Restaurant	Exterior Lighting	Linear Lighting	lamps	New	137.09	17	\$52.83	100%	at stock turnover	\$0.03	81.01	77.70	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Restaurant	Exterior Lighting	Area Lighting	lamps	New	1,101.83	15	\$44.55	100%	at stock turnover	-\$0.02	414.78	396.46	Annual Energy Outlook, 2015
Restaurant	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	New	1,507.00	11	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Restaurant	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	New	605.00	15	\$0.00	14%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Restaurant	Refrigeration	Glass Door Display	1 unit	New	767.00	15	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Restaurant	Refrigeration	Open Display Case	1 unit	New	1,438.00	10	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Restaurant	Refrigeration	Icemaker	1 unit	New	443.88	9	\$1,056.09	45%	at stock turnover	\$0.37	72.43	72.72	ENERGY STAR
Restaurant	Refrigeration	Vending Machine	1 unit	New	81.00	10	\$42.81	45%	at stock turnover	\$0.07	11.81	11.81	EIA 2011-2012 Ref. Case
Restaurant	Food Preparation	Oven	1 unit	New	15,104.75	10	\$1,067.99	66%	at stock turnover	-\$0.01	137.10	137.10	RTF Workbook
Restaurant	Food Preparation	Fryer	1 unit	New	2,881.11	10	\$782.02	76%	at stock turnover	\$0.04	303.22	303.22	RTF Workbook
Restaurant	Food Preparation	Dishwasher	1 unit	New	1,348.33	15	\$564.57	43%	at stock turnover	-\$0.13	35.83	35.83	ENERGY STAR
Restaurant	Food Preparation	Hot Food Container	1 unit	New	802.23	20	\$490.95	43%	at stock turnover	\$0.06	94.44	94.44	RTF Workbook
Restaurant	Food Preparation	Steamer	1 unit	New	66,188.82	9	\$837.45	43%	at stock turnover	-\$0.02	276.24	276.24	RTF Workbook
Restaurant	Office Equipment	Desktop Computer	1 unit	New	123.52	5	\$0.01	100%	at stock turnover	\$0.00	22.63	22.63	7th Power Plan
Restaurant	Office Equipment	Laptop	1 unit	New	36.86	4	\$0.01	100%	at stock turnover	\$0.00	2.44	2.44	7th Power Plan
Restaurant	Office Equipment	Monitor	1 unit	New	30.65	5	\$0.01	100%	at stock turnover	\$0.00	1.42	1.42	7th Power Plan
Restaurant	Office Equipment	Server	1 unit	New	74.10	4	\$0.01	100%	at stock turnover	\$0.00	17.63	17.63	AEG Research
Restaurant	Office Equipment	Printer/Copier/Fax	1 unit	New	223.00	6	\$0.01	100%	at stock turnover	\$0.00	1.32	1.32	ENERGY STAR
Restaurant	Office Equipment	POS Terminal	1 unit	New	123.52	5	\$0.01	40%	at stock turnover	\$0.00	12.36	12.36	7th Power Plan
Restaurant	Miscellaneous	Non-HVAC Motors	1 unit	New	0.00	15	\$0.00	90%	at stock turnover	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Restaurant	Miscellaneous	Pool Pump	1 unit	New	0.00	10	\$246.30	0%	at stock turnover	\$0.00	0.00	0.00	Southern California Edison
Restaurant	Miscellaneous	Pool Heater	1 unit	New	0.00	15	\$3,546.07	0%	at stock turnover	\$0.00	0.00	0.00	AEG Research
Restaurant	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Grocery	Cooling	Air-Cooled Chiller	1 kBTU/hr	Existing	33.48	20	\$26.36	14%	at stock turnover	\$0.07	4.29	4.29	Annual Energy Outlook, 2015
Grocery	Cooling	Water-Cooled Chiller	1 kBTU/hr	Existing	52.73	25	\$12.65	9%	at stock turnover	\$0.02	4.16	4.16	Annual Energy Outlook, 2015
Grocery	Cooling	RTU	1 kBTU/hr	Existing	5.38	15	\$6.75	45%	at stock turnover	\$0.14	113.69	113.69	Annual Energy Outlook, 2015
Grocery	Cooling	Room AC	1 kBTU/hr	Existing	21.23	15	\$23.62	2%	at stock turnover	\$0.12	13.39	13.39	Annual Energy Outlook, 2015
Grocery	Cooling	Evaporative AC	11 per TR	Existing	0.00	15	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	New Buildings Institute Study, 2006
Grocery	Cooling	Air-Source Heat Pump	1 kBTU/hr	Existing	9.50	15	\$21.65	14%	at stock turnover	\$0.19	14.89	14.89	Annual Energy Outlook, 2015
Grocery	Heating	Air-Source Heat Pump	1 kBTU/hr	Existing	2.94	15	\$21.65	14%	at stock turnover	\$0.19	4.60	4.60	Annual Energy Outlook, 2015
Grocery	Cooling	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	8%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Grocery	Heating	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	8%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Grocery	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	1%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Grocery	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	24%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Grocery	Ventilation	Ventilation	1000 CFM	Existing	10,561.91	20	\$1,219.71	100%	at stock turnover	\$0.01	364.04	364.04	AEG-BEST
Grocery	Water Heating	Water Heater	65 gallons	Existing	2,164.01	13	\$3,537.01	45%	at stock turnover	\$0.19	877.67	877.67	7th Power Plan
Grocery	Interior Lighting	Screw-in	lamps	Existing	142.18	8	\$3.95	100%	at stock turnover	\$0.00	103.90	209.32	7th Power Plan
Grocery	Interior Lighting	Linear Lighting	lamps	Existing	198.19	17	\$52.83	100%	at stock turnover	\$0.02	1,951.21	1,850.02	7th Power Plan
Grocery	Interior Lighting	High-Bay Fixtures	lamps	Existing	771.26	15	\$123.86	100%	at stock turnover	\$0.02	553.68	529.71	Annual Energy Outlook, 2015

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Grocery	Exterior Lighting	Screw-in	lamps	Existing	91.09	8	\$3.95	100%	at stock turnover	\$0.00	40.52	93.35	7th Power Plan
Grocery	Exterior Lighting	Linear Lighting	lamps	Existing	129.63	17	\$52.83	100%	at stock turnover	\$0.03	149.39	141.66	7th Power Plan
Grocery	Exterior Lighting	Area Lighting	lamps	Existing	1,062.47	15	\$44.55	100%	at stock turnover	-\$0.02	646.24	608.43	Annual Energy Outlook, 2015
Grocery	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	Existing	1,507.00	11	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Grocery	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	Existing	605.00	15	\$0.00	14%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Grocery	Refrigeration	Glass Door Display	1 unit	Existing	767.00	15	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Grocery	Refrigeration	Open Display Case	1 unit	Existing	1,438.00	10	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Grocery	Refrigeration	Icemaker	1 unit	Existing	443.88	9	\$1,056.09	45%	at stock turnover	\$0.37	29.05	29.32	ENERGY STAR
Grocery	Refrigeration	Vending Machine	1 unit	Existing	81.00	10	\$42.81	45%	at stock turnover	\$0.07	12.10	12.10	EIA 2011-2012 Ref. Case
Grocery	Food Preparation	Oven	1 unit	Existing	15,104.75	10	\$1,067.99	66%	at stock turnover	-\$0.01	14.03	14.03	RTF Workbook
Grocery	Food Preparation	Fryer	1 unit	Existing	2,881.11	10	\$782.02	76%	at stock turnover	\$0.04	107.56	107.56	RTF Workbook
Grocery	Food Preparation	Dishwasher	1 unit	Existing	1,348.33	15	\$564.57	43%	at stock turnover	-\$0.13	28.98	28.98	ENERGY STAR
Grocery	Food Preparation	Hot Food Container	1 unit	Existing	802.23	20	\$490.95	43%	at stock turnover	\$0.06	43.96	43.96	RTF Workbook
Grocery	Food Preparation	Steamer	1 unit	Existing	66,188.82	9	\$837.45	43%	at stock turnover	-\$0.02	189.52	189.52	RTF Workbook
Grocery	Office Equipment	Desktop Computer	1 unit	Existing	123.52	5	\$0.01	100%	at stock turnover	\$0.00	36.09	36.09	7th Power Plan
Grocery	Office Equipment	Laptop	1 unit	Existing	36.86	4	\$0.01	100%	at stock turnover	\$0.00	2.94	2.94	7th Power Plan
Grocery	Office Equipment	Monitor	1 unit	Existing	30.65	5	\$0.01	100%	at stock turnover	\$0.00	2.26	2.26	7th Power Plan
Grocery	Office Equipment	Server	1 unit	Existing	74.10	4	\$0.01	100%	at stock turnover	\$0.00	20.13	20.13	AEG Research
Grocery	Office Equipment	Printer/Copier/Fax	1 unit	Existing	223.00	6	\$0.01	100%	at stock turnover	\$0.00	0.83	0.83	ENERGY STAR

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Grocery	Office Equipment	POS Terminal	1 unit	Existing	123.52	5	\$0.01	40%	at stock turnover	\$0.00	20.56	20.56	7th Power Plan
Grocery	Miscellaneous	Non-HVAC Motors	1 unit	Existing	0.00	15	\$0.00	90%	at stock turnover	\$0.00	0.00	0.00	N/A
Grocery	Miscellaneous	Pool Pump	1 unit	Existing	0.00	10	\$246.30	0%	at stock turnover	\$0.00	0.00	0.00	Southern California Edison
Grocery	Miscellaneous	Pool Heater	1 unit	Existing	0.00	15	\$3,546.07	0%	at stock turnover	\$0.00	0.00	0.00	AEG Research
Grocery	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Grocery	Cooling	Air-Cooled Chiller	1 kBTU/hr	New	28.81	20	\$26.36	14%	at stock turnover	\$0.09	3.05	3.05	Annual Energy Outlook, 2015
Grocery	Cooling	Water-Cooled Chiller	1 kBTU/hr	New	45.89	25	\$12.65	9%	at stock turnover	\$0.03	2.64	2.64	Annual Energy Outlook, 2015
Grocery	Cooling	RTU	1 kBTU/hr	New	5.91	15	\$6.75	45%	at stock turnover	\$0.12	79.21	79.21	Annual Energy Outlook, 2015
Grocery	Cooling	Room AC	1 kBTU/hr	New	18.58	15	\$23.62	2%	at stock turnover	\$0.14	7.43	7.43	Annual Energy Outlook, 2015
Grocery	Cooling	Evaporative AC	11 per TR	New	0.00	15	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	New Buildings Institute Study, 2006
Grocery	Cooling	Air-Source Heat Pump	1 kBTU/hr	New	8.21	15	\$21.65	14%	at stock turnover	\$0.21	8.53	8.53	Annual Energy Outlook, 2015
Grocery	Heating	Air-Source Heat Pump	1 kBTU/hr	New	2.82	15	\$21.65	14%	at stock turnover	\$0.21	2.93	2.93	Annual Energy Outlook, 2015
Grocery	Cooling	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	8%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Grocery	Heating	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	8%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Grocery	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	1%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Grocery	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	24%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Grocery	Ventilation	Ventilation	1000 CFM	New	9,141.04	20	\$1,219.71	100%	at stock turnover	\$0.01	177.44	177.44	AEG-BEST
Grocery	Water Heating	Water Heater	65 gallons	New	2,164.01	13	\$3,537.01	45%	at stock turnover	\$0.19	491.89	491.89	7th Power Plan
Grocery	Interior Lighting	Screw-in	lamps	New	142.18	8	\$3.95	100%	at stock turnover	\$0.00	56.04	65.51	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Grocery	Interior Lighting	Linear Lighting	lamps	New	198.19	17	\$52.83	100%	at stock turnover	\$0.02	1,051.20	1,006.68	7th Power Plan
Grocery	Interior Lighting	High-Bay Fixtures	lamps	New	771.26	15	\$123.86	100%	at stock turnover	\$0.02	352.45	341.37	Annual Energy Outlook, 2015
Grocery	Exterior Lighting	Screw-in	lamps	New	91.09	8	\$3.95	100%	at stock turnover	\$0.00	15.81	21.24	7th Power Plan
Grocery	Exterior Lighting	Linear Lighting	lamps	New	129.63	17	\$52.83	100%	at stock turnover	\$0.03	80.47	77.07	7th Power Plan
Grocery	Exterior Lighting	Area Lighting	lamps	New	1,062.47	15	\$44.55	100%	at stock turnover	-\$0.02	413.02	394.96	Annual Energy Outlook, 2015
Grocery	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	New	1,507.00	11	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Grocery	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	New	605.00	15	\$0.00	14%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Grocery	Refrigeration	Glass Door Display	1 unit	New	767.00	15	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Grocery	Refrigeration	Open Display Case	1 unit	New	1,438.00	10	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Grocery	Refrigeration	Icemaker	1 unit	New	443.88	9	\$1,056.09	45%	at stock turnover	\$0.37	16.49	16.55	ENERGY STAR
Grocery	Refrigeration	Vending Machine	1 unit	New	81.00	10	\$42.81	45%	at stock turnover	\$0.07	6.48	6.48	EIA 2011-2012 Ref. Case
Grocery	Food Preparation	Oven	1 unit	New	15,104.75	10	\$1,067.99	66%	at stock turnover	-\$0.01	11.46	11.46	RTF Workbook
Grocery	Food Preparation	Fryer	1 unit	New	2,881.11	10	\$782.02	76%	at stock turnover	\$0.04	59.77	59.77	RTF Workbook
Grocery	Food Preparation	Dishwasher	1 unit	New	1,348.33	15	\$564.57	43%	at stock turnover	-\$0.13	13.82	13.82	ENERGY STAR
Grocery	Food Preparation	Hot Food Container	1 unit	New	802.23	20	\$490.95	43%	at stock turnover	\$0.06	30.94	30.94	RTF Workbook
Grocery	Food Preparation	Steamer	1 unit	New	66,188.82	9	\$837.45	43%	at stock turnover	-\$0.02	117.64	117.64	RTF Workbook
Grocery	Office Equipment	Desktop Computer	1 unit	New	123.52	5	\$0.01	100%	at stock turnover	\$0.00	14.33	14.33	7th Power Plan
Grocery	Office Equipment	Laptop	1 unit	New	36.86	4	\$0.01	100%	at stock turnover	\$0.00	1.30	1.30	7th Power Plan
Grocery	Office Equipment	Monitor	1 unit	New	30.65	5	\$0.01	100%	at stock turnover	\$0.00	0.90	0.90	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Grocery	Office Equipment	Server	1 unit	New	74.10	4	\$0.01	100%	at stock turnover	\$0.00	8.48	8.48	AEG Research
Grocery	Office Equipment	Printer/Copier/Fax	1 unit	New	223.00	6	\$0.01	100%	at stock turnover	\$0.00	0.42	0.42	ENERGY STAR
Grocery	Office Equipment	POS Terminal	1 unit	New	123.52	5	\$0.01	40%	at stock turnover	\$0.00	9.72	9.72	7th Power Plan
Grocery	Miscellaneous	Non-HVAC Motors	1 unit	New	0.00	15	\$0.00	90%	at stock turnover	\$0.00	0.00	0.00	N/A
Grocery	Miscellaneous	Pool Pump	1 unit	New	0.00	10	\$246.30	0%	at stock turnover	\$0.00	0.00	0.00	Southern California Edison
Grocery	Miscellaneous	Pool Heater	1 unit	New	0.00	15	\$3,546.07	0%	at stock turnover	\$0.00	0.00	0.00	AEG Research
Grocery	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Health	Cooling	Air-Cooled Chiller	1 kBTU/hr	Existing	35.99	20	\$26.36	14%	at stock turnover	\$0.07	374.60	374.60	Annual Energy Outlook, 2015
Health	Cooling	Water-Cooled Chiller	1 kBTU/hr	Existing	65.55	25	\$12.65	9%	at stock turnover	\$0.02	2,729.65	2,729.65	Annual Energy Outlook, 2015
Health	Cooling	RTU	1 kBTU/hr	Existing	5.06	15	\$6.75	45%	at stock turnover	\$0.15	35.81	35.81	Annual Energy Outlook, 2015
Health	Cooling	Room AC	1 kBTU/hr	Existing	19.96	15	\$23.62	2%	at stock turnover	\$0.13	5.70	5.70	Annual Energy Outlook, 2015
Health	Cooling	Evaporative AC	11 per TR	Existing	0.00	15	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	New Buildings Institute Study, 2006
Health	Cooling	Air-Source Heat Pump	1 kBTU/hr	Existing	9.72	15	\$21.65	14%	at stock turnover	\$0.14	3.04	3.04	Annual Energy Outlook, 2015
Health	Heating	Air-Source Heat Pump	1 kBTU/hr	Existing	6.94	15	\$21.65	14%	at stock turnover	\$0.14	2.17	2.17	Annual Energy Outlook, 2015
Health	Cooling	Geothermal Heat Pump	1 kBTU/hr	Existing	23.60	25	\$26.36	8%	at stock turnover	\$0.05	8.39	8.39	Annual Energy Outlook, 2015
Health	Heating	Geothermal Heat Pump	1 kBTU/hr	Existing	21.99	25	\$26.36	8%	at stock turnover	\$0.05	7.82	7.82	Annual Energy Outlook, 2015
Health	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	1%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Health	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	24%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Health	Ventilation	Ventilation	1000 CFM	Existing	8,842.14	20	\$1,219.71	100%	at stock turnover	\$0.01	683.64	683.64	AEG-BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Health	Water Heating	Water Heater	65 gallons	Existing	2,164.00	13	\$3,537.01	45%	at stock turnover	\$0.19	678.51	678.51	7th Power Plan
Health	Interior Lighting	Screw-in	lamps	Existing	97.11	8	\$3.95	100%	at stock turnover	\$0.00	325.49	450.78	7th Power Plan
Health	Interior Lighting	Linear Lighting	lamps	Existing	175.08	17	\$52.83	100%	at stock turnover	\$0.02	3,750.88	3,560.61	7th Power Plan
Health	Interior Lighting	High-Bay Fixtures	lamps	Existing	733.19	15	\$123.86	100%	at stock turnover	\$0.02	1,366.33	1,305.93	Annual Energy Outlook, 2015
Health	Exterior Lighting	Screw-in	lamps	Existing	69.06	8	\$3.95	100%	at stock turnover	\$0.00	14.41	20.98	7th Power Plan
Health	Exterior Lighting	Linear Lighting	lamps	Existing	132.69	17	\$52.83	100%	at stock turnover	\$0.03	77.27	73.36	7th Power Plan
Health	Exterior Lighting	Area Lighting	lamps	Existing	1,058.91	15	\$44.55	100%	at stock turnover	-\$0.02	584.12	550.19	Annual Energy Outlook, 2015
Health	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	Existing	1,507.00	11	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Health	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	Existing	605.00	15	\$0.00	14%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Health	Refrigeration	Glass Door Display	1 unit	Existing	767.00	15	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Health	Refrigeration	Open Display Case	1 unit	Existing	1,438.00	10	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Health	Refrigeration	Icemaker	1 unit	Existing	443.88	9	\$1,056.09	45%	at stock turnover	\$0.37	20.01	20.20	ENERGY STAR
Health	Refrigeration	Vending Machine	1 unit	Existing	81.00	10	\$42.81	45%	at stock turnover	\$0.07	7.68	7.68	EIA 2011-2012 Ref. Case
Health	Food Preparation	Oven	1 unit	Existing	15,104.75	10	\$1,067.99	66%	at stock turnover	-\$0.01	215.50	215.50	RTF Workbook
Health	Food Preparation	Fryer	1 unit	Existing	2,881.11	10	\$782.02	76%	at stock turnover	\$0.04	193.46	193.46	RTF Workbook
Health	Food Preparation	Dishwasher	1 unit	Existing	1,348.33	15	\$564.57	43%	at stock turnover	-\$0.13	55.13	55.13	ENERGY STAR
Health	Food Preparation	Hot Food Container	1 unit	Existing	802.23	20	\$490.95	43%	at stock turnover	\$0.06	64.57	64.57	RTF Workbook
Health	Food Preparation	Steamer	1 unit	Existing	66,188.82	9	\$837.45	43%	at stock turnover	-\$0.02	790.84	790.84	RTF Workbook
Health	Office Equipment	Desktop Computer	1 unit	Existing	123.52	5	\$0.01	100%	at stock turnover	\$0.00	243.51	243.51	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Health	Office Equipment	Laptop	1 unit	Existing	36.86	4	\$0.01	100%	at stock turnover	\$0.00	11.91	11.91	7th Power Plan
Health	Office Equipment	Monitor	1 unit	Existing	30.65	5	\$0.01	100%	at stock turnover	\$0.00	15.25	15.25	7th Power Plan
Health	Office Equipment	Server	1 unit	Existing	74.10	4	\$0.01	100%	at stock turnover	\$0.00	27.04	27.04	AEG Research
Health	Office Equipment	Printer/Copier/Fax	1 unit	Existing	223.00	6	\$0.01	100%	at stock turnover	\$0.00	5.54	5.54	ENERGY STAR
Health	Office Equipment	POS Terminal	1 unit	Existing	123.52	5	\$0.01	40%	at stock turnover	\$0.00	27.64	27.64	7th Power Plan
Health	Miscellaneous	Non-HVAC Motors	1 unit	Existing	0.00	15	\$0.00	90%	at stock turnover	\$0.00	0.00	0.00	N/A
Health	Miscellaneous	Pool Pump	1 unit	Existing	0.00	10	\$246.30	0%	at stock turnover	\$0.00	0.00	0.00	Southern California Edison
Health	Miscellaneous	Pool Heater	1 unit	Existing	0.00	15	\$3,546.07	0%	at stock turnover	\$0.00	0.00	0.00	AEG Research
Health	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Health	Cooling	Air-Cooled Chiller	1 kBTU/hr	New	27.06	20	\$26.36	14%	at stock turnover	\$0.09	240.30	240.30	Annual Energy Outlook, 2015
Health	Cooling	Water-Cooled Chiller	1 kBTU/hr	New	50.18	25	\$12.65	9%	at stock turnover	\$0.02	1,569.99	1,569.99	Annual Energy Outlook, 2015
Health	Cooling	RTU	1 kBTU/hr	New	5.61	15	\$6.75	45%	at stock turnover	\$0.13	29.99	29.99	Annual Energy Outlook, 2015
Health	Cooling	Room AC	1 kBTU/hr	New	17.46	15	\$23.62	2%	at stock turnover	\$0.15	3.28	3.28	Annual Energy Outlook, 2015
Health	Cooling	Evaporative AC	11 per TR	New	0.00	15	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	New Buildings Institute Study, 2006
Health	Cooling	Air-Source Heat Pump	1 kBTU/hr	New	8.40	15	\$21.65	14%	at stock turnover	\$0.16	1.81	1.81	Annual Energy Outlook, 2015
Health	Heating	Air-Source Heat Pump	1 kBTU/hr	New	6.66	15	\$21.65	14%	at stock turnover	\$0.16	1.43	1.43	Annual Energy Outlook, 2015
Health	Cooling	Geothermal Heat Pump	1 kBTU/hr	New	26.26	25	\$26.36	8%	at stock turnover	\$0.06	7.00	7.00	Annual Energy Outlook, 2015
Health	Heating	Geothermal Heat Pump	1 kBTU/hr	New	12.58	25	\$26.36	8%	at stock turnover	\$0.06	3.36	3.36	Annual Energy Outlook, 2015
Health	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	1%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Health	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	24%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Health	Ventilation	Ventilation	1000 CFM	New	7,652.63	20	\$1,219.71	100%	at stock turnover	\$0.02	534.52	534.52	AEG-BEST
Health	Water Heating	Water Heater	65 gallons	New	2,164.00	13	\$3,537.01	45%	at stock turnover	\$0.19	394.96	394.96	7th Power Plan
Health	Interior Lighting	Screw-in	lamps	New	97.11	8	\$3.95	100%	at stock turnover	\$0.00	150.88	156.34	7th Power Plan
Health	Interior Lighting	Linear Lighting	lamps	New	175.08	17	\$52.83	100%	at stock turnover	\$0.02	2,093.80	2,007.32	7th Power Plan
Health	Interior Lighting	High-Bay Fixtures	lamps	New	733.19	15	\$123.86	100%	at stock turnover	\$0.02	891.42	862.60	Annual Energy Outlook, 2015
Health	Exterior Lighting	Screw-in	lamps	New	69.06	8	\$3.95	100%	at stock turnover	\$0.00	5.34	5.78	7th Power Plan
Health	Exterior Lighting	Linear Lighting	lamps	New	132.69	17	\$52.83	100%	at stock turnover	\$0.03	43.11	41.34	7th Power Plan
Health	Exterior Lighting	Area Lighting	lamps	New	1,058.91	15	\$44.55	100%	at stock turnover	-\$0.02	388.22	371.50	Annual Energy Outlook, 2015
Health	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	New	1,507.00	11	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Health	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	New	605.00	15	\$0.00	14%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Health	Refrigeration	Glass Door Display	1 unit	New	767.00	15	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Health	Refrigeration	Open Display Case	1 unit	New	1,438.00	10	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Health	Refrigeration	Icemaker	1 unit	New	443.88	9	\$1,056.09	45%	at stock turnover	\$0.37	8.10	8.14	ENERGY STAR
Health	Refrigeration	Vending Machine	1 unit	New	81.00	10	\$42.81	45%	at stock turnover	\$0.07	4.25	4.25	EIA 2011-2012 Ref. Case
Health	Food Preparation	Oven	1 unit	New	15,104.75	10	\$1,067.99	66%	at stock turnover	-\$0.01	275.90	275.90	RTF Workbook
Health	Food Preparation	Fryer	1 unit	New	2,881.11	10	\$782.02	76%	at stock turnover	\$0.04	111.61	111.61	RTF Workbook
Health	Food Preparation	Dishwasher	1 unit	New	1,348.33	15	\$564.57	43%	at stock turnover	-\$0.13	27.24	27.24	ENERGY STAR
Health	Food Preparation	Hot Food Container	1 unit	New	802.23	20	\$490.95	43%	at stock turnover	\$0.06	48.07	48.07	RTF Workbook

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Health	Food Preparation	Steamer	1 unit	New	66,188.82	9	\$837.45	43%	at stock turnover	-\$0.02	488.86	488.86	RTF Workbook
Health	Office Equipment	Desktop Computer	1 unit	New	123.52	5	\$0.01	100%	at stock turnover	\$0.00	100.09	100.09	7th Power Plan
Health	Office Equipment	Laptop	1 unit	New	36.86	4	\$0.01	100%	at stock turnover	\$0.00	5.37	5.37	7th Power Plan
Health	Office Equipment	Monitor	1 unit	New	30.65	5	\$0.01	100%	at stock turnover	\$0.00	6.27	6.27	7th Power Plan
Health	Office Equipment	Server	1 unit	New	74.10	4	\$0.01	100%	at stock turnover	\$0.00	11.83	11.83	AEG Research
Health	Office Equipment	Printer/Copier/Fax	1 unit	New	223.00	6	\$0.01	100%	at stock turnover	\$0.00	2.90	2.90	ENERGY STAR
Health	Office Equipment	POS Terminal	1 unit	New	123.52	5	\$0.01	40%	at stock turnover	\$0.00	13.55	13.55	7th Power Plan
Health	Miscellaneous	Non-HVAC Motors	1 unit	New	0.00	15	\$0.00	90%	at stock turnover	\$0.00	0.00	0.00	N/A
Health	Miscellaneous	Pool Pump	1 unit	New	0.00	10	\$246.30	0%	at stock turnover	\$0.00	0.00	0.00	Southern California Edison
Health	Miscellaneous	Pool Heater	1 unit	New	0.00	15	\$3,546.07	0%	at stock turnover	\$0.00	0.00	0.00	AEG Research
Health	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
College	Cooling	Air-Cooled Chiller	1 kBTU/hr	Existing	30.20	20	\$26.36	14%	at stock turnover	\$0.08	555.15	555.15	Annual Energy Outlook, 2015
College	Cooling	Water-Cooled Chiller	1 kBTU/hr	Existing	0.00	25	\$12.65	9%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
College	Cooling	RTU	1 kBTU/hr	Existing	2.50	15	\$6.75	45%	at stock turnover	\$0.29	89.43	89.43	Annual Energy Outlook, 2015
College	Cooling	Room AC	1 kBTU/hr	Existing	9.86	15	\$23.62	2%	at stock turnover	\$0.26	22.91	22.91	Annual Energy Outlook, 2015
College	Cooling	Evaporative AC	11 per TR	Existing	0.00	15	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	New Buildings Institute Study, 2006
College	Cooling	Air-Source Heat Pump	1 kBTU/hr	Existing	4.81	15	\$21.65	14%	at stock turnover	\$0.25	21.29	21.29	Annual Energy Outlook, 2015
College	Heating	Air-Source Heat Pump	1 kBTU/hr	Existing	4.60	15	\$21.65	14%	at stock turnover	\$0.25	20.39	20.39	Annual Energy Outlook, 2015
College	Cooling	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	8%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
College	Heating	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	8%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
College	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	1%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
College	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	24%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
College	Ventilation	Ventilation	1000 CFM	Existing	1,614.99	20	\$1,219.71	100%	at stock turnover	\$0.07	642.11	642.11	AEG-BEST
College	Water Heating	Water Heater	65 gallons	Existing	2,104.22	13	\$3,537.01	45%	at stock turnover	\$0.20	1,479.21	1,479.21	7th Power Plan
College	Interior Lighting	Screw-in	lamps	Existing	54.46	8	\$3.95	100%	at stock turnover	\$0.00	67.43	87.07	7th Power Plan
College	Interior Lighting	Linear Lighting	lamps	Existing	98.45	17	\$52.83	100%	at stock turnover	\$0.04	2,006.44	1,905.23	7th Power Plan
College	Interior Lighting	High-Bay Fixtures	lamps	Existing	432.99	15	\$123.86	100%	at stock turnover	\$0.03	899.64	863.64	Annual Energy Outlook, 2015
College	Exterior Lighting	Screw-in	lamps	Existing	95.37	8	\$3.95	100%	at stock turnover	\$0.00	3.48	9.03	7th Power Plan
College	Exterior Lighting	Linear Lighting	lamps	Existing	125.04	17	\$52.83	100%	at stock turnover	\$0.03	687.57	652.89	7th Power Plan
College	Exterior Lighting	Area Lighting	lamps	Existing	811.59	15	\$44.55	100%	at stock turnover	-\$0.03	249.41	235.21	Annual Energy Outlook, 2015
College	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	Existing	1,507.00	11	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
College	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	Existing	605.00	15	\$0.00	14%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
College	Refrigeration	Glass Door Display	1 unit	Existing	767.00	15	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
College	Refrigeration	Open Display Case	1 unit	Existing	1,438.00	10	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
College	Refrigeration	Icemaker	1 unit	Existing	443.88	9	\$1,056.09	45%	at stock turnover	\$0.37	2.49	2.51	ENERGY STAR
College	Refrigeration	Vending Machine	1 unit	Existing	81.00	10	\$42.81	45%	at stock turnover	\$0.07	1.81	1.81	EIA 2011-2012 Ref. Case
College	Food Preparation	Oven	1 unit	Existing	15,104.75	10	\$1,067.99	66%	at stock turnover	-\$0.01	56.24	56.24	RTF Workbook
College	Food Preparation	Fryer	1 unit	Existing	2,881.11	10	\$782.02	76%	at stock turnover	\$0.04	20.84	20.84	RTF Workbook

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
College	Food Preparation	Dishwasher	1 unit	Existing	1,348.33	15	\$564.57	43%	at stock turnover	-\$0.13	14.54	14.54	ENERGY STAR
College	Food Preparation	Hot Food Container	1 unit	Existing	802.23	20	\$490.95	43%	at stock turnover	\$0.06	12.39	12.39	RTF Workbook
College	Food Preparation	Steamer	1 unit	Existing	66,188.82	9	\$837.45	43%	at stock turnover	-\$0.02	156.76	156.76	RTF Workbook
College	Office Equipment	Desktop Computer	1 unit	Existing	123.52	5	\$0.01	100%	at stock turnover	\$0.00	233.61	233.61	7th Power Plan
College	Office Equipment	Laptop	1 unit	Existing	36.86	4	\$0.01	100%	at stock turnover	\$0.00	8.53	8.53	7th Power Plan
College	Office Equipment	Monitor	1 unit	Existing	30.65	5	\$0.01	100%	at stock turnover	\$0.00	14.63	14.63	7th Power Plan
College	Office Equipment	Server	1 unit	Existing	74.10	4	\$0.01	100%	at stock turnover	\$0.00	25.76	25.76	AEG Research
College	Office Equipment	Printer/Copier/Fax	1 unit	Existing	223.00	6	\$0.01	100%	at stock turnover	\$0.00	6.58	6.58	ENERGY STAR
College	Office Equipment	POS Terminal	1 unit	Existing	123.52	5	\$0.01	40%	at stock turnover	\$0.00	13.18	13.18	7th Power Plan
College	Miscellaneous	Non-HVAC Motors	1 unit	Existing	0.00	15	\$0.00	90%	at stock turnover	\$0.00	0.00	0.00	N/A
College	Miscellaneous	Pool Pump	1 unit	Existing	1,432.30	10	\$246.30	0%	at stock turnover	\$0.02	19.04	19.04	Southern California Edison
College	Miscellaneous	Pool Heater	1 unit	Existing	15,277.63	15	\$3,546.07	0%	at stock turnover	\$0.03	13.30	13.30	AEG Research
College	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
College	Cooling	Air-Cooled Chiller	1 kBTU/hr	New	29.50	20	\$26.36	14%	at stock turnover	\$0.08	487.97	487.97	Annual Energy Outlook, 2015
College	Cooling	Water-Cooled Chiller	1 kBTU/hr	New	0.00	25	\$12.65	9%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
College	Cooling	RTU	1 kBTU/hr	New	2.28	15	\$6.75	45%	at stock turnover	\$0.32	56.87	56.87	Annual Energy Outlook, 2015
College	Cooling	Room AC	1 kBTU/hr	New	8.75	15	\$23.62	2%	at stock turnover	\$0.29	14.14	14.14	Annual Energy Outlook, 2015
College	Cooling	Evaporative AC	11 per TR	New	0.00	15	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	New Buildings Institute Study, 2006
College	Cooling	Air-Source Heat Pump	1 kBTU/hr	New	4.40	15	\$21.65	14%	at stock turnover	\$0.27	14.18	14.18	Annual Energy Outlook, 2015

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
College	Heating	Air-Source Heat Pump	1 kBTU/hr	New	4.34	15	\$21.65	14%	at stock turnover	\$0.27	13.99	13.99	Annual Energy Outlook, 2015
College	Cooling	Geothermal Heat Pump	1 kBTU/hr	New	10.67	25	\$26.36	8%	at stock turnover	\$0.09	20.46	20.46	Annual Energy Outlook, 2015
College	Heating	Geothermal Heat Pump	1 kBTU/hr	New	16.17	25	\$26.36	8%	at stock turnover	\$0.09	31.01	31.01	Annual Energy Outlook, 2015
College	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	1%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
College	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	24%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
College	Ventilation	Ventilation	1000 CFM	New	1,634.04	20	\$1,219.71	100%	at stock turnover	\$0.07	583.74	583.74	AEG-BEST
College	Water Heating	Water Heater	65 gallons	New	2,164.03	13	\$3,537.01	45%	at stock turnover	\$0.19	940.54	940.54	7th Power Plan
College	Interior Lighting	Screw-in	lamps	New	54.46	8	\$3.95	100%	at stock turnover	\$0.00	40.85	41.23	7th Power Plan
College	Interior Lighting	Linear Lighting	lamps	New	98.45	17	\$52.83	100%	at stock turnover	\$0.04	1,183.47	1,135.05	7th Power Plan
College	Interior Lighting	High-Bay Fixtures	lamps	New	432.99	15	\$123.86	100%	at stock turnover	\$0.03	625.92	607.84	Annual Energy Outlook, 2015
College	Exterior Lighting	Screw-in	lamps	New	95.37	8	\$3.95	100%	at stock turnover	\$0.00	1.24	1.96	7th Power Plan
College	Exterior Lighting	Linear Lighting	lamps	New	125.04	17	\$52.83	100%	at stock turnover	\$0.03	405.55	388.96	7th Power Plan
College	Exterior Lighting	Area Lighting	lamps	New	811.59	15	\$44.55	100%	at stock turnover	-\$0.03	175.36	168.00	Annual Energy Outlook, 2015
College	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	New	1,507.00	11	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
College	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	New	605.00	15	\$0.00	14%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
College	Refrigeration	Glass Door Display	1 unit	New	767.00	15	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
College	Refrigeration	Open Display Case	1 unit	New	1,438.00	10	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
College	Refrigeration	Icemaker	1 unit	New	443.88	9	\$1,056.09	45%	at stock turnover	\$0.37	2.66	2.67	ENERGY STAR
College	Refrigeration	Vending Machine	1 unit	New	81.00	10	\$42.81	45%	at stock turnover	\$0.07	0.98	0.98	EIA 2011-2012 Ref. Case

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
College	Food Preparation	Oven	1 unit	New	15,104.75	10	\$1,067.99	66%	at stock turnover	-\$0.01	48.27	48.27	RTF Workbook
College	Food Preparation	Fryer	1 unit	New	2,881.11	10	\$782.02	76%	at stock turnover	\$0.04	12.76	12.76	RTF Workbook
College	Food Preparation	Dishwasher	1 unit	New	1,348.33	15	\$564.57	43%	at stock turnover	-\$0.13	6.06	6.06	ENERGY STAR
College	Food Preparation	Hot Food Container	1 unit	New	802.23	20	\$490.95	43%	at stock turnover	\$0.06	10.78	10.78	RTF Workbook
College	Food Preparation	Steamer	1 unit	New	66,188.82	9	\$837.45	43%	at stock turnover	-\$0.02	107.31	107.31	RTF Workbook
College	Office Equipment	Desktop Computer	1 unit	New	123.52	5	\$0.01	100%	at stock turnover	\$0.00	101.39	101.39	7th Power Plan
College	Office Equipment	Laptop	1 unit	New	36.86	4	\$0.01	100%	at stock turnover	\$0.00	4.08	4.08	7th Power Plan
College	Office Equipment	Monitor	1 unit	New	30.65	5	\$0.01	100%	at stock turnover	\$0.00	6.35	6.35	7th Power Plan
College	Office Equipment	Server	1 unit	New	74.10	4	\$0.01	100%	at stock turnover	\$0.00	11.96	11.96	AEG Research
College	Office Equipment	Printer/Copier/Fax	1 unit	New	223.00	6	\$0.01	100%	at stock turnover	\$0.00	3.67	3.67	ENERGY STAR
College	Office Equipment	POS Terminal	1 unit	New	123.52	5	\$0.01	40%	at stock turnover	\$0.00	6.84	6.84	7th Power Plan
College	Miscellaneous	Non-HVAC Motors	1 unit	New	0.00	15	\$0.00	90%	at stock turnover	\$0.00	0.00	0.00	N/A
College	Miscellaneous	Pool Pump	1 unit	New	1,432.30	10	\$246.30	0%	at stock turnover	\$0.02	13.44	13.44	Southern California Edison
College	Miscellaneous	Pool Heater	1 unit	New	15,277.63	15	\$3,546.07	0%	at stock turnover	\$0.03	9.62	9.62	AEG Research
College	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
School	Cooling	Air-Cooled Chiller	1 kBTU/hr	Existing	16.37	20	\$26.36	14%	at stock turnover	\$0.15	598.45	598.45	Annual Energy Outlook, 2015
School	Cooling	Water-Cooled Chiller	1 kBTU/hr	Existing	0.00	25	\$12.65	9%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
School	Cooling	RTU	1 kBTU/hr	Existing	1.35	15	\$6.75	45%	at stock turnover	\$0.54	96.74	96.74	Annual Energy Outlook, 2015
School	Cooling	Room AC	1 kBTU/hr	Existing	5.34	15	\$23.62	2%	at stock turnover	\$0.48	24.78	24.78	Annual Energy Outlook, 2015

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
School	Cooling	Evaporative AC	11 per TR	Existing	0.00	15	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	New Buildings Institute Study, 2006
School	Cooling	Air-Source Heat Pump	1 kBTU/hr	Existing	2.61	15	\$21.65	14%	at stock turnover	\$0.43	23.07	23.07	Annual Energy Outlook, 2015
School	Heating	Air-Source Heat Pump	1 kBTU/hr	Existing	2.91	15	\$21.65	14%	at stock turnover	\$0.43	25.77	25.77	Annual Energy Outlook, 2015
School	Cooling	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	8%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
School	Heating	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	8%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
School	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	1%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
School	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	24%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
School	Ventilation	Ventilation	1000 CFM	Existing	1,033.07	20	\$1,219.71	100%	at stock turnover	\$0.11	903.64	903.64	AEG-BEST
School	Water Heating	Water Heater	65 gallons	Existing	2,104.22	13	\$3,537.01	45%	at stock turnover	\$0.20	1,924.63	1,924.63	7th Power Plan
School	Interior Lighting	Screw-in	lamps	Existing	72.70	8	\$3.95	100%	at stock turnover	\$0.00	230.69	619.50	7th Power Plan
School	Interior Lighting	Linear Lighting	lamps	Existing	74.38	17	\$52.83	100%	at stock turnover	\$0.05	3,649.65	3,467.57	7th Power Plan
School	Interior Lighting	High-Bay Fixtures	lamps	Existing	307.04	15	\$123.86	100%	at stock turnover	\$0.04	1,300.70	1,247.21	Annual Energy Outlook, 2015
School	Exterior Lighting	Screw-in	lamps	Existing	60.62	8	\$3.95	100%	at stock turnover	\$0.00	4.21	4.62	7th Power Plan
School	Exterior Lighting	Linear Lighting	lamps	Existing	126.15	17	\$52.83	100%	at stock turnover	\$0.03	1,586.07	1,506.96	7th Power Plan
School	Exterior Lighting	Area Lighting	lamps	Existing	761.59	15	\$44.55	100%	at stock turnover	-\$0.03	277.42	262.41	Annual Energy Outlook, 2015
School	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	Existing	1,507.00	11	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
School	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	Existing	605.00	15	\$0.00	14%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
School	Refrigeration	Glass Door Display	1 unit	Existing	767.00	15	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
School	Refrigeration	Open Display Case	1 unit	Existing	1,438.00	10	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
School	Refrigeration	Icemaker	1 unit	Existing	443.88	9	\$1,056.09	45%	at stock turnover	\$0.37	17.27	17.42	ENERGY STAR
School	Refrigeration	Vending Machine	1 unit	Existing	81.00	10	\$42.81	45%	at stock turnover	\$0.07	11.88	11.88	EIA 2011-2012 Ref. Case
School	Food Preparation	Oven	1 unit	Existing	15,104.75	10	\$1,067.99	66%	at stock turnover	-\$0.01	197.74	197.74	RTF Workbook
School	Food Preparation	Fryer	1 unit	Existing	2,881.11	10	\$782.02	76%	at stock turnover	\$0.04	82.44	82.44	RTF Workbook
School	Food Preparation	Dishwasher	1 unit	Existing	1,348.33	15	\$564.57	43%	at stock turnover	-\$0.13	32.01	32.01	ENERGY STAR
School	Food Preparation	Hot Food Container	1 unit	Existing	802.23	20	\$490.95	43%	at stock turnover	\$0.06	37.12	37.12	RTF Workbook
School	Food Preparation	Steamer	1 unit	Existing	66,188.82	9	\$837.45	43%	at stock turnover	-\$0.02	456.05	456.05	RTF Workbook
School	Office Equipment	Desktop Computer	1 unit	Existing	123.52	5	\$0.01	100%	at stock turnover	\$0.00	426.90	426.90	7th Power Plan
School	Office Equipment	Laptop	1 unit	Existing	36.86	4	\$0.01	100%	at stock turnover	\$0.00	20.94	20.94	7th Power Plan
School	Office Equipment	Monitor	1 unit	Existing	30.65	5	\$0.01	100%	at stock turnover	\$0.00	26.73	26.73	7th Power Plan
School	Office Equipment	Server	1 unit	Existing	74.10	4	\$0.01	100%	at stock turnover	\$0.00	95.23	95.23	AEG Research
School	Office Equipment	Printer/Copier/Fax	1 unit	Existing	223.00	6	\$0.01	100%	at stock turnover	\$0.00	9.76	9.76	ENERGY STAR
School	Office Equipment	POS Terminal	1 unit	Existing	123.52	5	\$0.01	40%	at stock turnover	\$0.00	7.19	7.19	7th Power Plan
School	Miscellaneous	Non-HVAC Motors	1 unit	Existing	0.00	15	\$0.00	90%	at stock turnover	\$0.00	0.00	0.00	N/A
School	Miscellaneous	Pool Pump	1 unit	Existing	1,432.30	10	\$246.30	0%	at stock turnover	\$0.02	4.47	4.47	Southern California Edison
School	Miscellaneous	Pool Heater	1 unit	Existing	15,277.63	15	\$3,546.07	0%	at stock turnover	\$0.03	0.65	0.65	AEG Research
School	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
School	Cooling	Air-Cooled Chiller	1 kBTU/hr	New	15.99	20	\$26.36	14%	at stock turnover	\$0.16	482.24	482.24	Annual Energy Outlook, 2015
School	Cooling	Water-Cooled Chiller	1 kBTU/hr	New	0.00	25	\$12.65	9%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
School	Cooling	RTU	1 kBTU/hr	New	1.24	15	\$6.75	45%	at stock turnover	\$0.59	56.14	56.14	Annual Energy Outlook, 2015
School	Cooling	Room AC	1 kBTU/hr	New	4.74	15	\$23.62	2%	at stock turnover	\$0.54	13.95	13.95	Annual Energy Outlook, 2015
School	Cooling	Evaporative AC	11 per TR	New	0.00	15	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	New Buildings Institute Study, 2006
School	Cooling	Air-Source Heat Pump	1 kBTU/hr	New	2.39	15	\$21.65	14%	at stock turnover	\$0.46	14.00	14.00	Annual Energy Outlook, 2015
School	Heating	Air-Source Heat Pump	1 kBTU/hr	New	2.74	15	\$21.65	14%	at stock turnover	\$0.46	16.11	16.11	Annual Energy Outlook, 2015
School	Cooling	Geothermal Heat Pump	1 kBTU/hr	New	5.79	25	\$26.36	8%	at stock turnover	\$0.15	20.36	20.36	Annual Energy Outlook, 2015
School	Heating	Geothermal Heat Pump	1 kBTU/hr	New	10.22	25	\$26.36	8%	at stock turnover	\$0.15	35.96	35.96	Annual Energy Outlook, 2015
School	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	1%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
School	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	24%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
School	Ventilation	Ventilation	1000 CFM	New	1,045.25	20	\$1,219.71	100%	at stock turnover	\$0.11	751.04	751.04	AEG-BEST
School	Water Heating	Water Heater	65 gallons	New	2,164.03	13	\$3,537.01	45%	at stock turnover	\$0.19	1,109.33	1,109.33	7th Power Plan
School	Interior Lighting	Screw-in	lamps	New	72.70	8	\$3.95	100%	at stock turnover	\$0.00	128.91	168.33	7th Power Plan
School	Interior Lighting	Linear Lighting	lamps	New	74.38	17	\$52.83	100%	at stock turnover	\$0.05	1,958.53	1,878.40	7th Power Plan
School	Interior Lighting	High-Bay Fixtures	lamps	New	307.04	15	\$123.86	100%	at stock turnover	\$0.04	825.32	800.60	Annual Energy Outlook, 2015
School	Exterior Lighting	Screw-in	lamps	New	60.62	8	\$3.95	100%	at stock turnover	\$0.00	1.71	1.63	7th Power Plan
School	Exterior Lighting	Linear Lighting	lamps	New	126.15	17	\$52.83	100%	at stock turnover	\$0.03	851.13	816.31	7th Power Plan
School	Exterior Lighting	Area Lighting	lamps	New	761.59	15	\$44.55	100%	at stock turnover	-\$0.03	177.63	170.46	Annual Energy Outlook, 2015
School	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	New	1,507.00	11	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
School	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	New	605.00	15	\$0.00	14%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
School	Refrigeration	Glass Door Display	1 unit	New	767.00	15	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
School	Refrigeration	Open Display Case	1 unit	New	1,438.00	10	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
School	Refrigeration	Icemaker	1 unit	New	443.88	9	\$1,056.09	45%	at stock turnover	\$0.37	16.93	16.99	ENERGY STAR
School	Refrigeration	Vending Machine	1 unit	New	81.00	10	\$42.81	45%	at stock turnover	\$0.07	6.25	6.25	EIA 2011-2012 Ref. Case
School	Food Preparation	Oven	1 unit	New	15,104.75	10	\$1,067.99	66%	at stock turnover	-\$0.01	146.50	146.50	RTF Workbook
School	Food Preparation	Fryer	1 unit	New	2,881.11	10	\$782.02	76%	at stock turnover	\$0.04	45.81	45.81	RTF Workbook
School	Food Preparation	Dishwasher	1 unit	New	1,348.33	15	\$564.57	43%	at stock turnover	-\$0.13	15.13	15.13	ENERGY STAR
School	Food Preparation	Hot Food Container	1 unit	New	802.23	20	\$490.95	43%	at stock turnover	\$0.06	26.74	26.74	RTF Workbook
School	Food Preparation	Steamer	1 unit	New	66,188.82	9	\$837.45	43%	at stock turnover	-\$0.02	271.43	271.43	RTF Workbook
School	Office Equipment	Desktop Computer	1 unit	New	123.52	5	\$0.01	100%	at stock turnover	\$0.00	169.52	169.52	7th Power Plan
School	Office Equipment	Laptop	1 unit	New	36.86	4	\$0.01	100%	at stock turnover	\$0.00	9.11	9.11	7th Power Plan
School	Office Equipment	Monitor	1 unit	New	30.65	5	\$0.01	100%	at stock turnover	\$0.00	10.61	10.61	7th Power Plan
School	Office Equipment	Server	1 unit	New	74.10	4	\$0.01	100%	at stock turnover	\$0.00	40.12	40.12	AEG Research
School	Office Equipment	Printer/Copier/Fax	1 unit	New	223.00	6	\$0.01	100%	at stock turnover	\$0.00	4.92	4.92	ENERGY STAR
School	Office Equipment	POS Terminal	1 unit	New	123.52	5	\$0.01	40%	at stock turnover	\$0.00	3.31	3.31	7th Power Plan
School	Miscellaneous	Non-HVAC Motors	1 unit	New	0.00	15	\$0.00	90%	at stock turnover	\$0.00	0.00	0.00	N/A
School	Miscellaneous	Pool Pump	1 unit	New	1,432.30	10	\$246.30	0%	at stock turnover	\$0.02	2.85	2.85	Southern California Edison
School	Miscellaneous	Pool Heater	1 unit	New	15,277.63	15	\$3,546.07	0%	at stock turnover	\$0.03	0.43	0.43	AEG Research
School	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Lodging	Cooling	Air-Cooled Chiller	1 kBTU/hr	Existing	5.53	20	\$26.36	14%	at stock turnover	\$0.45	3.62	3.62	Annual Energy Outlook, 2015
Lodging	Cooling	Water-Cooled Chiller	1 kBTU/hr	Existing	9.63	25	\$12.65	9%	at stock turnover	\$0.12	22.86	22.86	Annual Energy Outlook, 2015
Lodging	Cooling	RTU	1 kBTU/hr	Existing	2.35	15	\$6.75	45%	at stock turnover	\$0.31	14.38	14.38	Annual Energy Outlook, 2015
Lodging	Cooling	Room AC	1 kBTU/hr	Existing	9.08	15	\$23.62	2%	at stock turnover	\$0.28	137.26	137.26	Annual Energy Outlook, 2015
Lodging	Cooling	Evaporative AC	11 per TR	Existing	0.00	15	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	New Buildings Institute Study, 2006
Lodging	Cooling	Air-Source Heat Pump	1 kBTU/hr	Existing	4.57	15	\$21.65	14%	at stock turnover	\$0.33	6.67	6.67	Annual Energy Outlook, 2015
Lodging	Heating	Air-Source Heat Pump	1 kBTU/hr	Existing	2.65	15	\$21.65	14%	at stock turnover	\$0.33	3.87	3.87	Annual Energy Outlook, 2015
Lodging	Cooling	Geothermal Heat Pump	1 kBTU/hr	Existing	16.70	25	\$26.36	8%	at stock turnover	\$0.10	19.68	19.68	Annual Energy Outlook, 2015
Lodging	Heating	Geothermal Heat Pump	1 kBTU/hr	Existing	8.40	25	\$26.36	8%	at stock turnover	\$0.10	9.90	9.90	Annual Energy Outlook, 2015
Lodging	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	1%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Lodging	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	24%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Lodging	Ventilation	Ventilation	1000 CFM	Existing	1,699.79	20	\$1,219.71	100%	at stock turnover	\$0.07	134.19	134.19	AEG-BEST
Lodging	Water Heating	Water Heater	65 gallons	Existing	2,078.20	13	\$3,537.01	45%	at stock turnover	\$0.20	1,361.32	1,361.32	7th Power Plan
Lodging	Interior Lighting	Screw-in	lamps	Existing	49.32	8	\$3.95	100%	at stock turnover	\$0.00	271.87	406.53	7th Power Plan
Lodging	Interior Lighting	Linear Lighting	lamps	Existing	82.75	17	\$52.83	100%	at stock turnover	\$0.05	281.78	268.41	7th Power Plan
Lodging	Interior Lighting	High-Bay Fixtures	lamps	Existing	418.39	15	\$123.86	100%	at stock turnover	\$0.03	111.56	106.69	Annual Energy Outlook, 2015
Lodging	Exterior Lighting	Screw-in	lamps	Existing	58.73	8	\$3.95	100%	at stock turnover	\$0.00	11.54	11.96	7th Power Plan
Lodging	Exterior Lighting	Linear Lighting	lamps	Existing	131.00	17	\$52.83	100%	at stock turnover	\$0.03	15.82	15.06	7th Power Plan
Lodging	Exterior Lighting	Area Lighting	lamps	Existing	1,003.72	15	\$44.55	100%	at stock turnover	-\$0.02	987.00	928.32	Annual Energy Outlook, 2015

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Lodging	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	Existing	1,507.00	11	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Lodging	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	Existing	605.00	15	\$0.00	14%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Lodging	Refrigeration	Glass Door Display	1 unit	Existing	767.00	15	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Lodging	Refrigeration	Open Display Case	1 unit	Existing	1,438.00	10	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Lodging	Refrigeration	Icemaker	1 unit	Existing	443.88	9	\$1,056.09	45%	at stock turnover	\$0.37	7.12	7.18	ENERGY STAR
Lodging	Refrigeration	Vending Machine	1 unit	Existing	81.00	10	\$42.81	45%	at stock turnover	\$0.07	3.46	3.46	EIA 2011-2012 Ref. Case
Lodging	Food Preparation	Oven	1 unit	Existing	15,104.75	10	\$1,067.99	66%	at stock turnover	-\$0.01	9.38	9.38	RTF Workbook
Lodging	Food Preparation	Fryer	1 unit	Existing	2,881.11	10	\$782.02	76%	at stock turnover	\$0.04	15.18	15.18	RTF Workbook
Lodging	Food Preparation	Dishwasher	1 unit	Existing	1,348.33	15	\$564.57	43%	at stock turnover	-\$0.13	12.69	12.69	ENERGY STAR
Lodging	Food Preparation	Hot Food Container	1 unit	Existing	802.23	20	\$490.95	43%	at stock turnover	\$0.06	11.85	11.85	RTF Workbook
Lodging	Food Preparation	Steamer	1 unit	Existing	66,188.82	9	\$837.45	43%	at stock turnover	-\$0.02	149.59	149.59	RTF Workbook
Lodging	Office Equipment	Desktop Computer	1 unit	Existing	123.52	5	\$0.01	100%	at stock turnover	\$0.00	26.74	26.74	7th Power Plan
Lodging	Office Equipment	Laptop	1 unit	Existing	36.86	4	\$0.01	100%	at stock turnover	\$0.00	3.31	3.31	7th Power Plan
Lodging	Office Equipment	Monitor	1 unit	Existing	30.65	5	\$0.01	100%	at stock turnover	\$0.00	1.67	1.67	7th Power Plan
Lodging	Office Equipment	Server	1 unit	Existing	74.10	4	\$0.01	100%	at stock turnover	\$0.00	15.15	15.15	AEG Research
Lodging	Office Equipment	Printer/Copier/Fax	1 unit	Existing	223.00	6	\$0.01	100%	at stock turnover	\$0.00	0.63	0.63	ENERGY STAR
Lodging	Office Equipment	POS Terminal	1 unit	Existing	123.52	5	\$0.01	40%	at stock turnover	\$0.00	3.62	3.62	7th Power Plan
Lodging	Miscellaneous	Non-HVAC Motors	1 unit	Existing	0.00	15	\$0.00	90%	at stock turnover	\$0.00	0.00	0.00	N/A
Lodging	Miscellaneous	Pool Pump	1 unit	Existing	1,432.30	10	\$246.30	0%	at stock turnover	\$0.02	6.20	6.20	Southern California Edison

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Lodging	Miscellaneous	Pool Heater	1 unit	Existing	15,277.63	15	\$3,546.07	0%	at stock turnover	\$0.03	3.81	3.81	AEG Research
Lodging	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Lodging	Cooling	Air-Cooled Chiller	1 kBTU/hr	New	4.98	20	\$26.36	14%	at stock turnover	\$0.50	2.32	2.32	Annual Energy Outlook, 2015
Lodging	Cooling	Water-Cooled Chiller	1 kBTU/hr	New	8.76	25	\$12.65	9%	at stock turnover	\$0.13	13.14	13.14	Annual Energy Outlook, 2015
Lodging	Cooling	RTU	1 kBTU/hr	New	2.40	15	\$6.75	45%	at stock turnover	\$0.31	8.00	8.00	Annual Energy Outlook, 2015
Lodging	Cooling	Room AC	1 kBTU/hr	New	7.94	15	\$23.62	2%	at stock turnover	\$0.32	65.15	65.15	Annual Energy Outlook, 2015
Lodging	Cooling	Evaporative AC	11 per TR	New	0.00	15	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	New Buildings Institute Study, 2006
Lodging	Cooling	Air-Source Heat Pump	1 kBTU/hr	New	4.67	15	\$21.65	14%	at stock turnover	\$0.34	3.86	3.86	Annual Energy Outlook, 2015
Lodging	Heating	Air-Source Heat Pump	1 kBTU/hr	New	2.29	15	\$21.65	14%	at stock turnover	\$0.34	1.89	1.89	Annual Energy Outlook, 2015
Lodging	Cooling	Geothermal Heat Pump	1 kBTU/hr	New	17.23	25	\$26.36	8%	at stock turnover	\$0.10	12.78	12.78	Annual Energy Outlook, 2015
Lodging	Heating	Geothermal Heat Pump	1 kBTU/hr	New	7.41	25	\$26.36	8%	at stock turnover	\$0.10	5.50	5.50	Annual Energy Outlook, 2015
Lodging	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	1%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Lodging	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	24%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Lodging	Ventilation	Ventilation	1000 CFM	New	1,412.49	20	\$1,219.71	100%	at stock turnover	\$0.08	69.21	69.21	AEG-BEST
Lodging	Water Heating	Water Heater	65 gallons	New	2,164.01	13	\$3,537.01	45%	at stock turnover	\$0.19	671.92	671.92	7th Power Plan
Lodging	Interior Lighting	Screw-in	lamps	New	49.32	8	\$3.95	100%	at stock turnover	\$0.00	99.91	106.58	7th Power Plan
Lodging	Interior Lighting	Linear Lighting	lamps	New	82.75	17	\$52.83	100%	at stock turnover	\$0.05	128.70	123.60	7th Power Plan
Lodging	Interior Lighting	High-Bay Fixtures	lamps	New	418.39	15	\$123.86	100%	at stock turnover	\$0.03	51.81	49.86	Annual Energy Outlook, 2015
Lodging	Exterior Lighting	Screw-in	lamps	New	58.73	8	\$3.95	100%	at stock turnover	\$0.00	4.83	4.55	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Lodging	Exterior Lighting	Linear Lighting	lamps	New	131.00	17	\$52.83	100%	at stock turnover	\$0.03	7.22	6.94	7th Power Plan
Lodging	Exterior Lighting	Area Lighting	lamps	New	1,003.72	15	\$44.55	100%	at stock turnover	-\$0.02	541.06	516.67	Annual Energy Outlook, 2015
Lodging	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	New	1,507.00	11	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Lodging	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	New	605.00	15	\$0.00	14%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Lodging	Refrigeration	Glass Door Display	1 unit	New	767.00	15	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Lodging	Refrigeration	Open Display Case	1 unit	New	1,438.00	10	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Lodging	Refrigeration	Icemaker	1 unit	New	443.88	9	\$1,056.09	45%	at stock turnover	\$0.37	3.47	3.48	ENERGY STAR
Lodging	Refrigeration	Vending Machine	1 unit	New	81.00	10	\$42.81	45%	at stock turnover	\$0.07	2.49	2.49	EIA 2011-2012 Ref. Case
Lodging	Food Preparation	Oven	1 unit	New	15,104.75	10	\$1,067.99	66%	at stock turnover	-\$0.01	6.39	6.39	RTF Workbook
Lodging	Food Preparation	Fryer	1 unit	New	2,881.11	10	\$782.02	76%	at stock turnover	\$0.04	7.15	7.15	RTF Workbook
Lodging	Food Preparation	Dishwasher	1 unit	New	1,348.33	15	\$564.57	43%	at stock turnover	-\$0.13	4.30	4.30	ENERGY STAR
Lodging	Food Preparation	Hot Food Container	1 unit	New	802.23	20	\$490.95	43%	at stock turnover	\$0.06	7.72	7.72	RTF Workbook
Lodging	Food Preparation	Steamer	1 unit	New	66,188.82	9	\$837.45	43%	at stock turnover	-\$0.02	76.81	76.81	RTF Workbook
Lodging	Office Equipment	Desktop Computer	1 unit	New	123.52	5	\$0.01	100%	at stock turnover	\$0.00	9.10	9.10	7th Power Plan
Lodging	Office Equipment	Laptop	1 unit	New	36.86	4	\$0.01	100%	at stock turnover	\$0.00	1.23	1.23	7th Power Plan
Lodging	Office Equipment	Monitor	1 unit	New	30.65	5	\$0.01	100%	at stock turnover	\$0.00	0.57	0.57	7th Power Plan
Lodging	Office Equipment	Server	1 unit	New	74.10	4	\$0.01	100%	at stock turnover	\$0.00	5.41	5.41	AEG Research
Lodging	Office Equipment	Printer/Copier/Fax	1 unit	New	223.00	6	\$0.01	100%	at stock turnover	\$0.00	0.27	0.27	ENERGY STAR
Lodging	Office Equipment	POS Terminal	1 unit	New	123.52	5	\$0.01	40%	at stock turnover	\$0.00	1.44	1.44	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Lodging	Miscellaneous	Non-HVAC Motors	1 unit	New	0.00	15	\$0.00	90%	at stock turnover	\$0.00	0.00	0.00	N/A
Lodging	Miscellaneous	Pool Pump	1 unit	New	1,432.30	10	\$246.30	0%	at stock turnover	\$0.02	3.34	3.34	Southern California Edison
Lodging	Miscellaneous	Pool Heater	1 unit	New	15,277.63	15	\$3,546.07	0%	at stock turnover	\$0.03	2.14	2.14	AEG Research
Lodging	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Warehouse	Cooling	Air-Cooled Chiller	1 kBTU/hr	Existing	0.00	20	\$26.36	14%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Warehouse	Cooling	Water-Cooled Chiller	1 kBTU/hr	Existing	0.00	25	\$12.65	9%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Warehouse	Cooling	RTU	1 kBTU/hr	Existing	3.18	15	\$6.75	45%	at stock turnover	\$0.23	119.88	119.88	Annual Energy Outlook, 2015
Warehouse	Cooling	Room AC	1 kBTU/hr	Existing	12.55	15	\$23.62	2%	at stock turnover	\$0.21	31.04	31.04	Annual Energy Outlook, 2015
Warehouse	Cooling	Evaporative AC	11 per TR	Existing	0.00	15	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	New Buildings Institute Study, 2006
Warehouse	Cooling	Air-Source Heat Pump	1 kBTU/hr	Existing	6.12	15	\$21.65	14%	at stock turnover	\$0.16	17.86	17.86	Annual Energy Outlook, 2015
Warehouse	Heating	Air-Source Heat Pump	1 kBTU/hr	Existing	8.20	15	\$21.65	14%	at stock turnover	\$0.16	23.91	23.91	Annual Energy Outlook, 2015
Warehouse	Cooling	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	8%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Warehouse	Heating	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	8%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Warehouse	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	1%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Warehouse	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	24%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Warehouse	Ventilation	Ventilation	1000 CFM	Existing	2,269.39	20	\$1,219.71	100%	at stock turnover	\$0.05	695.02	695.02	AEG-BEST
Warehouse	Water Heating	Water Heater	65 gallons	Existing	1,989.54	13	\$3,537.01	45%	at stock turnover	\$0.21	975.61	975.61	7th Power Plan
Warehouse	Interior Lighting	Screw-in	lamps	Existing	45.07	8	\$3.95	100%	at stock turnover	\$0.00	230.31	360.57	7th Power Plan
Warehouse	Interior Lighting	Linear Lighting	lamps	Existing	74.81	17	\$52.83	100%	at stock turnover	\$0.05	1,537.91	1,461.93	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Warehouse	Interior Lighting	High-Bay Fixtures	lamps	Existing	343.37	15	\$123.86	100%	at stock turnover	\$0.04	6,535.34	6,290.74	Annual Energy Outlook, 2015
Warehouse	Exterior Lighting	Screw-in	lamps	Existing	62.33	8	\$3.95	100%	at stock turnover	\$0.00	31.13	32.63	7th Power Plan
Warehouse	Exterior Lighting	Linear Lighting	lamps	Existing	139.13	17	\$52.83	100%	at stock turnover	\$0.03	438.32	416.84	7th Power Plan
Warehouse	Exterior Lighting	Area Lighting	lamps	Existing	968.80	15	\$44.55	100%	at stock turnover	-\$0.02	1,828.10	1,722.29	Annual Energy Outlook, 2015
Warehouse	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	Existing	1,507.00	11	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Warehouse	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	Existing	605.00	15	\$0.00	14%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Warehouse	Refrigeration	Glass Door Display	1 unit	Existing	767.00	15	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Warehouse	Refrigeration	Open Display Case	1 unit	Existing	1,438.00	10	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Warehouse	Refrigeration	Icemaker	1 unit	Existing	443.88	9	\$1,056.09	45%	at stock turnover	\$0.37	33.38	33.63	ENERGY STAR
Warehouse	Refrigeration	Vending Machine	1 unit	Existing	81.00	10	\$42.81	45%	at stock turnover	\$0.07	2.41	2.41	EIA 2011-2012 Ref. Case
Warehouse	Food Preparation	Oven	1 unit	Existing	15,104.75	10	\$1,067.99	66%	at stock turnover	-\$0.01	25.21	25.21	RTF Workbook
Warehouse	Food Preparation	Fryer	1 unit	Existing	2,881.11	10	\$782.02	76%	at stock turnover	\$0.04	1.83	1.83	RTF Workbook
Warehouse	Food Preparation	Dishwasher	1 unit	Existing	1,348.33	15	\$564.57	43%	at stock turnover	-\$0.13	8.32	8.32	ENERGY STAR
Warehouse	Food Preparation	Hot Food Container	1 unit	Existing	802.23	20	\$490.95	43%	at stock turnover	\$0.06	4.80	4.80	RTF Workbook
Warehouse	Food Preparation	Steamer	1 unit	Existing	66,188.82	9	\$837.45	43%	at stock turnover	-\$0.02	55.55	55.55	RTF Workbook
Warehouse	Office Equipment	Desktop Computer	1 unit	Existing	123.52	5	\$0.01	100%	at stock turnover	\$0.00	235.91	235.91	7th Power Plan
Warehouse	Office Equipment	Laptop	1 unit	Existing	36.86	4	\$0.01	100%	at stock turnover	\$0.00	23.23	23.23	7th Power Plan
Warehouse	Office Equipment	Monitor	1 unit	Existing	30.65	5	\$0.01	100%	at stock turnover	\$0.00	14.77	14.77	7th Power Plan
Warehouse	Office Equipment	Server	1 unit	Existing	74.10	4	\$0.01	100%	at stock turnover	\$0.00	245.08	245.08	AEG Research

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Warehouse	Office Equipment	Printer/Copier/Fax	1 unit	Existing	223.00	6	\$0.01	100%	at stock turnover	\$0.00	5.43	5.43	ENERGY STAR
Warehouse	Office Equipment	POS Terminal	1 unit	Existing	123.52	5	\$0.01	40%	at stock turnover	\$0.00	83.54	83.54	7th Power Plan
Warehouse	Miscellaneous	Non-HVAC Motors	1 unit	Existing	0.00	15	\$0.00	90%	at stock turnover	\$0.00	0.00	0.00	N/A
Warehouse	Miscellaneous	Pool Pump	1 unit	Existing	0.00	10	\$246.30	0%	at stock turnover	\$0.00	0.00	0.00	Southern California Edison
Warehouse	Miscellaneous	Pool Heater	1 unit	Existing	0.00	15	\$3,546.07	0%	at stock turnover	\$0.00	0.00	0.00	AEG Research
Warehouse	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Warehouse	Cooling	Air-Cooled Chiller	1 kBTU/hr	New	0.00	20	\$26.36	14%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Warehouse	Cooling	Water-Cooled Chiller	1 kBTU/hr	New	0.00	25	\$12.65	9%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Warehouse	Cooling	RTU	1 kBTU/hr	New	3.09	15	\$6.75	45%	at stock turnover	\$0.24	70.29	70.29	Annual Energy Outlook, 2015
Warehouse	Cooling	Room AC	1 kBTU/hr	New	10.98	15	\$23.62	2%	at stock turnover	\$0.23	16.38	16.38	Annual Energy Outlook, 2015
Warehouse	Cooling	Evaporative AC	11 per TR	New	0.00	15	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	New Buildings Institute Study, 2006
Warehouse	Cooling	Air-Source Heat Pump	1 kBTU/hr	New	5.29	15	\$21.65	14%	at stock turnover	\$0.18	9.72	9.72	Annual Energy Outlook, 2015
Warehouse	Heating	Air-Source Heat Pump	1 kBTU/hr	New	7.86	15	\$21.65	14%	at stock turnover	\$0.18	14.45	14.45	Annual Energy Outlook, 2015
Warehouse	Cooling	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	8%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Warehouse	Heating	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	8%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Warehouse	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	1%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Warehouse	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	24%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Warehouse	Ventilation	Ventilation	1000 CFM	New	1,964.09	20	\$1,219.71	100%	at stock turnover	\$0.06	413.81	413.81	AEG-BEST
Warehouse	Water Heating	Water Heater	65 gallons	New	2,158.14	13	\$3,537.01	45%	at stock turnover	\$0.19	562.05	562.05	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Warehouse	Interior Lighting	Screw-in	lamps	New	45.07	8	\$3.95	100%	at stock turnover	\$0.00	96.69	105.02	7th Power Plan
Warehouse	Interior Lighting	Linear Lighting	lamps	New	53.68	17	\$52.83	100%	at stock turnover	\$0.08	451.66	455.01	7th Power Plan
Warehouse	Interior Lighting	High-Bay Fixtures	lamps	New	343.37	15	\$123.86	100%	at stock turnover	\$0.04	3,954.04	3,846.10	Annual Energy Outlook, 2015
Warehouse	Exterior Lighting	Screw-in	lamps	New	52.92	8	\$3.95	100%	at stock turnover	\$0.00	22.27	20.89	7th Power Plan
Warehouse	Exterior Lighting	Linear Lighting	lamps	New	139.13	17	\$52.83	100%	at stock turnover	\$0.03	223.57	214.54	7th Power Plan
Warehouse	Exterior Lighting	Area Lighting	lamps	New	935.62	15	\$44.55	100%	at stock turnover	-\$0.02	1,357.14	1,320.71	Annual Energy Outlook, 2015
Warehouse	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	New	1,507.00	11	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Warehouse	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	New	605.00	15	\$0.00	14%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Warehouse	Refrigeration	Glass Door Display	1 unit	New	767.00	15	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Warehouse	Refrigeration	Open Display Case	1 unit	New	1,438.00	10	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Warehouse	Refrigeration	Icemaker	1 unit	New	443.88	9	\$1,056.09	45%	at stock turnover	\$0.37	16.96	17.02	ENERGY STAR
Warehouse	Refrigeration	Vending Machine	1 unit	New	78.42	10	\$42.81	45%	at stock turnover	\$0.07	-0.25	0.01	EIA 2011-2012 Ref. Case
Warehouse	Food Preparation	Oven	1 unit	New	15,104.75	10	\$1,067.99	66%	at stock turnover	-\$0.01	14.18	14.18	RTF Workbook
Warehouse	Food Preparation	Fryer	1 unit	New	2,808.59	10	\$782.02	76%	at stock turnover	\$0.04	1.11	1.11	RTF Workbook
Warehouse	Food Preparation	Dishwasher	1 unit	New	1,348.33	15	\$564.57	43%	at stock turnover	-\$0.13	1.86	1.86	ENERGY STAR
Warehouse	Food Preparation	Hot Food Container	1 unit	New	659.29	20	\$490.95	43%	at stock turnover	\$0.07	4.09	4.09	RTF Workbook
Warehouse	Food Preparation	Steamer	1 unit	New	66,188.82	9	\$837.45	43%	at stock turnover	-\$0.02	31.80	31.80	RTF Workbook
Warehouse	Office Equipment	Desktop Computer	1 unit	New	133.90	5	\$0.01	100%	at stock turnover	\$0.00	71.68	71.68	7th Power Plan
Warehouse	Office Equipment	Laptop	1 unit	New	36.86	4	\$0.01	100%	at stock turnover	\$0.00	9.59	9.59	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Warehouse	Office Equipment	Monitor	1 unit	New	27.21	5	\$0.01	100%	at stock turnover	\$0.00	12.38	12.38	7th Power Plan
Warehouse	Office Equipment	Server	1 unit	New	74.10	4	\$0.01	100%	at stock turnover	\$0.00	97.59	97.59	AEG Research
Warehouse	Office Equipment	Printer/Copier/Fax	1 unit	New	161.54	6	\$0.01	100%	at stock turnover	\$0.00	18.79	18.79	ENERGY STAR
Warehouse	Office Equipment	POS Terminal	1 unit	New	123.52	5	\$0.01	40%	at stock turnover	\$0.00	37.38	37.38	7th Power Plan
Warehouse	Miscellaneous	Non-HVAC Motors	1 unit	New	0.00	15	\$0.00	90%	at stock turnover	\$0.00	0.00	0.00	N/A
Warehouse	Miscellaneous	Pool Pump	1 unit	New	0.00	10	\$246.30	0%	at stock turnover	\$0.00	0.00	0.00	Southern California Edison
Warehouse	Miscellaneous	Pool Heater	1 unit	New	0.00	15	\$3,546.07	0%	at stock turnover	\$0.00	0.00	0.00	AEG Research
Warehouse	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Warehouse, Controlled Atm.	Cooling	Air-Cooled Chiller	1 kBTU/hr	Existing	14.59	20	\$26.36	14%	at stock turnover	\$0.17	323.02	323.02	Annual Energy Outlook, 2015
Warehouse, Controlled Atm.	Cooling	Water-Cooled Chiller	1 kBTU/hr	Existing	22.27	25	\$12.65	9%	at stock turnover	\$0.05	54.78	54.78	Annual Energy Outlook, 2015
Warehouse, Controlled Atm.	Cooling	RTU	1 kBTU/hr	Existing	2.30	15	\$6.75	45%	at stock turnover	\$0.32	79.55	79.55	Annual Energy Outlook, 2015
Warehouse, Controlled Atm.	Cooling	Room AC	1 kBTU/hr	Existing	9.06	15	\$23.62	2%	at stock turnover	\$0.28	18.91	18.91	Annual Energy Outlook, 2015
Warehouse, Controlled Atm.	Cooling	Evaporative AC	11 per TR	Existing	0.00	15	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	New Buildings Institute Study, 2006
Warehouse, Controlled Atm.	Cooling	Air-Source Heat Pump	1 kBTU/hr	Existing	4.42	15	\$21.65	14%	at stock turnover	\$0.22	10.59	10.59	Annual Energy Outlook, 2015
Warehouse, Controlled Atm.	Heating	Air-Source Heat Pump	1 kBTU/hr	Existing	6.10	15	\$21.65	14%	at stock turnover	\$0.22	14.61	14.61	Annual Energy Outlook, 2015
Warehouse, Controlled Atm.	Cooling	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	8%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Warehouse, Controlled Atm.	Heating	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	8%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Warehouse, Controlled Atm.	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	1%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Warehouse, Controlled Atm.	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	24%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Warehouse, Controlled Atm.	Ventilation	Ventilation	1000 CFM	Existing	5,285.98	20	\$1,219.71	100%	at stock turnover	\$0.02	1,530.65	1,530.65	AEG-BEST
Warehouse, Controlled Atm.	Water Heating	Water Heater	65 gallons	Existing	1,989.54	13	\$3,537.01	45%	at stock turnover	\$0.21	1,322.66	1,322.66	7th Power Plan
Warehouse, Controlled Atm.	Interior Lighting	Screw-in	lamps	Existing	86.90	8	\$3.95	100%	at stock turnover	\$0.00	571.66	551.13	7th Power Plan
Warehouse, Controlled Atm.	Interior Lighting	Linear Lighting	lamps	Existing	74.81	17	\$52.83	100%	at stock turnover	\$0.05	1,164.80	1,107.25	7th Power Plan
Warehouse, Controlled Atm.	Interior Lighting	High-Bay Fixtures	lamps	Existing	469.89	15	\$123.86	100%	at stock turnover	\$0.03	6,813.75	6,894.37	Annual Energy Outlook, 2015
Warehouse, Controlled Atm.	Exterior Lighting	Screw-in	lamps	Existing	62.33	8	\$3.95	100%	at stock turnover	\$0.00	23.58	24.71	7th Power Plan
Warehouse, Controlled Atm.	Exterior Lighting	Linear Lighting	lamps	Existing	104.90	17	\$52.83	100%	at stock turnover	\$0.04	125.34	125.88	7th Power Plan
Warehouse, Controlled Atm.	Exterior Lighting	Area Lighting	lamps	Existing	968.80	15	\$44.55	100%	at stock turnover	-\$0.02	1,384.58	1,304.45	Annual Energy Outlook, 2015
Warehouse, Controlled Atm.	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	Existing	2,319.57	11	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Warehouse, Controlled Atm.	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	Existing	605.00	15	\$0.00	14%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Warehouse, Controlled Atm.	Refrigeration	Glass Door Display	1 unit	Existing	767.00	15	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Warehouse, Controlled Atm.	Refrigeration	Open Display Case	1 unit	Existing	1,438.00	10	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Warehouse, Controlled Atm.	Refrigeration	Icemaker	1 unit	Existing	429.04	9	\$1,056.09	45%	at stock turnover	\$0.39	910.17	910.17	ENERGY STAR
Warehouse, Controlled Atm.	Refrigeration	Vending Machine	1 unit	Existing	81.00	10	\$42.81	45%	at stock turnover	\$0.07	53.82	53.82	EIA 2011-2012 Ref. Case
Warehouse, Controlled Atm.	Food Preparation	Oven	1 unit	Existing	22,001.83	10	\$1,067.99	66%	at stock turnover	-\$0.01	46.11	46.11	RTF Workbook
Warehouse, Controlled Atm.	Food Preparation	Fryer	1 unit	Existing	2,881.11	10	\$782.02	76%	at stock turnover	\$0.04	37.42	37.42	RTF Workbook
Warehouse, Controlled Atm.	Food Preparation	Dishwasher	1 unit	Existing	1,277.15	15	\$564.57	43%	at stock turnover	-\$0.14	45.02	45.02	ENERGY STAR
Warehouse, Controlled Atm.	Food Preparation	Hot Food Container	1 unit	Existing	802.23	20	\$490.95	43%	at stock turnover	\$0.06	19.47	19.47	RTF Workbook
Warehouse, Controlled Atm.	Food Preparation	Steamer	1 unit	Existing	70,815.73	9	\$837.45	43%	at stock turnover	-\$0.02	232.70	232.70	RTF Workbook

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Warehouse, Controlled Atm.	Office Equipment	Desktop Computer	1 unit	Existing	123.52	5	\$0.01	100%	at stock turnover	\$0.00	120.96	120.96	7th Power Plan
Warehouse, Controlled Atm.	Office Equipment	Laptop	1 unit	Existing	36.86	4	\$0.01	100%	at stock turnover	\$0.00	11.91	11.91	7th Power Plan
Warehouse, Controlled Atm.	Office Equipment	Monitor	1 unit	Existing	30.65	5	\$0.01	100%	at stock turnover	\$0.00	7.57	7.57	7th Power Plan
Warehouse, Controlled Atm.	Office Equipment	Server	1 unit	Existing	87.28	4	\$0.01	100%	at stock turnover	\$0.00	33.63	33.63	AEG Research
Warehouse, Controlled Atm.	Office Equipment	Printer/Copier/Fax	1 unit	Existing	223.00	6	\$0.01	100%	at stock turnover	\$0.00	2.79	2.79	ENERGY STAR
Warehouse, Controlled Atm.	Office Equipment	POS Terminal	1 unit	Existing	177.75	5	\$0.01	40%	at stock turnover	\$0.00	5.48	5.48	7th Power Plan
Warehouse, Controlled Atm.	Miscellaneous	Non-HVAC Motors	1 unit	Existing	0.00	15	\$0.00	90%	at stock turnover	\$0.00	0.00	0.00	N/A
Warehouse, Controlled Atm.	Miscellaneous	Pool Pump	1 unit	Existing	0.00	10	\$246.30	0%	at stock turnover	\$0.00	0.00	0.00	Southern California Edison
Warehouse, Controlled Atm.	Miscellaneous	Pool Heater	1 unit	Existing	0.00	15	\$3,546.07	0%	at stock turnover	\$0.00	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Warehouse, Controlled Atm.	Cooling	Air-Cooled Chiller	1 kBTU/hr	New	12.56	20	\$26.36	14%	at stock turnover	\$0.20	218.64	218.64	Annual Energy Outlook, 2015
Warehouse, Controlled Atm.	Cooling	Water-Cooled Chiller	1 kBTU/hr	New	19.38	25	\$12.65	9%	at stock turnover	\$0.06	33.14	33.14	Annual Energy Outlook, 2015
Warehouse, Controlled Atm.	Cooling	RTU	1 kBTU/hr	New	2.23	15	\$6.75	45%	at stock turnover	\$0.33	46.64	46.64	Annual Energy Outlook, 2015
Warehouse, Controlled Atm.	Cooling	Room AC	1 kBTU/hr	New	7.93	15	\$23.62	2%	at stock turnover	\$0.32	9.98	9.98	Annual Energy Outlook, 2015
Warehouse, Controlled Atm.	Cooling	Evaporative AC	11 per TR	New	0.00	15	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	New Buildings Institute Study, 2006
Warehouse, Controlled Atm.	Cooling	Air-Source Heat Pump	1 kBTU/hr	New	3.82	15	\$21.65	14%	at stock turnover	\$0.24	5.76	5.76	Annual Energy Outlook, 2015
Warehouse, Controlled Atm.	Heating	Air-Source Heat Pump	1 kBTU/hr	New	5.85	15	\$21.65	14%	at stock turnover	\$0.24	8.83	8.83	Annual Energy Outlook, 2015
Warehouse, Controlled Atm.	Cooling	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	8%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Warehouse, Controlled Atm.	Heating	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	8%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Warehouse, Controlled Atm.	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	1%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Warehouse, Controlled Atm.	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	24%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Warehouse, Controlled Atm.	Ventilation	Ventilation	1000 CFM	New	4,697.05	20	\$1,219.71	100%	at stock turnover	\$0.02	861.22	861.22	AEG-BEST
Warehouse, Controlled Atm.	Water Heating	Water Heater	65 gallons	New	2,164.01	13	\$3,537.01	45%	at stock turnover	\$0.19	764.00	764.00	7th Power Plan
Warehouse, Controlled Atm.	Interior Lighting	Screw-in	lamps	New	87.84	8	\$3.95	100%	at stock turnover	\$0.00	292.23	287.63	7th Power Plan
Warehouse, Controlled Atm.	Interior Lighting	Linear Lighting	lamps	New	74.81	17	\$52.83	100%	at stock turnover	\$0.05	594.78	570.59	7th Power Plan
Warehouse, Controlled Atm.	Interior Lighting	High-Bay Fixtures	lamps	New	469.89	15	\$123.86	100%	at stock turnover	\$0.03	4,109.77	4,154.44	Annual Energy Outlook, 2015
Warehouse, Controlled Atm.	Exterior Lighting	Screw-in	lamps	New	62.33	8	\$3.95	100%	at stock turnover	\$0.00	6.99	6.59	7th Power Plan
Warehouse, Controlled Atm.	Exterior Lighting	Linear Lighting	lamps	New	104.90	17	\$52.83	100%	at stock turnover	\$0.04	68.62	68.85	7th Power Plan
Warehouse, Controlled Atm.	Exterior Lighting	Area Lighting	lamps	New	968.80	15	\$44.55	100%	at stock turnover	-\$0.02	844.44	807.84	Annual Energy Outlook, 2015
Warehouse, Controlled Atm.	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	New	2,319.57	11	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Warehouse, Controlled Atm.	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	New	605.00	15	\$0.00	14%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Warehouse, Controlled Atm.	Refrigeration	Glass Door Display	1 unit	New	767.00	15	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Warehouse, Controlled Atm.	Refrigeration	Open Display Case	1 unit	New	1,438.00	10	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Warehouse, Controlled Atm.	Refrigeration	Icemaker	1 unit	New	429.04	9	\$1,056.09	45%	at stock turnover	\$0.39	488.70	488.70	ENERGY STAR
Warehouse, Controlled Atm.	Refrigeration	Vending Machine	1 unit	New	81.00	10	\$42.81	45%	at stock turnover	\$0.07	27.20	27.20	EIA 2011-2012 Ref. Case
Warehouse, Controlled Atm.	Food Preparation	Oven	1 unit	New	22,001.83	10	\$1,067.99	66%	at stock turnover	-\$0.01	25.58	25.58	RTF Workbook
Warehouse, Controlled Atm.	Food Preparation	Fryer	1 unit	New	2,881.11	10	\$782.02	76%	at stock turnover	\$0.04	19.71	19.71	RTF Workbook
Warehouse, Controlled Atm.	Food Preparation	Dishwasher	1 unit	New	1,277.15	15	\$564.57	43%	at stock turnover	-\$0.14	18.84	18.84	ENERGY STAR

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Warehouse, Controlled Atm.	Food Preparation	Hot Food Container	1 unit	New	802.23	20	\$490.95	43%	at stock turnover	\$0.06	13.64	13.64	RTF Workbook
Warehouse, Controlled Atm.	Food Preparation	Steamer	1 unit	New	70,815.73	9	\$837.45	43%	at stock turnover	-\$0.02	132.31	132.31	RTF Workbook
Warehouse, Controlled Atm.	Office Equipment	Desktop Computer	1 unit	New	123.52	5	\$0.01	100%	at stock turnover	\$0.00	45.74	45.74	7th Power Plan
Warehouse, Controlled Atm.	Office Equipment	Laptop	1 unit	New	36.86	4	\$0.01	100%	at stock turnover	\$0.00	4.92	4.92	7th Power Plan
Warehouse, Controlled Atm.	Office Equipment	Monitor	1 unit	New	30.65	5	\$0.01	100%	at stock turnover	\$0.00	2.86	2.86	7th Power Plan
Warehouse, Controlled Atm.	Office Equipment	Server	1 unit	New	87.28	4	\$0.01	100%	at stock turnover	\$0.00	13.39	13.39	AEG Research
Warehouse, Controlled Atm.	Office Equipment	Printer/Copier/Fax	1 unit	New	223.00	6	\$0.01	100%	at stock turnover	\$0.00	1.33	1.33	ENERGY STAR
Warehouse, Controlled Atm.	Office Equipment	POS Terminal	1 unit	New	177.75	5	\$0.01	40%	at stock turnover	\$0.00	2.45	2.45	7th Power Plan
Warehouse, Controlled Atm.	Miscellaneous	Non-HVAC Motors	1 unit	New	0.00	15	\$0.00	90%	at stock turnover	\$0.00	0.00	0.00	N/A
Warehouse, Controlled Atm.	Miscellaneous	Pool Pump	1 unit	New	0.00	10	\$246.30	0%	at stock turnover	\$0.00	0.00	0.00	Southern California Edison
Warehouse, Controlled Atm.	Miscellaneous	Pool Heater	1 unit	New	0.00	15	\$3,546.07	0%	at stock turnover	\$0.00	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Data Center	Cooling	Air-Cooled Chiller	1 kBTU/hr	Existing	88.71	20	\$26.36	14%	at stock turnover	\$0.03	5.38	5.38	Annual Energy Outlook, 2015
Data Center	Cooling	Water-Cooled Chiller	1 kBTU/hr	Existing	140.52	25	\$12.65	9%	at stock turnover	\$0.01	5.24	5.24	Annual Energy Outlook, 2015
Data Center	Cooling	RTU	1 kBTU/hr	Existing	13.11	15	\$6.75	45%	at stock turnover	\$0.06	3.07	3.07	Annual Energy Outlook, 2015
Data Center	Cooling	Room AC	1 kBTU/hr	Existing	51.72	15	\$23.62	2%	at stock turnover	\$0.05	0.64	0.64	Annual Energy Outlook, 2015
Data Center	Cooling	Evaporative AC	11 per TR	Existing	0.00	15	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	New Buildings Institute Study, 2006
Data Center	Cooling	Air-Source Heat Pump	1 kBTU/hr	Existing	25.25	15	\$21.65	14%	at stock turnover	\$0.09	1.39	1.39	Annual Energy Outlook, 2015
Data Center	Heating	Air-Source Heat Pump	1 kBTU/hr	Existing	0.72	15	\$21.65	14%	at stock turnover	\$0.09	0.04	0.04	Annual Energy Outlook, 2015

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Data Center	Cooling	Geothermal Heat Pump	1 kBTU/hr	Existing	61.39	25	\$26.36	8%	at stock turnover	\$0.04	1.36	1.36	Annual Energy Outlook, 2015
Data Center	Heating	Geothermal Heat Pump	1 kBTU/hr	Existing	2.61	25	\$26.36	8%	at stock turnover	\$0.04	0.06	0.06	Annual Energy Outlook, 2015
Data Center	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	1%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Data Center	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	24%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Data Center	Ventilation	Ventilation	1000 CFM	Existing	4,007.64	20	\$1,219.71	100%	at stock turnover	\$0.03	32.30	32.30	AEG-BEST
Data Center	Water Heating	Water Heater	65 gallons	Existing	1,989.54	13	\$3,537.01	45%	at stock turnover	\$0.21	0.84	0.84	7th Power Plan
Data Center	Interior Lighting	Screw-in	lamps	Existing	112.08	8	\$3.95	100%	at stock turnover	\$0.00	2.18	2.10	7th Power Plan
Data Center	Interior Lighting	Linear Lighting	lamps	Existing	93.43	17	\$52.83	100%	at stock turnover	\$0.04	8.57	8.15	7th Power Plan
Data Center	Interior Lighting	High-Bay Fixtures	lamps	Existing	517.62	15	\$123.86	100%	at stock turnover	\$0.03	5.89	6.05	Annual Energy Outlook, 2015
Data Center	Exterior Lighting	Screw-in	lamps	Existing	92.00	8	\$3.95	100%	at stock turnover	\$0.00	0.05	0.12	7th Power Plan
Data Center	Exterior Lighting	Linear Lighting	lamps	Existing	95.49	17	\$52.83	100%	at stock turnover	\$0.04	0.30	0.30	7th Power Plan
Data Center	Exterior Lighting	Area Lighting	lamps	Existing	1,067.47	15	\$44.55	100%	at stock turnover	-\$0.02	2.24	2.11	Annual Energy Outlook, 2015
Data Center	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	Existing	2,053.40	11	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Data Center	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	Existing	605.00	15	\$0.00	14%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Data Center	Refrigeration	Glass Door Display	1 unit	Existing	767.00	15	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Data Center	Refrigeration	Open Display Case	1 unit	Existing	1,438.00	10	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Data Center	Refrigeration	Icemaker	1 unit	Existing	429.04	9	\$1,056.09	45%	at stock turnover	\$0.39	0.00	0.00	ENERGY STAR
Data Center	Refrigeration	Vending Machine	1 unit	Existing	81.00	10	\$42.81	45%	at stock turnover	\$0.07	0.00	0.00	EIA 2011-2012 Ref. Case
Data Center	Food Preparation	Oven	1 unit	Existing	22,001.83	10	\$1,067.99	66%	at stock turnover	-\$0.01	0.01	0.01	RTF Workbook

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Data Center	Food Preparation	Fryer	1 unit	Existing	2,881.11	10	\$782.02	76%	at stock turnover	\$0.04	0.00	0.00	RTF Workbook
Data Center	Food Preparation	Dishwasher	1 unit	Existing	1,277.15	15	\$564.57	43%	at stock turnover	-\$0.14	0.02	0.02	ENERGY STAR
Data Center	Food Preparation	Hot Food Container	1 unit	Existing	802.23	20	\$490.95	43%	at stock turnover	\$0.06	0.00	0.00	RTF Workbook
Data Center	Food Preparation	Steamer	1 unit	Existing	70,815.73	9	\$837.45	43%	at stock turnover	-\$0.02	0.05	0.05	RTF Workbook
Data Center	Office Equipment	Desktop Computer	1 unit	Existing	123.52	5	\$0.01	100%	at stock turnover	\$0.00	5.81	5.81	7th Power Plan
Data Center	Office Equipment	Laptop	1 unit	Existing	36.86	4	\$0.01	100%	at stock turnover	\$0.00	0.29	0.29	7th Power Plan
Data Center	Office Equipment	Monitor	1 unit	Existing	30.65	5	\$0.01	100%	at stock turnover	\$0.00	0.36	0.36	7th Power Plan
Data Center	Office Equipment	Server	1 unit	Existing	87.28	4	\$0.01	100%	at stock turnover	\$0.00	17.44	17.44	AEG Research
Data Center	Office Equipment	Printer/Copier/Fax	1 unit	Existing	223.00	6	\$0.01	100%	at stock turnover	\$0.00	0.13	0.13	ENERGY STAR
Data Center	Office Equipment	POS Terminal	1 unit	Existing	177.75	5	\$0.01	40%	at stock turnover	\$0.00	0.01	0.01	7th Power Plan
Data Center	Miscellaneous	Non-HVAC Motors	1 unit	Existing	0.00	15	\$0.00	90%	at stock turnover	\$0.00	0.00	0.00	N/A
Data Center	Miscellaneous	Pool Pump	1 unit	Existing	0.00	10	\$246.30	0%	at stock turnover	\$0.00	0.00	0.00	Southern California Edison
Data Center	Miscellaneous	Pool Heater	1 unit	Existing	0.00	15	\$3,546.07	0%	at stock turnover	\$0.00	0.00	0.00	AEG Research
Data Center	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Data Center	Cooling	Air-Cooled Chiller	1 kBtu/hr	New	76.35	20	\$26.36	14%	at stock turnover	\$0.03	3.64	3.64	Annual Energy Outlook, 2015
Data Center	Cooling	Water-Cooled Chiller	1 kBtu/hr	New	122.27	25	\$12.65	9%	at stock turnover	\$0.01	3.17	3.17	Annual Energy Outlook, 2015
Data Center	Cooling	RTU	1 kBtu/hr	New	12.74	15	\$6.75	45%	at stock turnover	\$0.06	1.80	1.80	Annual Energy Outlook, 2015
Data Center	Cooling	Room AC	1 kBtu/hr	New	45.26	15	\$23.62	2%	at stock turnover	\$0.06	0.34	0.34	Annual Energy Outlook, 2015
Data Center	Cooling	Evaporative AC	11 per TR	New	0.00	15	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	New Buildings Institute Study, 2006

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Data Center	Cooling	Air-Source Heat Pump	1 kBTU/hr	New	21.81	15	\$21.65	14%	at stock turnover	\$0.10	0.75	0.75	Annual Energy Outlook, 2015
Data Center	Heating	Air-Source Heat Pump	1 kBTU/hr	New	0.69	15	\$21.65	14%	at stock turnover	\$0.10	0.02	0.02	Annual Energy Outlook, 2015
Data Center	Cooling	Geothermal Heat Pump	1 kBTU/hr	New	44.20	25	\$26.36	8%	at stock turnover	\$0.05	0.68	0.68	Annual Energy Outlook, 2015
Data Center	Heating	Geothermal Heat Pump	1 kBTU/hr	New	1.20	25	\$26.36	8%	at stock turnover	\$0.05	0.02	0.02	Annual Energy Outlook, 2015
Data Center	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	1%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Data Center	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	24%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Data Center	Ventilation	Ventilation	1000 CFM	New	3,870.06	20	\$1,219.71	100%	at stock turnover	\$0.03	17.19	17.19	AEG-BEST
Data Center	Water Heating	Water Heater	65 gallons	New	2,158.14	13	\$3,537.01	45%	at stock turnover	\$0.19	0.48	0.48	7th Power Plan
Data Center	Interior Lighting	Screw-in	lamps	New	62.07	8	\$3.95	100%	at stock turnover	\$0.00	0.16	0.20	7th Power Plan
Data Center	Interior Lighting	Linear Lighting	lamps	New	69.05	17	\$52.83	100%	at stock turnover	\$0.06	2.61	2.63	7th Power Plan
Data Center	Interior Lighting	High-Bay Fixtures	lamps	New	398.36	15	\$123.86	100%	at stock turnover	\$0.03	1.72	1.66	Annual Energy Outlook, 2015
Data Center	Exterior Lighting	Screw-in	lamps	New	122.41	8	\$3.95	100%	at stock turnover	\$0.00	0.06	0.06	7th Power Plan
Data Center	Exterior Lighting	Linear Lighting	lamps	New	121.74	17	\$52.83	100%	at stock turnover	\$0.03	0.27	0.26	7th Power Plan
Data Center	Exterior Lighting	Area Lighting	lamps	New	945.63	15	\$44.55	100%	at stock turnover	-\$0.02	1.56	1.53	Annual Energy Outlook, 2015
Data Center	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	New	1,507.00	11	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Data Center	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	New	605.00	15	\$0.00	14%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Data Center	Refrigeration	Glass Door Display	1 unit	New	767.00	15	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Data Center	Refrigeration	Open Display Case	1 unit	New	1,438.00	10	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Data Center	Refrigeration	Icemaker	1 unit	New	443.88	9	\$1,056.09	45%	at stock turnover	\$0.37	0.00	0.00	ENERGY STAR

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Data Center	Refrigeration	Vending Machine	1 unit	New	78.42	10	\$42.81	45%	at stock turnover	\$0.07	0.00	0.00	EIA 2011-2012 Ref. Case
Data Center	Food Preparation	Oven	1 unit	New	15,104.75	10	\$1,067.99	66%	at stock turnover	-\$0.01	0.01	0.01	RTF Workbook
Data Center	Food Preparation	Fryer	1 unit	New	2,808.59	10	\$782.02	76%	at stock turnover	\$0.04	0.00	0.00	RTF Workbook
Data Center	Food Preparation	Dishwasher	1 unit	New	1,348.33	15	\$564.57	43%	at stock turnover	-\$0.13	0.00	0.00	ENERGY STAR
Data Center	Food Preparation	Hot Food Container	1 unit	New	659.29	20	\$490.95	43%	at stock turnover	\$0.07	0.00	0.00	RTF Workbook
Data Center	Food Preparation	Steamer	1 unit	New	66,188.82	9	\$837.45	43%	at stock turnover	-\$0.02	0.03	0.03	RTF Workbook
Data Center	Office Equipment	Desktop Computer	1 unit	New	133.90	5	\$0.01	100%	at stock turnover	\$0.00	1.76	1.76	7th Power Plan
Data Center	Office Equipment	Laptop	1 unit	New	36.86	4	\$0.01	100%	at stock turnover	\$0.00	0.12	0.12	7th Power Plan
Data Center	Office Equipment	Monitor	1 unit	New	27.21	5	\$0.01	100%	at stock turnover	\$0.00	0.30	0.30	7th Power Plan
Data Center	Office Equipment	Server	1 unit	New	74.10	4	\$0.01	100%	at stock turnover	\$0.00	26.03	26.03	AEG Research
Data Center	Office Equipment	Printer/Copier/Fax	1 unit	New	161.54	6	\$0.01	100%	at stock turnover	\$0.00	0.46	0.46	ENERGY STAR
Data Center	Office Equipment	POS Terminal	1 unit	New	123.52	5	\$0.01	40%	at stock turnover	\$0.00	0.05	0.05	7th Power Plan
Data Center	Miscellaneous	Non-HVAC Motors	1 unit	New	0.00	15	\$0.00	90%	at stock turnover	\$0.00	0.00	0.00	N/A
Data Center	Miscellaneous	Pool Pump	1 unit	New	0.00	10	\$246.30	0%	at stock turnover	\$0.00	0.00	0.00	Southern California Edison
Data Center	Miscellaneous	Pool Heater	1 unit	New	0.00	15	\$3,546.07	0%	at stock turnover	\$0.00	0.00	0.00	AEG Research
Data Center	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Miscellaneous	Cooling	Air-Cooled Chiller	1 kBTU/hr	Existing	8.38	20	\$26.36	14%	at stock turnover	\$0.30	328.27	328.27	Annual Energy Outlook, 2015
Miscellaneous	Cooling	Water-Cooled Chiller	1 kBTU/hr	Existing	13.20	25	\$12.65	9%	at stock turnover	\$0.09	267.66	267.66	Annual Energy Outlook, 2015
Miscellaneous	Cooling	RTU	1 kBTU/hr	Existing	1.35	15	\$6.75	45%	at stock turnover	\$0.55	368.34	368.34	Annual Energy Outlook, 2015

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Miscellaneous	Cooling	Room AC	1 kBTU/hr	Existing	5.32	15	\$23.62	2%	at stock turnover	\$0.48	129.91	129.91	Annual Energy Outlook, 2015
Miscellaneous	Cooling	Evaporative AC	11 per TR	Existing	0.00	15	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	New Buildings Institute Study, 2006
Miscellaneous	Cooling	Air-Source Heat Pump	1 kBTU/hr	Existing	2.59	15	\$21.65	14%	at stock turnover	\$0.52	50.04	50.04	Annual Energy Outlook, 2015
Miscellaneous	Heating	Air-Source Heat Pump	1 kBTU/hr	Existing	1.91	15	\$21.65	14%	at stock turnover	\$0.52	36.77	36.77	Annual Energy Outlook, 2015
Miscellaneous	Cooling	Geothermal Heat Pump	1 kBTU/hr	Existing	6.31	25	\$26.36	8%	at stock turnover	\$0.19	17.62	17.62	Annual Energy Outlook, 2015
Miscellaneous	Heating	Geothermal Heat Pump	1 kBTU/hr	Existing	6.69	25	\$26.36	8%	at stock turnover	\$0.19	18.70	18.70	Annual Energy Outlook, 2015
Miscellaneous	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	1%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Miscellaneous	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	24%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Miscellaneous	Ventilation	Ventilation	1000 CFM	Existing	4,033.42	20	\$1,219.71	100%	at stock turnover	\$0.03	1,134.93	1,134.93	AEG-BEST
Miscellaneous	Water Heating	Water Heater	65 gallons	Existing	2,148.18	13	\$3,537.01	45%	at stock turnover	\$0.19	4,327.92	4,327.92	7th Power Plan
Miscellaneous	Interior Lighting	Screw-in	lamps	Existing	74.83	8	\$3.95	100%	at stock turnover	\$0.00	836.63	1,528.72	7th Power Plan
Miscellaneous	Interior Lighting	Linear Lighting	lamps	Existing	86.92	17	\$52.83	100%	at stock turnover	\$0.05	3,276.73	3,306.91	7th Power Plan
Miscellaneous	Interior Lighting	High-Bay Fixtures	lamps	Existing	638.74	15	\$123.86	100%	at stock turnover	\$0.02	3,703.84	3,573.47	Annual Energy Outlook, 2015
Miscellaneous	Exterior Lighting	Screw-in	lamps	Existing	68.34	8	\$3.95	100%	at stock turnover	\$0.00	185.26	174.85	7th Power Plan
Miscellaneous	Exterior Lighting	Linear Lighting	lamps	Existing	138.50	17	\$52.83	100%	at stock turnover	\$0.03	230.62	218.94	7th Power Plan
Miscellaneous	Exterior Lighting	Area Lighting	lamps	Existing	940.62	15	\$44.55	100%	at stock turnover	-\$0.02	2,600.39	2,512.52	Annual Energy Outlook, 2015
Miscellaneous	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	Existing	1,507.00	11	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Miscellaneous	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	Existing	605.00	15	\$0.00	14%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Miscellaneous	Refrigeration	Glass Door Display	1 unit	Existing	767.00	15	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Miscellaneous	Refrigeration	Open Display Case	1 unit	Existing	1,438.00	10	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Miscellaneous	Refrigeration	Icemaker	1 unit	Existing	443.88	9	\$1,056.09	45%	at stock turnover	\$0.37	54.09	54.54	ENERGY STAR
Miscellaneous	Refrigeration	Vending Machine	1 unit	Existing	80.27	10	\$42.81	45%	at stock turnover	\$0.07	-4.67	0.22	EIA 2011-2012 Ref. Case
Miscellaneous	Food Preparation	Oven	1 unit	Existing	15,104.75	10	\$1,067.99	66%	at stock turnover	-\$0.01	120.83	120.83	RTF Workbook
Miscellaneous	Food Preparation	Fryer	1 unit	Existing	3,084.66	10	\$782.02	76%	at stock turnover	\$0.03	27.43	27.43	RTF Workbook
Miscellaneous	Food Preparation	Dishwasher	1 unit	Existing	1,348.33	15	\$564.57	43%	at stock turnover	-\$0.13	20.76	20.76	ENERGY STAR
Miscellaneous	Food Preparation	Hot Food Container	1 unit	Existing	659.29	20	\$490.95	43%	at stock turnover	\$0.07	18.87	18.87	RTF Workbook
Miscellaneous	Food Preparation	Steamer	1 unit	Existing	66,188.82	9	\$837.45	43%	at stock turnover	-\$0.02	201.22	201.22	RTF Workbook
Miscellaneous	Office Equipment	Desktop Computer	1 unit	Existing	133.90	5	\$0.01	100%	at stock turnover	\$0.00	349.58	349.58	7th Power Plan
Miscellaneous	Office Equipment	Laptop	1 unit	Existing	36.86	4	\$0.01	100%	at stock turnover	\$0.00	52.97	52.97	7th Power Plan
Miscellaneous	Office Equipment	Monitor	1 unit	Existing	27.21	5	\$0.01	100%	at stock turnover	\$0.00	60.39	60.39	7th Power Plan
Miscellaneous	Office Equipment	Server	1 unit	Existing	74.10	4	\$0.01	100%	at stock turnover	\$0.00	185.01	185.01	AEG Research
Miscellaneous	Office Equipment	Printer/Copier/Fax	1 unit	Existing	161.54	6	\$0.01	100%	at stock turnover	\$0.00	71.06	71.06	ENERGY STAR
Miscellaneous	Office Equipment	POS Terminal	1 unit	Existing	123.52	5	\$0.01	40%	at stock turnover	\$0.00	28.54	28.54	7th Power Plan
Miscellaneous	Miscellaneous	Non-HVAC Motors	1 unit	Existing	0.00	15	\$0.00	90%	at stock turnover	\$0.00	0.00	0.00	N/A
Miscellaneous	Miscellaneous	Pool Pump	1 unit	Existing	1,432.30	10	\$246.30	0%	at stock turnover	\$0.02	1.67	1.67	Southern California Edison
Miscellaneous	Miscellaneous	Pool Heater	1 unit	Existing	16,028.89	15	\$3,546.07	0%	at stock turnover	\$0.02	0.74	0.74	AEG Research
Miscellaneous	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Miscellaneous	Cooling	Air-Cooled Chiller	1 kBTU/hr	New	7.21	20	\$26.36	14%	at stock turnover	\$0.35	254.22	254.22	Annual Energy Outlook, 2015

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Miscellaneous	Cooling	Water-Cooled Chiller	1 kBTU/hr	New	11.49	25	\$12.65	9%	at stock turnover	\$0.10	184.09	184.09	Annual Energy Outlook, 2015
Miscellaneous	Cooling	RTU	1 kBTU/hr	New	1.32	15	\$6.75	45%	at stock turnover	\$0.56	251.67	251.67	Annual Energy Outlook, 2015
Miscellaneous	Cooling	Room AC	1 kBTU/hr	New	4.65	15	\$23.62	2%	at stock turnover	\$0.55	79.01	79.01	Annual Energy Outlook, 2015
Miscellaneous	Cooling	Evaporative AC	11 per TR	New	0.00	15	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	New Buildings Institute Study, 2006
Miscellaneous	Cooling	Air-Source Heat Pump	1 kBTU/hr	New	2.24	15	\$21.65	14%	at stock turnover	\$0.58	31.48	31.48	Annual Energy Outlook, 2015
Miscellaneous	Heating	Air-Source Heat Pump	1 kBTU/hr	New	1.83	15	\$21.65	14%	at stock turnover	\$0.58	25.68	25.68	Annual Energy Outlook, 2015
Miscellaneous	Cooling	Geothermal Heat Pump	1 kBTU/hr	New	6.21	25	\$26.36	8%	at stock turnover	\$0.24	13.69	13.69	Annual Energy Outlook, 2015
Miscellaneous	Heating	Geothermal Heat Pump	1 kBTU/hr	New	4.01	25	\$26.36	8%	at stock turnover	\$0.24	8.85	8.85	Annual Energy Outlook, 2015
Miscellaneous	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	1%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Miscellaneous	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	24%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Miscellaneous	Ventilation	Ventilation	1000 CFM	New	3,804.42	20	\$1,219.71	100%	at stock turnover	\$0.03	880.16	880.16	AEG-BEST
Miscellaneous	Water Heating	Water Heater	65 gallons	New	2,149.15	13	\$3,537.01	45%	at stock turnover	\$0.19	2,676.98	2,676.98	7th Power Plan
Miscellaneous	Interior Lighting	Screw-in	lamps	New	74.83	8	\$3.95	100%	at stock turnover	\$0.00	406.82	472.80	7th Power Plan
Miscellaneous	Interior Lighting	Linear Lighting	lamps	New	86.92	17	\$52.83	100%	at stock turnover	\$0.05	2,012.24	2,026.68	7th Power Plan
Miscellaneous	Interior Lighting	High-Bay Fixtures	lamps	New	638.74	15	\$123.86	100%	at stock turnover	\$0.02	2,535.60	2,470.11	Annual Energy Outlook, 2015
Miscellaneous	Exterior Lighting	Screw-in	lamps	New	84.73	8	\$3.95	100%	at stock turnover	\$0.00	25.02	35.76	7th Power Plan
Miscellaneous	Exterior Lighting	Linear Lighting	lamps	New	138.50	17	\$52.83	100%	at stock turnover	\$0.03	136.14	130.55	7th Power Plan
Miscellaneous	Exterior Lighting	Area Lighting	lamps	New	1,128.26	15	\$44.55	100%	at stock turnover	-\$0.02	1,215.73	1,159.31	Annual Energy Outlook, 2015
Miscellaneous	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	New	1,507.00	11	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case

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Miscellaneous	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	New	605.00	15	\$0.00	14%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Miscellaneous	Refrigeration	Glass Door Display	1 unit	New	767.00	15	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Miscellaneous	Refrigeration	Open Display Case	1 unit	New	1,438.00	10	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Miscellaneous	Refrigeration	Icemaker	1 unit	New	443.88	9	\$1,056.09	45%	at stock turnover	\$0.37	33.19	33.31	ENERGY STAR
Miscellaneous	Refrigeration	Vending Machine	1 unit	New	81.00	10	\$42.81	45%	at stock turnover	\$0.07	13.01	13.01	EIA 2011-2012 Ref. Case
Miscellaneous	Food Preparation	Oven	1 unit	New	15,104.75	10	\$1,067.99	66%	at stock turnover	-\$0.01	165.23	165.23	RTF Workbook
Miscellaneous	Food Preparation	Fryer	1 unit	New	2,881.11	10	\$782.02	76%	at stock turnover	\$0.04	28.58	28.58	RTF Workbook
Miscellaneous	Food Preparation	Dishwasher	1 unit	New	1,348.33	15	\$564.57	43%	at stock turnover	-\$0.13	7.93	7.93	ENERGY STAR
Miscellaneous	Food Preparation	Hot Food Container	1 unit	New	802.23	20	\$490.95	43%	at stock turnover	\$0.06	14.18	14.18	RTF Workbook
Miscellaneous	Food Preparation	Steamer	1 unit	New	66,188.82	9	\$837.45	43%	at stock turnover	-\$0.02	139.79	139.79	RTF Workbook
Miscellaneous	Office Equipment	Desktop Computer	1 unit	New	123.52	5	\$0.01	100%	at stock turnover	\$0.00	188.80	188.80	7th Power Plan
Miscellaneous	Office Equipment	Laptop	1 unit	New	36.86	4	\$0.01	100%	at stock turnover	\$0.00	25.31	25.31	7th Power Plan
Miscellaneous	Office Equipment	Monitor	1 unit	New	30.65	5	\$0.01	100%	at stock turnover	\$0.00	11.82	11.82	7th Power Plan
Miscellaneous	Office Equipment	Server	1 unit	New	74.10	4	\$0.01	100%	at stock turnover	\$0.00	84.90	84.90	AEG Research
Miscellaneous	Office Equipment	Printer/Copier/Fax	1 unit	New	223.00	6	\$0.01	100%	at stock turnover	\$0.00	5.46	5.46	ENERGY STAR
Miscellaneous	Office Equipment	POS Terminal	1 unit	New	123.52	5	\$0.01	40%	at stock turnover	\$0.00	14.27	14.27	7th Power Plan
Miscellaneous	Miscellaneous	Non-HVAC Motors	1 unit	New	0.00	15	\$0.00	90%	at stock turnover	\$0.00	0.00	0.00	N/A
Miscellaneous	Miscellaneous	Pool Pump	1 unit	New	1,432.30	10	\$246.30	0%	at stock turnover	\$0.02	1.18	1.18	Southern California Edison
Miscellaneous	Miscellaneous	Pool Heater	1 unit	New	15,277.63	15	\$3,546.07	0%	at stock turnover	\$0.03	0.53	0.53	AEG Research

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Miscellaneous	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Large Office	Cooling	Insulation - Ceiling	sqft roof	Existing	0.07	45	\$1.28	15%	35%	\$0.06	10.87	11.54	Building Energy Simulation Tool
Large Office	Heating	Insulation - Ceiling	sqft roof	Existing	1.01	45	\$1.28	15%	35%	\$0.06	88.29	90.21	Building Energy Simulation Tool
Large Office	Ventilation	Insulation - Ceiling	sqft roof	Existing	0.54	45	\$1.28	15%	35%	\$0.06	92.61	105.15	Building Energy Simulation Tool
Large Office	Cooling	Insulation - Ducting	sqft duct	Existing	0.11	20	\$0.84	15%	35%	\$0.00	25.56	28.40	Building Energy Simulation Tool
Large Office	Heating	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.84	15%	35%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Large Office	Ventilation	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.84	15%	35%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Large Office	Cooling	Building Shell - Cool Roofs	sqft roof	Existing	0.34	20	\$0.78	45%	50%	\$10.00	13.12	15.32	Building Energy Simulation Tool
Large Office	Heating	Building Shell - Cool Roofs	sqft roof	Existing	-0.45	20	\$0.78	45%	50%	\$10.00	-9.30	-10.19	Building Energy Simulation Tool
Large Office	Ventilation	Building Shell - Cool Roofs	sqft roof	Existing	-0.25	20	\$0.78	45%	50%	\$10.00	-10.53	-12.53	Building Energy Simulation Tool
Large Office	Cooling	Insulation - Wall Cavity	sqft wall	Existing	-0.21	45	\$0.78	15%	35%	\$0.03	-30.26	-31.98	Building Energy Simulation Tool
Large Office	Heating	Insulation - Wall Cavity	sqft wall	Existing	1.60	45	\$0.78	15%	35%	\$0.03	120.17	121.43	Building Energy Simulation Tool
Large Office	Ventilation	Insulation - Wall Cavity	sqft wall	Existing	0.85	45	\$0.78	15%	35%	\$0.03	127.36	142.14	Building Energy Simulation Tool
Large Office	Cooling	HVAC - Duct Repair and Sealing	tonCool	Existing	4.06	18	\$0.57	15%	50%	\$10.00	9.42	11.00	Building Energy Simulation Tool
Large Office	Heating	HVAC - Duct Repair and Sealing	tonCool	Existing	-7.99	18	\$0.57	15%	50%	\$10.00	-9.99	-10.96	Building Energy Simulation Tool
Large Office	Ventilation	HVAC - Duct Repair and Sealing	tonCool	Existing	-4.53	18	\$0.57	15%	50%	\$10.00	-11.31	-13.47	Building Energy Simulation Tool
Large Office	Cooling	Windows - High Efficiency Glazing	sqft window	Existing	5.01	30	\$35.93	48%	48%	\$0.10	0.00	0.00	7th Power Plan
Large Office	Heating	Windows - High Efficiency Glazing	sqft window	Existing	17.98	30	\$35.93	48%	48%	\$0.10	0.00	0.00	7th Power Plan
Large Office	Ventilation	Windows - High Efficiency Glazing	sqft window	Existing	5.57	30	\$35.93	48%	48%	\$0.10	0.00	0.00	7th Power Plan

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Large Office	Cooling	Chiller - Chilled Water Reset	ChillCtrl	Existing	2,850.09	10	\$884.85	15%	75%	\$0.04	17.32	18.98	AEG-BEST
Large Office	Cooling	Chiller - Chilled Water Variable-Flow System	HP cool	Existing	344.35	15	\$332.55	15%	75%	\$0.10	290.05	320.04	AEG-BEST
Large Office	Cooling	Chiller - Variable Speed Fans	HP fan	Existing	742.91	15	\$208.36	15%	75%	\$0.03	62.94	68.55	New Jersey TRM
Large Office	Cooling	Water-Cooled Chiller - Condenser Water Reset	ChillCtrl	Existing	26,115.71	10	\$884.85	15%	75%	\$0.00	60.30	66.13	AEG-BEST
Large Office	Cooling	HVAC - Economizer	HP cool	Existing	93.32	10	\$168.42	18%	75%	\$0.22	295.51	335.74	AEG-BEST
Large Office	Heating	Space Heating - Heat Recovery Ventilator	CFM	Existing	3.67	14	\$5.08	3%	75%	\$0.15	336.13	356.92	7th Power Plan
Large Office	Ventilation	Ventilation - ECM on VAV Boxes	sqft	Existing	0.49	18	\$0.25	15%	20%	\$0.05	63.23	71.38	7th Power Plan
Large Office	Ventilation	Ventilation - Variable Speed Control	sqft	Existing	0.05	15	\$181.39	13%	50%	\$314.97	54.23	69.40	AEG-BEST
Large Office	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.03	15	\$0.25	15%	75%	\$0.89	45.22	55.81	7th Power Plan
Large Office	Cooling	Destratification Fans (HVLS)	Strat Fan	Existing	2,814.56	15	\$7,270.90	15%	30%	\$0.06	96.97	109.27	AEG Research
Large Office	Heating	Destratification Fans (HVLS)	Strat Fan	Existing	9,451.87	15	\$7,270.90	15%	30%	\$0.06	173.12	180.60	AEG Research
Large Office	Cooling	RTU - Maintenance	tonCool	Existing	43.10	3	\$35.00	15%	45%	\$0.23	46.97	58.08	AEG Research
Large Office	Cooling	RTU - Advanced Controls	sqft	Existing	0.11	15	\$0.07	15%	45%	\$0.06	38.56	40.93	7th Power Plan
Large Office	Cooling	RTU - Evaporative Precooler	tonCool	Existing	88.30	15	\$681.62	15%	75%	\$0.71	173.44	187.56	AEG Research
Large Office	Cooling	Ductless Mini Split Heat Pump	tonCool	Existing	212.14	15	\$3,359.26	15%	25%	\$0.56	3.83	4.67	7th Power Plan
Large Office	Heating	Ductless Mini Split Heat Pump	tonCool	Existing	351.53	15	\$3,359.26	15%	25%	\$0.56	69.02	75.36	7th Power Plan
Large Office	Cooling	Thermostat - WiFi/Interactive	sqft	Existing	0.40	5	\$0.66	30%	40%	\$0.09	94.50	107.34	7th Power Plan
Large Office	Heating	Thermostat - WiFi/Interactive	sqft	Existing	0.69	5	\$0.66	30%	40%	\$0.09	87.72	93.50	7th Power Plan
Large Office	Ventilation	Thermostat - WiFi/Interactive	sqft	Existing	0.39	5	\$0.66	30%	40%	\$0.09	98.03	114.02	7th Power Plan
Large Office	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	Existing	81.85	10	\$8.35	25%	65%	\$0.01	9.04	16.94	Illinois TRM
Large Office	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	Existing	84.74	10	\$11.64	25%	65%	-\$0.11	4.66	8.82	7th Power Plan

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Large Office	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	Existing	57.63	15	\$36.75	15%	25%	\$0.04	1.70	2.66	Hawaii TRM
Large Office	Water Heating	Water Heater - Pipe Insulation	PipeFeet	Existing	336.07	15	\$14.88	16%	75%	\$0.00	23.31	40.02	AEG-BEST
Large Office	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	Existing	55.90	4	\$144.04	25%	65%	-\$0.36	6.00	11.26	7th Power Plan
Large Office	Water Heating	Water Heater - Thermostat Setback	WHunits	Existing	57.65	2	\$5.00	15%	75%	\$0.02	11.11	20.61	Illinois TRM
Large Office	Water Heating	Water Heater - Solar System	PipeFeet	Existing	1,156.70	20	\$215.28	1%	30%	\$0.01	38.85	68.21	AEG-BEST
Large Office	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.29	15	\$0.35	3%	23%	\$0.10	186.05	233.17	7th Power Plan
Large Office	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.41	15	\$0.58	3%	23%	\$0.12	250.81	321.18	7th Power Plan
Large Office	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	Existing	142.27	15	\$54.41	1%	3%	\$0.03	5.32	7.97	7th Power Plan
Large Office	Interior Lighting	Interior Lighting - Timeclocks and Timers	occ sens	Existing	0.00	8	\$111.67	7%	15%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Large Office	Interior Lighting	Interior Lighting - Skylights	1000 sqft	Existing	0.00	15	\$1,006.35	15%	25%	\$0.00	0.00	0.00	AEG Research
Large Office	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	1000 sqft	Existing	208.37	16	\$1,807.69	5%	15%	\$0.68	51.63	79.13	7th Power Plan
Large Office	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	Existing	2,183.46	11	\$30.80	15%	50%	\$0.00	201.25	279.15	Illinois TRM
Large Office	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	ELtg Watts	Existing	1.12	8	\$0.63	15%	25%	\$0.07	116.56	181.49	7th Power Plan
Large Office	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	Existing	69.50	8	\$55.10	15%	25%	\$0.09	58.94	94.54	Pacific Gas and Electric Research
Large Office	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	Existing	83.41	7	\$3,400.00	15%	30%	\$4.94	104.32	173.23	AEG Research
Large Office	Refrigeration	Refrigeration - Anti-Sweat Heater	Fridge Feet	Existing	12.84	8	\$48.18	0%	0%	\$0.58	0.00	0.00	7th Power Plan
Large Office	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	Existing	17.31	4	\$10.44	0%	0%	\$0.16	0.00	0.00	Michigan Energy Measures Database
Large Office	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	Existing	160.90	16	\$165.20	0%	0%	\$0.11	0.00	0.00	7th Power Plan
Large Office	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	Existing	21.84	15	\$335.85	0%	0%	\$1.63	0.00	0.00	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Large Office	Refrigeration	Refrigeration - Strip Curtain	Walkin Door	Existing	17.77	2	\$10.41	0%	0%	\$0.28	0.00	0.00	7th Power Plan
Large Office	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	Existing	0.34	15	\$45.43	0%	0%	\$13.76	0.00	0.00	Annual Energy Outlook, 2015
Large Office	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	Existing	7.24	15	\$313.82	0%	0%	\$4.58	0.00	0.00	Annual Energy Outlook, 2015
Large Office	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	Existing	108.07	10	\$506.05	0%	0%	\$0.62	0.00	0.00	Vermont TRM
Large Office	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	Existing	7.69	6	\$45.41	0%	0%	\$1.12	0.00	0.00	7th Power Plan
Large Office	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	Existing	0.62	8	\$3.72	0%	0%	\$0.93	0.00	0.00	7th Power Plan
Large Office	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	Existing	143.68	5	\$45.85	0%	0%	\$0.07	0.00	0.00	Illinois TRM
Large Office	Refrigeration	Grocery - ECMS for Display Cases	Fridge Case	Existing	31.88	16	\$165.20	0%	0%	\$0.53	0.00	0.00	7th Power Plan
Large Office	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	Existing	1,258.90	5	\$187.94	25%	75%	\$0.03	14.35	14.94	Illinois TRM
Large Office	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	Existing	5,140.40	18	\$8,526.67	25%	50%	\$0.15	132.96	152.26	7th Power Plan
Large Office	Office Equipment	Office Equipment - Smart Power Strips	Smart Strip	Existing	111.07	4	\$41.63	10%	50%	\$0.09	285.69	277.79	7th Power Plan
Large Office	Cooling	Lodging - Guest Room Controls	LodgUnit	Existing	167.50	15	\$260.00	0%	0%	\$2.42	0.00	0.00	AEG-BEST
Large Office	Heating	Lodging - Guest Room Controls	LodgUnit	Existing	-163.64	15	\$260.00	0%	0%	\$2.42	0.00	0.00	AEG-BEST
Large Office	Office Equipment	Data Center - Best Practice Measures	sqft	Existing	0.04	5	\$0.00	0%	0%	\$0.02	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Office	Cooling	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.01	0%	0%	\$0.04	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Office	Ventilation	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.01	0%	0%	\$0.04	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Office	Interior Lighting	Data Center - Commercially Available Measures	sqft	Existing	0.02	8	\$0.01	0%	0%	\$0.04	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Office	Office Equipment	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.01	0%	0%	\$0.04	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Office	Cooling	Data Center - Cutting Edge Measures	sqft	Existing	0.03	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx

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Large Office	Office Equipment	Data Center - Cutting Edge Measures	sqft	Existing	0.00	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Office	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	Existing	6,929.39	18	\$4,092.80	0%	0%	\$0.05	0.00	0.00	7th Power Plan
Large Office	Miscellaneous	Pool Pump - Timer	perBldg	Existing	0.00	10	\$85.22	15%	75%	\$0.00	0.00	0.00	Ontario Power TRM
Large Office	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	Existing	6,913.12	6	\$35.93	1%	3%	\$0.00	0.00	28.21	7th Power Plan
Large Office	Cooling	Advanced New Construction Designs	sqft	Existing	0.71	25	\$4.11	0%	0%	\$0.09	0.00	0.00	AEG Research
Large Office	Heating	Advanced New Construction Designs	sqft	Existing	1.16	25	\$4.11	0%	0%	\$0.09	0.00	0.00	AEG Research
Large Office	Ventilation	Advanced New Construction Designs	sqft	Existing	0.65	25	\$4.11	0%	0%	\$0.09	0.00	0.00	AEG Research
Large Office	Water Heating	Advanced New Construction Designs	sqft	Existing	0.15	25	\$4.11	0%	0%	\$0.09	0.00	0.00	AEG Research
Large Office	Interior Lighting	Advanced New Construction Designs	sqft	Existing	0.58	25	\$4.11	0%	0%	\$0.09	0.00	0.00	AEG Research
Large Office	Exterior Lighting	Advanced New Construction Designs	sqft	Existing	0.28	25	\$4.11	0%	0%	\$0.09	0.00	0.00	AEG Research
Large Office	Cooling	Strategic Energy Management	sqft	Existing	0.10	3	\$0.21	3%	14%	\$0.09	28.74	35.32	AEG Research
Large Office	Heating	Strategic Energy Management	sqft	Existing	0.18	3	\$0.21	3%	14%	\$0.09	26.56	29.91	AEG Research
Large Office	Ventilation	Strategic Energy Management	sqft	Existing	0.10	3	\$0.21	3%	14%	\$0.09	30.09	37.80	AEG Research
Large Office	Water Heating	Strategic Energy Management	sqft	Existing	0.02	3	\$0.21	3%	14%	\$0.09	2.82	5.33	AEG Research
Large Office	Interior Lighting	Strategic Energy Management	sqft	Existing	0.09	3	\$0.21	3%	14%	\$0.09	23.91	38.14	AEG Research
Large Office	Exterior Lighting	Strategic Energy Management	sqft	Existing	0.04	3	\$0.21	3%	14%	\$0.09	11.72	19.10	AEG Research
Large Office	Refrigeration	Strategic Energy Management	sqft	Existing	0.01	3	\$0.21	3%	14%	\$0.09	2.91	2.99	AEG Research
Large Office	Office Equipment	Strategic Energy Management	sqft	Existing	0.13	3	\$0.21	3%	14%	\$0.09	46.85	46.39	AEG Research
Large Office	Cooling	Commissioning	sqft	Existing	0.14	3	\$0.44	0%	0%	\$0.18	0.00	0.00	AEG Research
Large Office	Heating	Commissioning	sqft	Existing	0.24	3	\$0.44	0%	0%	\$0.18	0.00	0.00	AEG Research
Large Office	Ventilation	Commissioning	sqft	Existing	0.13	3	\$0.44	0%	0%	\$0.18	0.00	0.00	AEG Research

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Large Office	Water Heating	Commissioning	sqft	Existing	0.01	3	\$0.44	0%	0%	\$0.18	0.00	0.00	AEG Research
Large Office	Interior Lighting	Commissioning	sqft	Existing	0.10	3	\$0.44	0%	0%	\$0.18	0.00	0.00	AEG Research
Large Office	Exterior Lighting	Commissioning	sqft	Existing	0.05	3	\$0.44	0%	0%	\$0.18	0.00	0.00	AEG Research
Large Office	Refrigeration	Commissioning	sqft	Existing	0.02	3	\$0.44	0%	0%	\$0.18	0.00	0.00	AEG Research
Large Office	Cooling	Retrocommissioning	sqft	Existing	0.14	3	\$0.28	14%	61%	\$0.11	169.12	208.48	AEG Research
Large Office	Heating	Retrocommissioning	sqft	Existing	0.24	3	\$0.28	14%	61%	\$0.11	156.29	176.56	AEG Research
Large Office	Ventilation	Retrocommissioning	sqft	Existing	0.14	3	\$0.28	14%	61%	\$0.11	177.06	223.13	AEG Research
Large Office	Water Heating	Retrocommissioning	sqft	Existing	0.01	3	\$0.28	14%	61%	\$0.11	5.52	10.48	AEG Research
Large Office	Interior Lighting	Retrocommissioning	sqft	Existing	0.10	3	\$0.28	14%	61%	\$0.11	117.24	187.62	AEG Research
Large Office	Exterior Lighting	Retrocommissioning	sqft	Existing	0.05	3	\$0.28	14%	61%	\$0.11	57.48	93.95	AEG Research
Large Office	Refrigeration	Retrocommissioning	sqft	Existing	0.02	3	\$0.28	14%	61%	\$0.11	28.56	29.41	AEG Research
Large Office	Interior Lighting	Fruit Storage - Lighting Controls	sqft	Existing	0.07	10	\$0.09	0%	0%	\$0.12	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Office	Refrigeration	Fruit Storage Refrigeration Retrofit	sqft	Existing	0.06	10	\$1.09	0%	0%	\$2.31	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Office	Refrigeration	Fruit Storage Refrigeration Tuneup	sqft	Existing	0.02	3	\$0.23	0%	0%	\$4.73	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Office	Refrigeration	Fruit Storage Retrofit - CO2 Scrub	sqft	Existing	0.03	10	\$3.13	0%	0%	\$13.69	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Office	Refrigeration	Fruit Storage Retrofit - Membrane	sqft	Existing	0.01	10	\$0.68	0%	0%	\$14.85	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Office	Cooling	Insulation - Ceiling	sqft roof	New	0.00	45	\$1.28	15%	50%	\$0.18	0.00	0.00	Building Energy Simulation Tool
Large Office	Heating	Insulation - Ceiling	sqft roof	New	0.36	45	\$1.28	15%	50%	\$0.18	15.20	15.27	Building Energy Simulation Tool
Large Office	Ventilation	Insulation - Ceiling	sqft roof	New	0.17	45	\$1.28	15%	50%	\$0.18	15.63	16.11	Building Energy Simulation Tool
Large Office	Cooling	Insulation - Ducting	sqft duct	New	0.17	20	\$0.84	15%	50%	\$0.00	21.79	22.11	Building Energy Simulation Tool
Large Office	Heating	Insulation - Ducting	sqft duct	New	0.00	20	\$0.84	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool

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Large Office	Ventilation	Insulation - Ducting	sqft duct	New	0.00	20	\$0.84	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Large Office	Cooling	Building Shell - Cool Roofs	sqft roof	New	0.06	20	\$0.78	45%	50%	\$10.00	0.68	0.70	Building Energy Simulation Tool
Large Office	Heating	Building Shell - Cool Roofs	sqft roof	New	-0.17	20	\$0.78	45%	50%	\$10.00	-1.04	-1.05	Building Energy Simulation Tool
Large Office	Ventilation	Building Shell - Cool Roofs	sqft roof	New	-0.08	20	\$0.78	45%	50%	\$10.00	-1.09	-1.13	Building Energy Simulation Tool
Large Office	Cooling	Insulation - Wall Cavity	sqft wall	New	0.00	45	\$0.78	15%	50%	\$0.12	-0.26	-0.27	Building Energy Simulation Tool
Large Office	Heating	Insulation - Wall Cavity	sqft wall	New	0.35	45	\$0.78	15%	50%	\$0.12	12.43	12.47	Building Energy Simulation Tool
Large Office	Ventilation	Insulation - Wall Cavity	sqft wall	New	0.16	45	\$0.78	15%	50%	\$0.12	12.84	13.19	Building Energy Simulation Tool
Large Office	Cooling	HVAC - Duct Repair and Sealing	tonCool	New	12.57	18	\$0.57	15%	35%	\$0.00	4.95	5.05	Building Energy Simulation Tool
Large Office	Heating	HVAC - Duct Repair and Sealing	tonCool	New	10.96	18	\$0.57	15%	35%	\$0.00	2.17	2.19	Building Energy Simulation Tool
Large Office	Ventilation	HVAC - Duct Repair and Sealing	tonCool	New	5.03	18	\$0.57	15%	35%	\$0.00	2.25	2.31	Building Energy Simulation Tool
Large Office	Cooling	Windows - High Efficiency Glazing	sqft window	New	4.19	30	\$35.93	66%	66%	\$0.11	0.00	0.00	7th Power Plan
Large Office	Heating	Windows - High Efficiency Glazing	sqft window	New	17.23	30	\$35.93	66%	66%	\$0.11	0.00	0.00	7th Power Plan
Large Office	Ventilation	Windows - High Efficiency Glazing	sqft window	New	4.56	30	\$35.93	66%	66%	\$0.11	0.00	0.00	7th Power Plan
Large Office	Cooling	Chiller - Chilled Water Reset	ChillCtrl	New	2,489.68	10	\$884.85	15%	75%	\$0.04	1.76	1.83	AEG-BEST
Large Office	Cooling	Chiller - Chilled Water Variable-Flow System	HP cool	New	301.60	15	\$332.55	15%	75%	\$0.10	37.93	39.39	AEG-BEST
Large Office	Cooling	Chiller - Variable Speed Fans	HP fan	New	645.60	15	\$208.36	15%	75%	\$0.03	8.11	8.42	New Jersey TRM
Large Office	Cooling	Water-Cooled Chiller - Condenser Water Reset	ChillCtrl	New	22,142.41	10	\$884.85	15%	75%	\$0.00	5.95	6.21	AEG-BEST
Large Office	Cooling	HVAC - Economizer	HP cool	New	76.85	10	\$168.42	18%	75%	\$0.24	28.19	30.31	AEG-BEST
Large Office	Heating	Space Heating - Heat Recovery Ventilator	CFM	New	3.52	14	\$5.08	6%	75%	\$0.16	42.78	43.27	7th Power Plan

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Large Office	Ventilation	Ventilation - ECM on VAV Boxes	sqft	New	0.39	18	\$0.25	15%	20%	\$0.05	15.30	15.76	7th Power Plan
Large Office	Ventilation	Ventilation - Variable Speed Control	sqft	New	0.04	15	\$181.39	19%	50%	\$358.07	6.13	6.65	AEG-BEST
Large Office	Ventilation	Ventilation - Demand Controlled	sqft	New	0.02	15	\$0.25	15%	75%	\$1.01	5.81	6.32	7th Power Plan
Large Office	Cooling	Destratification Fans (HVLS)	Strat Fan	New	2,332.31	15	\$7,270.90	15%	30%	\$0.07	12.12	12.56	AEG Research
Large Office	Heating	Destratification Fans (HVLS)	Strat Fan	New	8,925.91	15	\$7,270.90	15%	30%	\$0.07	23.20	23.49	AEG Research
Large Office	Cooling	RTU - Maintenance	tonCool	New	35.63	3	\$35.00	15%	45%	\$0.27	1.01	1.15	AEG Research
Large Office	Cooling	RTU - Advanced Controls	sqft	New	0.08	15	\$0.07	15%	45%	\$0.07	8.14	8.33	7th Power Plan
Large Office	Cooling	RTU - Evaporative Precooler	tonCool	New	72.16	15	\$681.62	15%	75%	\$0.83	47.42	48.44	AEG Research
Large Office	Cooling	Ductless Mini Split Heat Pump	tonCool	New	172.27	15	\$3,359.26	15%	25%	\$0.63	0.65	0.68	7th Power Plan
Large Office	Heating	Ductless Mini Split Heat Pump	tonCool	New	340.57	15	\$3,359.26	15%	25%	\$0.63	12.75	13.07	7th Power Plan
Large Office	Cooling	Thermostat - WiFi/Interactive	sqft	New	0.34	5	\$0.66	30%	40%	\$0.10	2.95	3.26	7th Power Plan
Large Office	Heating	Thermostat - WiFi/Interactive	sqft	New	0.67	5	\$0.66	30%	40%	\$0.10	2.96	3.09	7th Power Plan
Large Office	Ventilation	Thermostat - WiFi/Interactive	sqft	New	0.31	5	\$0.66	30%	40%	\$0.10	3.08	3.42	7th Power Plan
Large Office	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	New	19.27	10	\$8.35	25%	65%	\$0.02	0.86	1.24	Illinois TRM
Large Office	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	New	20.09	10	\$11.64	25%	65%	-\$0.33	0.45	0.65	7th Power Plan
Large Office	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	New	41.28	15	\$36.75	15%	25%	\$0.04	0.43	0.51	Hawaii TRM
Large Office	Water Heating	Water Heater - Pipe Insulation	PipeFeet	New	228.79	15	\$14.88	1%	75%	\$0.00	4.11	5.57	AEG-BEST
Large Office	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	New	13.23	4	\$144.04	25%	65%	-\$1.06	0.27	0.43	7th Power Plan
Large Office	Water Heating	Water Heater - Thermostat Setback	WHunits	New	41.23	2	\$5.00	15%	75%	\$0.02	0.14	0.24	Illinois TRM
Large Office	Water Heating	Water Heater - Solar System	PipeFeet	New	796.74	20	\$215.28	1%	30%	\$0.01	5.80	7.80	AEG-BEST
Large Office	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.25	15	\$0.35	11%	23%	\$0.10	53.27	59.47	7th Power Plan

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Large Office	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.35	15	\$0.58	11%	23%	\$0.12	73.24	82.05	7th Power Plan
Large Office	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	New	122.52	15	\$54.41	1%	3%	\$0.03	0.62	0.74	7th Power Plan
Large Office	Interior Lighting	Interior Lighting - Timeclocks and Timers	occ sens	New	0.00	8	\$111.67	7%	15%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Large Office	Interior Lighting	Interior Lighting - Skylights	1000 sqft	New	0.00	15	\$1,006.35	18%	25%	\$0.00	0.00	0.00	AEG Research
Large Office	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	1000 sqft	New	177.32	16	\$1,807.69	5%	15%	\$0.69	7.78	9.33	7th Power Plan
Large Office	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	New	1,858.55	11	\$30.80	15%	50%	\$0.00	23.44	27.79	Illinois TRM
Large Office	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	ELtg Watts	New	0.80	8	\$0.63	15%	25%	\$0.07	9.54	12.83	7th Power Plan
Large Office	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	New	50.54	8	\$55.10	15%	25%	\$0.10	5.03	6.74	Pacific Gas and Electric Research
Large Office	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	New	61.42	7	\$3,400.00	15%	30%	\$5.21	7.96	11.05	AEG Research
Large Office	Refrigeration	Refrigeration - Anti-Sweat Heater	Fridge Feet	New	9.10	8	\$48.18	0%	0%	\$0.83	0.00	0.00	7th Power Plan
Large Office	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	New	13.44	4	\$10.44	0%	0%	\$0.20	0.00	0.00	Michigan Energy Measures Database
Large Office	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	New	140.46	16	\$165.20	0%	0%	\$0.12	0.00	0.00	7th Power Plan
Large Office	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	New	20.22	15	\$335.85	0%	0%	\$1.78	0.00	0.00	7th Power Plan
Large Office	Refrigeration	Refrigeration - Strip Curtain	Walkin Door	New	16.39	2	\$10.41	0%	0%	\$0.30	0.00	0.00	7th Power Plan
Large Office	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBtuh	New	0.32	15	\$45.43	0%	0%	\$15.00	0.00	0.00	Annual Energy Outlook, 2015
Large Office	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	New	6.73	15	\$313.82	0%	0%	\$5.00	0.00	0.00	Annual Energy Outlook, 2015
Large Office	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	New	93.80	10	\$506.05	0%	0%	\$0.72	0.00	0.00	Vermont TRM
Large Office	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	New	6.99	6	\$45.41	0%	0%	\$1.24	0.00	0.00	7th Power Plan
Large Office	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	New	0.56	8	\$3.72	0%	0%	\$1.03	0.00	0.00	7th Power Plan

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Large Office	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	New	134.62	5	\$45.85	0%	0%	\$0.07	0.00	0.00	Illinois TRM
Large Office	Refrigeration	Grocery - ECMs for Display Cases	Fridge Case	New	28.96	16	\$165.20	0%	0%	\$0.59	0.00	0.00	7th Power Plan
Large Office	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	New	1,245.97	5	\$187.94	25%	75%	\$0.03	0.75	0.75	Illinois TRM
Large Office	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	New	4,173.06	18	\$8,526.67	25%	50%	\$0.17	32.71	33.79	7th Power Plan
Large Office	Office Equipment	Office Equipment - Smart Power Strips	Smart Strip	New	107.98	4	\$41.63	10%	50%	\$0.09	11.57	10.55	7th Power Plan
Large Office	Cooling	Lodging - Guest Room Controls	LodgUnit	New	118.61	15	\$260.00	0%	0%	\$10.00	0.00	0.00	AEG-BEST
Large Office	Heating	Lodging - Guest Room Controls	LodgUnit	New	-141.47	15	\$260.00	0%	0%	\$10.00	0.00	0.00	AEG-BEST
Large Office	Office Equipment	Data Center - Best Practice Measures	sqft	New	0.04	5	\$0.00	0%	0%	\$0.02	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Office	Cooling	Data Center - Commercially Available Measures	sqft	New	0.01	8	\$0.01	0%	0%	\$0.04	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Office	Ventilation	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.01	0%	0%	\$0.04	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Office	Interior Lighting	Data Center - Commercially Available Measures	sqft	New	0.02	8	\$0.01	0%	0%	\$0.04	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Office	Office Equipment	Data Center - Commercially Available Measures	sqft	New	0.01	8	\$0.01	0%	0%	\$0.04	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Office	Cooling	Data Center - Cutting Edge Measures	sqft	New	0.03	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Office	Office Equipment	Data Center - Cutting Edge Measures	sqft	New	0.00	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Office	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	New	5,595.10	18	\$4,092.80	0%	0%	\$0.06	0.00	0.00	7th Power Plan
Large Office	Miscellaneous	Pool Pump - Timer	perBldg	New	0.00	10	\$85.22	15%	75%	\$0.00	0.00	0.00	Ontario Power TRM
Large Office	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	New	2,304.37	6	\$35.93	1%	3%	\$0.00	0.00	1.60	7th Power Plan
Large Office	Cooling	Advanced New Construction Designs	sqft	New	0.59	25	\$4.11	10%	30%	\$0.10	96.58	98.06	AEG Research
Large Office	Heating	Advanced New Construction Designs	sqft	New	1.15	25	\$4.11	10%	30%	\$0.10	94.45	94.55	AEG Research

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Large Office	Ventilation	Advanced New Construction Designs	sqft	New	0.54	25	\$4.11	10%	30%	\$0.10	98.24	101.94	AEG Research
Large Office	Water Heating	Advanced New Construction Designs	sqft	New	0.11	25	\$4.11	10%	30%	\$0.10	10.87	12.50	AEG Research
Large Office	Interior Lighting	Advanced New Construction Designs	sqft	New	0.50	25	\$4.11	10%	30%	\$0.10	87.14	94.25	AEG Research
Large Office	Exterior Lighting	Advanced New Construction Designs	sqft	New	0.21	25	\$4.11	10%	30%	\$0.10	37.86	41.73	AEG Research
Large Office	Cooling	Strategic Energy Management	sqft	New	0.09	3	\$0.19	3%	14%	\$0.08	0.68	0.77	AEG Research
Large Office	Heating	Strategic Energy Management	sqft	New	0.17	3	\$0.19	3%	14%	\$0.08	0.68	0.72	AEG Research
Large Office	Ventilation	Strategic Energy Management	sqft	New	0.08	3	\$0.19	3%	14%	\$0.08	0.71	0.80	AEG Research
Large Office	Water Heating	Strategic Energy Management	sqft	New	0.02	3	\$0.19	3%	14%	\$0.08	0.08	0.13	AEG Research
Large Office	Interior Lighting	Strategic Energy Management	sqft	New	0.08	3	\$0.19	3%	14%	\$0.08	0.63	0.90	AEG Research
Large Office	Exterior Lighting	Strategic Energy Management	sqft	New	0.03	3	\$0.19	3%	14%	\$0.08	0.28	0.42	AEG Research
Large Office	Refrigeration	Strategic Energy Management	sqft	New	0.01	3	\$0.19	3%	14%	\$0.08	0.07	0.06	AEG Research
Large Office	Office Equipment	Strategic Energy Management	sqft	New	0.13	3	\$0.19	3%	14%	\$0.08	1.22	1.11	AEG Research
Large Office	Cooling	Commissioning	sqft	New	0.12	3	\$0.40	14%	61%	\$0.17	4.05	4.56	AEG Research
Large Office	Heating	Commissioning	sqft	New	0.24	3	\$0.40	14%	61%	\$0.17	4.05	4.28	AEG Research
Large Office	Ventilation	Commissioning	sqft	New	0.11	3	\$0.40	14%	61%	\$0.17	4.22	4.73	AEG Research
Large Office	Water Heating	Commissioning	sqft	New	0.01	3	\$0.40	14%	61%	\$0.17	0.16	0.26	AEG Research
Large Office	Interior Lighting	Commissioning	sqft	New	0.09	3	\$0.40	14%	61%	\$0.17	3.12	4.42	AEG Research
Large Office	Exterior Lighting	Commissioning	sqft	New	0.04	3	\$0.40	14%	61%	\$0.17	1.36	2.07	AEG Research
Large Office	Refrigeration	Commissioning	sqft	New	0.02	3	\$0.40	14%	61%	\$0.17	0.68	0.63	AEG Research
Large Office	Cooling	Retrocommissioning	sqft	New	0.12	3	\$0.25	0%	0%	\$0.11	0.00	0.00	AEG Research
Large Office	Heating	Retrocommissioning	sqft	New	0.24	3	\$0.25	0%	0%	\$0.11	0.00	0.00	AEG Research
Large Office	Ventilation	Retrocommissioning	sqft	New	0.11	3	\$0.25	0%	0%	\$0.11	0.00	0.00	AEG Research

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Large Office	Water Heating	Retrocommissioning	sqft	New	0.01	3	\$0.25	0%	0%	\$0.11	0.00	0.00	AEG Research
Large Office	Interior Lighting	Retrocommissioning	sqft	New	0.09	3	\$0.25	0%	0%	\$0.11	0.00	0.00	AEG Research
Large Office	Exterior Lighting	Retrocommissioning	sqft	New	0.04	3	\$0.25	0%	0%	\$0.11	0.00	0.00	AEG Research
Large Office	Refrigeration	Retrocommissioning	sqft	New	0.02	3	\$0.25	0%	0%	\$0.11	0.00	0.00	AEG Research
Large Office	Interior Lighting	Fruit Storage - Lighting Controls	sqft	New	0.06	10	\$0.09	0%	0%	\$0.12	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Office	Refrigeration	Fruit Storage Refrigeration Retrofit	sqft	New	0.06	10	\$1.09	0%	0%	\$2.58	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Office	Refrigeration	Fruit Storage Refrigeration Tuneup	sqft	New	0.01	3	\$0.23	0%	0%	\$5.29	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Office	Refrigeration	Fruit Storage Retrofit - CO2 Scrub	sqft	New	0.03	10	\$3.13	0%	0%	\$15.29	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Office	Refrigeration	Fruit Storage Retrofit - Membrane	sqft	New	0.01	10	\$0.68	0%	0%	\$16.59	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Office	Cooling	Insulation - Ceiling	sqft roof	Existing	0.10	45	\$1.28	15%	35%	\$0.17	171.55	178.06	Building Energy Simulation Tool
Small Office	Heating	Insulation - Ceiling	sqft roof	Existing	0.39	45	\$1.28	15%	35%	\$0.17	341.39	357.34	Building Energy Simulation Tool
Small Office	Ventilation	Insulation - Ceiling	sqft roof	Existing	0.07	45	\$1.28	15%	35%	\$0.17	121.74	149.27	Building Energy Simulation Tool
Small Office	Cooling	Insulation - Ducting	sqft duct	Existing	0.22	20	\$0.84	15%	35%	\$0.00	94.49	98.41	Building Energy Simulation Tool
Small Office	Heating	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.84	15%	35%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Small Office	Ventilation	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.84	15%	35%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Small Office	Cooling	Building Shell - Cool Roofs	sqft roof	Existing	0.28	20	\$0.78	45%	50%	\$10.00	116.22	131.06	Building Energy Simulation Tool
Small Office	Heating	Building Shell - Cool Roofs	sqft roof	Existing	-0.23	20	\$0.78	45%	50%	\$10.00	-48.89	-54.76	Building Energy Simulation Tool
Small Office	Ventilation	Building Shell - Cool Roofs	sqft roof	Existing	-0.04	20	\$0.78	45%	50%	\$10.00	-18.36	-23.62	Building Energy Simulation Tool
Small Office	Cooling	Insulation - Wall Cavity	sqft wall	Existing	-0.16	45	\$0.78	15%	35%	\$0.04	-106.10	-109.27	Building Energy Simulation Tool

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Small Office	Heating	Insulation - Wall Cavity	sqft wall	Existing	1.51	45	\$0.78	15%	35%	\$0.04	494.75	500.63	Building Energy Simulation Tool
Small Office	Ventilation	Insulation - Wall Cavity	sqft wall	Existing	0.24	45	\$0.78	15%	35%	\$0.04	167.42	201.71	Building Energy Simulation Tool
Small Office	Cooling	HVAC - Duct Repair and Sealing	tonCool	Existing	3.01	18	\$0.57	15%	50%	\$10.00	24.87	28.02	Building Energy Simulation Tool
Small Office	Heating	HVAC - Duct Repair and Sealing	tonCool	Existing	-8.84	18	\$0.57	15%	50%	\$10.00	-36.80	-41.26	Building Energy Simulation Tool
Small Office	Ventilation	HVAC - Duct Repair and Sealing	tonCool	Existing	-1.56	18	\$0.57	15%	50%	\$10.00	-13.94	-17.89	Building Energy Simulation Tool
Small Office	Cooling	Windows - High Efficiency Glazing	sqft window	Existing	4.83	30	\$35.93	48%	48%	\$0.13	0.00	0.00	7th Power Plan
Small Office	Heating	Windows - High Efficiency Glazing	sqft window	Existing	16.54	30	\$35.93	48%	48%	\$0.13	0.00	0.00	7th Power Plan
Small Office	Ventilation	Windows - High Efficiency Glazing	sqft window	Existing	1.60	30	\$35.93	48%	48%	\$0.13	0.00	0.00	7th Power Plan
Small Office	Cooling	Chiller - Chilled Water Reset	ChillCtrl	Existing	0.00	10	\$884.85	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Small Office	Cooling	Chiller - Chilled Water Variable-Flow System	HP cool	Existing	0.00	15	\$332.55	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Small Office	Cooling	Chiller - Variable Speed Fans	HP fan	Existing	0.00	15	\$208.36	15%	75%	\$0.00	0.00	0.00	New Jersey TRM
Small Office	Cooling	Water-Cooled Chiller - Condenser Water Reset	ChillCtrl	Existing	0.00	10	\$884.85	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Small Office	Cooling	HVAC - Economizer	HP cool	Existing	115.85	10	\$168.42	18%	75%	\$0.19	1,314.42	1,399.86	AEG-BEST
Small Office	Heating	Space Heating - Heat Recovery Ventilator	CFM	Existing	4.62	14	\$5.08	3%	75%	\$0.12	1,449.38	1,498.71	7th Power Plan
Small Office	Ventilation	Ventilation - ECM on VAV Boxes	sqft	Existing	0.18	18	\$0.25	15%	20%	\$0.11	83.11	101.31	7th Power Plan
Small Office	Ventilation	Ventilation - Variable Speed Control	sqft	Existing	0.06	15	\$181.39	13%	25%	\$279.63	62.58	88.10	AEG-BEST
Small Office	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.01	15	\$0.25	15%	25%	\$2.17	9.74	13.42	7th Power Plan
Small Office	Cooling	Destratification Fans (HVLS)	Strat Fan	Existing	3,468.56	15	\$7,270.90	15%	15%	\$0.05	0.00	0.00	AEG Research
Small Office	Heating	Destratification Fans (HVLS)	Strat Fan	Existing	11,614.80	15	\$7,270.90	15%	15%	\$0.05	0.00	0.00	AEG Research
Small Office	Cooling	RTU - Maintenance	tonCool	Existing	53.26	3	\$35.00	15%	45%	\$0.20	310.91	360.57	AEG Research
Small Office	Cooling	RTU - Advanced Controls	sqft	Existing	0.25	15	\$0.07	15%	45%	\$0.03	501.93	512.80	7th Power Plan

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Small Office	Cooling	RTU - Evaporative Precooler	tonCool	Existing	110.28	15	\$681.62	15%	75%	\$0.62	1,170.57	1,218.27	AEG Research
Small Office	Cooling	Ductless Mini Split Heat Pump	tonCool	Existing	262.66	15	\$3,359.26	15%	75%	\$0.47	101.89	118.13	7th Power Plan
Small Office	Heating	Ductless Mini Split Heat Pump	tonCool	Existing	447.34	15	\$3,359.26	15%	75%	\$0.47	1,747.96	1,872.75	7th Power Plan
Small Office	Cooling	Thermostat - WiFi/Interactive	sqft	Existing	0.49	5	\$0.66	30%	40%	\$0.09	415.29	454.43	7th Power Plan
Small Office	Heating	Thermostat - WiFi/Interactive	sqft	Existing	0.86	5	\$0.66	30%	40%	\$0.09	372.45	393.14	7th Power Plan
Small Office	Ventilation	Thermostat - WiFi/Interactive	sqft	Existing	0.14	5	\$0.66	30%	40%	\$0.09	129.86	162.69	7th Power Plan
Small Office	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	Existing	15.01	10	\$8.35	25%	65%	\$0.04	39.25	73.58	Illinois TRM
Small Office	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	Existing	15.54	10	\$11.64	25%	65%	-\$0.61	20.23	38.29	7th Power Plan
Small Office	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	Existing	61.23	15	\$36.75	0%	0%	\$0.04	0.00	0.00	Hawaii TRM
Small Office	Water Heating	Water Heater - Pipe Insulation	PipeFeet	Existing	61.74	15	\$14.88	16%	75%	\$0.02	101.41	174.00	AEG-BEST
Small Office	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	Existing	10.16	4	\$144.04	25%	65%	-\$1.97	25.71	48.62	7th Power Plan
Small Office	Water Heating	Water Heater - Thermostat Setback	WHunits	Existing	57.58	2	\$5.00	15%	75%	\$0.02	48.38	89.52	Illinois TRM
Small Office	Water Heating	Water Heater - Solar System	PipeFeet	Existing	212.24	20	\$215.28	1%	30%	\$0.06	168.81	296.26	AEG-BEST
Small Office	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.33	15	\$0.35	3%	23%	\$0.09	758.51	937.75	7th Power Plan
Small Office	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.46	15	\$0.58	3%	23%	\$0.11	1,022.47	1,291.62	7th Power Plan
Small Office	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	Existing	96.01	15	\$54.41	1%	3%	\$0.05	21.65	31.79	7th Power Plan
Small Office	Interior Lighting	Interior Lighting - Timeclocks and Timers	occ sens	Existing	0.00	8	\$111.67	7%	15%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Small Office	Interior Lighting	Interior Lighting - Skylights	1000 sqft	Existing	0.00	15	\$1,006.35	15%	25%	\$0.00	0.00	0.00	AEG Research
Small Office	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	1000 sqft	Existing	189.08	16	\$1,807.69	5%	15%	\$0.76	171.08	254.21	7th Power Plan

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Small Office	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	Existing	1,971.41	11	\$30.80	15%	50%	\$0.00	662.09	894.06	Illinois TRM
Small Office	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	ELtg Watts	Existing	2.47	8	\$0.63	15%	25%	\$0.03	471.92	750.22	7th Power Plan
Small Office	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	Existing	84.22	8	\$55.10	15%	25%	\$0.07	238.62	390.83	Pacific Gas and Electric Research
Small Office	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	Existing	101.10	7	\$3,400.00	15%	30%	\$3.99	422.40	716.20	AEG Research
Small Office	Refrigeration	Refrigeration - Anti-Sweat Heater	Fridge Feet	Existing	10.75	8	\$48.18	0%	0%	\$0.70	0.00	0.00	7th Power Plan
Small Office	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	Existing	22.53	4	\$10.44	0%	0%	\$0.12	0.00	0.00	Michigan Energy Measures Database
Small Office	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	Existing	147.74	16	\$165.20	0%	0%	\$0.12	0.00	0.00	7th Power Plan
Small Office	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	Existing	12.82	15	\$335.85	0%	0%	\$2.79	0.00	0.00	7th Power Plan
Small Office	Refrigeration	Refrigeration - Strip Curtain	Walkin Door	Existing	18.07	2	\$10.41	0%	0%	\$0.27	0.00	0.00	7th Power Plan
Small Office	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	Existing	0.20	15	\$45.43	0%	0%	\$23.49	0.00	0.00	Annual Energy Outlook, 2015
Small Office	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	Existing	4.07	15	\$313.82	0%	0%	\$7.83	0.00	0.00	Annual Energy Outlook, 2015
Small Office	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	Existing	99.23	10	\$506.05	0%	0%	\$0.68	0.00	0.00	Vermont TRM
Small Office	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	Existing	0.00	6	\$45.41	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Small Office	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	Existing	0.00	8	\$3.72	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Small Office	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	Existing	143.20	5	\$45.85	0%	0%	\$0.07	0.00	0.00	Illinois TRM
Small Office	Refrigeration	Grocery - ECMs for Display Cases	Fridge Case	Existing	0.00	16	\$165.20	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Small Office	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	Existing	1,264.99	5	\$187.94	25%	75%	\$0.03	22.48	23.04	Illinois TRM
Small Office	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	Existing	1,886.97	18	\$8,526.67	25%	50%	\$0.37	174.78	216.17	7th Power Plan
Small Office	Office Equipment	Office Equipment - Smart Power Strips	Smart Strip	Existing	72.51	4	\$41.63	10%	50%	\$0.13	682.61	641.24	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Small Office	Cooling	Lodging - Guest Room Controls	LodgUnit	Existing	198.10	15	\$260.00	0%	0%	\$10.77	0.00	0.00	AEG-BEST
Small Office	Heating	Lodging - Guest Room Controls	LodgUnit	Existing	-203.32	15	\$260.00	0%	0%	\$10.77	0.00	0.00	AEG-BEST
Small Office	Office Equipment	Data Center - Best Practice Measures	sqft	Existing	0.07	5	\$0.01	0%	0%	\$0.02	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Office	Cooling	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.01	0%	0%	\$0.04	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Office	Ventilation	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.01	0%	0%	\$0.04	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Office	Interior Lighting	Data Center - Commercially Available Measures	sqft	Existing	0.02	8	\$0.01	0%	0%	\$0.04	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Office	Office Equipment	Data Center - Commercially Available Measures	sqft	Existing	0.02	8	\$0.01	0%	0%	\$0.04	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Office	Cooling	Data Center - Cutting Edge Measures	sqft	Existing	0.04	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Office	Office Equipment	Data Center - Cutting Edge Measures	sqft	Existing	0.01	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Office	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	Existing	498.64	18	\$4,092.80	0%	0%	\$0.66	0.00	0.00	7th Power Plan
Small Office	Miscellaneous	Pool Pump - Timer	perBldg	Existing	0.00	10	\$85.22	15%	75%	\$0.00	0.00	0.00	Ontario Power TRM
Small Office	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	Existing	1,413.31	6	\$35.93	1%	3%	\$0.00	0.00	103.09	7th Power Plan
Small Office	Cooling	Advanced New Construction Designs	sqft	Existing	0.88	25	\$4.11	0%	0%	\$0.09	0.00	0.00	AEG Research
Small Office	Heating	Advanced New Construction Designs	sqft	Existing	1.45	25	\$4.11	0%	0%	\$0.09	0.00	0.00	AEG Research
Small Office	Ventilation	Advanced New Construction Designs	sqft	Existing	0.24	25	\$4.11	0%	0%	\$0.09	0.00	0.00	AEG Research
Small Office	Water Heating	Advanced New Construction Designs	sqft	Existing	0.14	25	\$4.11	0%	0%	\$0.09	0.00	0.00	AEG Research
Small Office	Interior Lighting	Advanced New Construction Designs	sqft	Existing	0.66	25	\$4.11	0%	0%	\$0.09	0.00	0.00	AEG Research
Small Office	Exterior Lighting	Advanced New Construction Designs	sqft	Existing	0.32	25	\$4.11	0%	0%	\$0.09	0.00	0.00	AEG Research
Small Office	Cooling	Strategic Energy Management	sqft	Existing	0.13	3	\$0.20	3%	14%	\$0.09	125.29	146.51	AEG Research

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Small Office	Heating	Strategic Energy Management	sqft	Existing	0.21	3	\$0.20	3%	14%	\$0.09	105.09	122.51	AEG Research
Small Office	Ventilation	Strategic Energy Management	sqft	Existing	0.04	3	\$0.20	3%	14%	\$0.09	39.81	54.92	AEG Research
Small Office	Water Heating	Strategic Energy Management	sqft	Existing	0.02	3	\$0.20	3%	14%	\$0.09	12.40	23.24	AEG Research
Small Office	Interior Lighting	Strategic Energy Management	sqft	Existing	0.10	3	\$0.20	3%	14%	\$0.09	97.49	152.39	AEG Research
Small Office	Exterior Lighting	Strategic Energy Management	sqft	Existing	0.05	3	\$0.20	3%	14%	\$0.09	47.46	78.95	AEG Research
Small Office	Refrigeration	Strategic Energy Management	sqft	Existing	0.00	3	\$0.20	3%	14%	\$0.09	7.96	3.84	AEG Research
Small Office	Office Equipment	Strategic Energy Management	sqft	Existing	0.09	3	\$0.20	3%	14%	\$0.09	111.94	107.08	AEG Research
Small Office	Cooling	Commissioning	sqft	Existing	0.17	3	\$0.45	0%	0%	\$0.18	0.00	0.00	AEG Research
Small Office	Heating	Commissioning	sqft	Existing	0.28	3	\$0.45	0%	0%	\$0.18	0.00	0.00	AEG Research
Small Office	Ventilation	Commissioning	sqft	Existing	0.05	3	\$0.45	0%	0%	\$0.18	0.00	0.00	AEG Research
Small Office	Water Heating	Commissioning	sqft	Existing	0.01	3	\$0.45	0%	0%	\$0.18	0.00	0.00	AEG Research
Small Office	Interior Lighting	Commissioning	sqft	Existing	0.11	3	\$0.45	0%	0%	\$0.18	0.00	0.00	AEG Research
Small Office	Exterior Lighting	Commissioning	sqft	Existing	0.06	3	\$0.45	0%	0%	\$0.18	0.00	0.00	AEG Research
Small Office	Refrigeration	Commissioning	sqft	Existing	0.01	3	\$0.45	0%	0%	\$0.18	0.00	0.00	AEG Research
Small Office	Cooling	Retrocommissioning	sqft	Existing	0.17	3	\$0.28	14%	61%	\$0.11	737.29	864.81	AEG Research
Small Office	Heating	Retrocommissioning	sqft	Existing	0.29	3	\$0.28	14%	61%	\$0.11	618.43	723.16	AEG Research
Small Office	Ventilation	Retrocommissioning	sqft	Existing	0.05	3	\$0.28	14%	61%	\$0.11	234.26	324.18	AEG Research
Small Office	Water Heating	Retrocommissioning	sqft	Existing	0.01	3	\$0.28	14%	61%	\$0.11	24.33	45.72	AEG Research
Small Office	Interior Lighting	Retrocommissioning	sqft	Existing	0.12	3	\$0.28	14%	61%	\$0.11	478.07	749.69	AEG Research
Small Office	Exterior Lighting	Retrocommissioning	sqft	Existing	0.06	3	\$0.28	14%	61%	\$0.11	232.73	388.42	AEG Research
Small Office	Refrigeration	Retrocommissioning	sqft	Existing	0.01	3	\$0.28	14%	61%	\$0.11	78.12	37.81	AEG Research
Small Office	Interior Lighting	Fruit Storage - Lighting Controls	sqft	Existing	0.08	10	\$0.09	0%	0%	\$0.11	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Small Office	Refrigeration	Fruit Storage Refrigeration Retrofit	sqft	Existing	0.03	10	\$1.09	0%	0%	\$4.62	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Office	Refrigeration	Fruit Storage Refrigeration Tuneup	sqft	Existing	0.01	3	\$0.23	0%	0%	\$9.47	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Office	Refrigeration	Fruit Storage Retrofit - CO2 Scrub	sqft	Existing	0.01	10	\$3.13	0%	0%	\$27.39	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Office	Refrigeration	Fruit Storage Retrofit - Membrane	sqft	Existing	0.00	10	\$0.68	0%	0%	\$29.72	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Office	Cooling	Insulation - Ceiling	sqft roof	New	0.00	45	\$1.28	15%	50%	\$0.28	0.00	0.00	Building Energy Simulation Tool
Small Office	Heating	Insulation - Ceiling	sqft roof	New	0.30	45	\$1.28	15%	50%	\$0.28	129.44	129.59	Building Energy Simulation Tool
Small Office	Ventilation	Insulation - Ceiling	sqft roof	New	0.03	45	\$1.28	15%	50%	\$0.28	39.28	42.49	Building Energy Simulation Tool
Small Office	Cooling	Insulation - Ducting	sqft duct	New	0.37	20	\$0.84	15%	50%	\$0.00	79.46	80.18	Building Energy Simulation Tool
Small Office	Heating	Insulation - Ducting	sqft duct	New	0.00	20	\$0.84	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Small Office	Ventilation	Insulation - Ducting	sqft duct	New	0.00	20	\$0.84	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Small Office	Cooling	Building Shell - Cool Roofs	sqft roof	New	0.07	20	\$0.78	45%	50%	\$10.00	8.31	8.48	Building Energy Simulation Tool
Small Office	Heating	Building Shell - Cool Roofs	sqft roof	New	-0.11	20	\$0.78	45%	50%	\$10.00	-7.00	-7.06	Building Energy Simulation Tool
Small Office	Ventilation	Building Shell - Cool Roofs	sqft roof	New	-0.01	20	\$0.78	45%	50%	\$10.00	-2.16	-2.37	Building Energy Simulation Tool
Small Office	Cooling	Insulation - Wall Cavity	sqft wall	New	-0.01	45	\$0.78	15%	50%	\$1.04	-4.51	-4.55	Building Energy Simulation Tool
Small Office	Heating	Insulation - Wall Cavity	sqft wall	New	0.06	45	\$0.78	15%	50%	\$1.04	9.98	10.02	Building Energy Simulation Tool
Small Office	Ventilation	Insulation - Wall Cavity	sqft wall	New	0.01	45	\$0.78	15%	50%	\$1.04	3.00	3.24	Building Energy Simulation Tool
Small Office	Cooling	HVAC - Duct Repair and Sealing	tonCool	New	17.28	18	\$0.57	15%	35%	\$0.00	23.49	23.67	Building Energy Simulation Tool
Small Office	Heating	HVAC - Duct Repair and Sealing	tonCool	New	28.47	18	\$0.57	15%	35%	\$0.00	19.18	19.25	Building Energy Simulation Tool
Small Office	Ventilation	HVAC - Duct Repair and Sealing	tonCool	New	3.03	18	\$0.57	15%	35%	\$0.00	5.77	6.24	Building Energy Simulation Tool

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Small Office	Cooling	Windows - High Efficiency Glazing	sqft window	New	3.85	30	\$35.93	66%	66%	\$0.14	0.00	0.00	7th Power Plan
Small Office	Heating	Windows - High Efficiency Glazing	sqft window	New	15.71	30	\$35.93	66%	66%	\$0.14	0.00	0.00	7th Power Plan
Small Office	Ventilation	Windows - High Efficiency Glazing	sqft window	New	0.98	30	\$35.93	66%	66%	\$0.14	0.00	0.00	7th Power Plan
Small Office	Cooling	Chiller - Chilled Water Reset	ChillCtrl	New	0.00	10	\$884.85	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Small Office	Cooling	Chiller - Chilled Water Variable-Flow System	HP cool	New	0.00	15	\$332.55	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Small Office	Cooling	Chiller - Variable Speed Fans	HP fan	New	0.00	15	\$208.36	15%	75%	\$0.00	0.00	0.00	New Jersey TRM
Small Office	Cooling	Water-Cooled Chiller - Condenser Water Reset	ChillCtrl	New	0.00	10	\$884.85	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Small Office	Cooling	HVAC - Economizer	HP cool	New	90.59	10	\$168.42	18%	75%	\$0.23	114.17	119.84	AEG-BEST
Small Office	Heating	Space Heating - Heat Recovery Ventilator	CFM	New	4.24	14	\$5.08	6%	75%	\$0.13	175.16	176.51	7th Power Plan
Small Office	Ventilation	Ventilation - ECM on VAV Boxes	sqft	New	0.11	18	\$0.25	15%	20%	\$0.14	17.91	19.39	7th Power Plan
Small Office	Ventilation	Ventilation - Variable Speed Control	sqft	New	0.03	15	\$181.39	19%	25%	\$347.05	3.59	4.22	AEG-BEST
Small Office	Ventilation	Ventilation - Demand Controlled	sqft	New	0.01	15	\$0.25	15%	25%	\$2.69	1.14	1.34	7th Power Plan
Small Office	Cooling	Destratification Fans (HVLS)	Strat Fan	New	2,768.17	15	\$7,270.90	15%	15%	\$0.06	0.00	0.00	AEG Research
Small Office	Heating	Destratification Fans (HVLS)	Strat Fan	New	10,665.66	15	\$7,270.90	15%	15%	\$0.06	0.00	0.00	AEG Research
Small Office	Cooling	RTU - Maintenance	tonCool	New	42.95	3	\$35.00	15%	45%	\$0.25	6.24	6.84	AEG Research
Small Office	Cooling	RTU - Advanced Controls	sqft	New	0.20	15	\$0.07	15%	45%	\$0.03	100.55	101.72	7th Power Plan
Small Office	Cooling	RTU - Evaporative Precooler	tonCool	New	87.55	15	\$681.62	15%	75%	\$0.77	296.24	300.48	AEG Research
Small Office	Cooling	Ductless Mini Split Heat Pump	tonCool	New	219.03	15	\$3,359.26	15%	75%	\$0.52	16.89	17.71	7th Power Plan
Small Office	Heating	Ductless Mini Split Heat Pump	tonCool	New	426.94	15	\$3,359.26	15%	75%	\$0.52	315.44	322.87	7th Power Plan
Small Office	Cooling	Thermostat - WiFi/Interactive	sqft	New	0.40	5	\$0.66	30%	40%	\$0.10	12.07	13.00	7th Power Plan
Small Office	Heating	Thermostat - WiFi/Interactive	sqft	New	0.80	5	\$0.66	30%	40%	\$0.10	12.10	12.57	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Small Office	Ventilation	Thermostat - WiFi/Interactive	sqft	New	0.09	5	\$0.66	30%	40%	\$0.10	3.64	4.43	7th Power Plan
Small Office	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	New	10.63	10	\$8.35	25%	65%	\$0.04	3.75	5.41	Illinois TRM
Small Office	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	New	11.09	10	\$11.64	25%	65%	-\$0.60	1.96	2.82	7th Power Plan
Small Office	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	New	42.28	15	\$36.75	0%	0%	\$0.04	0.00	0.00	Hawaii TRM
Small Office	Water Heating	Water Heater - Pipe Insulation	PipeFeet	New	42.13	15	\$14.88	1%	75%	\$0.02	17.99	24.36	AEG-BEST
Small Office	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	New	7.32	4	\$144.04	25%	65%	-\$1.92	1.18	1.85	7th Power Plan
Small Office	Water Heating	Water Heater - Thermostat Setback	WHunits	New	41.26	2	\$5.00	15%	75%	\$0.02	0.62	1.03	Illinois TRM
Small Office	Water Heating	Water Heater - Solar System	PipeFeet	New	146.55	20	\$215.28	1%	30%	\$0.06	25.34	34.06	AEG-BEST
Small Office	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.28	15	\$0.35	11%	23%	\$0.09	214.71	237.08	7th Power Plan
Small Office	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.39	15	\$0.58	11%	23%	\$0.11	295.20	327.07	7th Power Plan
Small Office	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	New	81.95	15	\$54.41	1%	3%	\$0.05	2.49	2.95	7th Power Plan
Small Office	Interior Lighting	Interior Lighting - Timeclocks and Timers	occ sens	New	0.00	8	\$111.67	7%	15%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Small Office	Interior Lighting	Interior Lighting - Skylights	1000 sqft	New	0.00	15	\$1,006.35	18%	25%	\$0.00	0.00	0.00	AEG Research
Small Office	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	1000 sqft	New	161.23	16	\$1,807.69	5%	15%	\$0.77	25.78	30.13	7th Power Plan
Small Office	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	New	1,679.29	11	\$30.80	15%	50%	\$0.00	76.97	89.22	Illinois TRM
Small Office	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	ELtg Watts	New	1.70	8	\$0.63	15%	25%	\$0.03	38.13	52.36	7th Power Plan
Small Office	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	New	59.32	8	\$55.10	15%	25%	\$0.08	20.11	27.49	Pacific Gas and Electric Research
Small Office	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	New	72.40	7	\$3,400.00	15%	30%	\$4.21	32.05	45.17	AEG Research
Small Office	Refrigeration	Refrigeration - Anti-Sweat Heater	Fridge Feet	New	8.45	8	\$48.18	0%	0%	\$0.89	0.00	0.00	7th Power Plan

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Small Office	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	New	20.58	4	\$10.44	0%	0%	\$0.13	0.00	0.00	Michigan Energy Measures Database
Small Office	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	New	131.70	16	\$165.20	0%	0%	\$0.13	0.00	0.00	7th Power Plan
Small Office	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	New	11.93	15	\$335.85	0%	0%	\$3.02	0.00	0.00	7th Power Plan
Small Office	Refrigeration	Refrigeration - Strip Curtain	Walkin Door	New	15.55	2	\$10.41	0%	0%	\$0.32	0.00	0.00	7th Power Plan
Small Office	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	New	0.19	15	\$45.43	0%	0%	\$25.41	0.00	0.00	Annual Energy Outlook, 2015
Small Office	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	New	3.94	15	\$313.82	0%	0%	\$8.47	0.00	0.00	Annual Energy Outlook, 2015
Small Office	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	New	88.46	10	\$506.05	0%	0%	\$0.77	0.00	0.00	Vermont TRM
Small Office	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	New	0.00	6	\$45.41	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Small Office	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	New	0.00	8	\$3.72	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Small Office	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	New	127.93	5	\$45.85	0%	0%	\$0.08	0.00	0.00	Illinois TRM
Small Office	Refrigeration	Grocery - ECMs for Display Cases	Fridge Case	New	0.00	16	\$165.20	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Small Office	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	New	1,244.07	5	\$187.94	25%	75%	\$0.03	0.91	0.92	Illinois TRM
Small Office	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	New	1,127.48	18	\$8,526.67	25%	50%	\$0.46	37.20	40.79	7th Power Plan
Small Office	Office Equipment	Office Equipment - Smart Power Strips	Smart Strip	New	69.60	4	\$41.63	10%	50%	\$0.14	26.91	24.20	7th Power Plan
Small Office	Cooling	Lodging - Guest Room Controls	LodgUnit	New	150.48	15	\$260.00	0%	0%	\$10.00	0.00	0.00	AEG-BEST
Small Office	Heating	Lodging - Guest Room Controls	LodgUnit	New	-173.15	15	\$260.00	0%	0%	\$10.00	0.00	0.00	AEG-BEST
Small Office	Office Equipment	Data Center - Best Practice Measures	sqft	New	0.07	5	\$0.01	0%	0%	\$0.02	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Office	Cooling	Data Center - Commercially Available Measures	sqft	New	0.01	8	\$0.01	0%	0%	\$0.04	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Office	Ventilation	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.01	0%	0%	\$0.04	0.00	0.00	com-datacenters-7p_v5p.xlsx

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Small Office	Interior Lighting	Data Center - Commercially Available Measures	sqft	New	0.02	8	\$0.01	0%	0%	\$0.04	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Office	Office Equipment	Data Center - Commercially Available Measures	sqft	New	0.02	8	\$0.01	0%	0%	\$0.04	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Office	Cooling	Data Center - Cutting Edge Measures	sqft	New	0.03	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Office	Office Equipment	Data Center - Cutting Edge Measures	sqft	New	0.01	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Office	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	New	299.51	18	\$4,092.80	0%	0%	\$0.82	0.00	0.00	7th Power Plan
Small Office	Miscellaneous	Pool Pump - Timer	perBldg	New	0.00	10	\$85.22	15%	75%	\$0.00	0.00	0.00	Ontario Power TRM
Small Office	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	New	1,413.31	6	\$35.93	1%	3%	\$0.00	0.00	5.83	7th Power Plan
Small Office	Cooling	Advanced New Construction Designs	sqft	New	0.70	25	\$4.11	10%	25%	\$0.10	296.01	299.19	AEG Research
Small Office	Heating	Advanced New Construction Designs	sqft	New	1.37	25	\$4.11	10%	25%	\$0.10	287.11	288.19	AEG Research
Small Office	Ventilation	Advanced New Construction Designs	sqft	New	0.15	25	\$4.11	10%	25%	\$0.10	87.13	95.09	AEG Research
Small Office	Water Heating	Advanced New Construction Designs	sqft	New	0.10	25	\$4.11	10%	25%	\$0.10	35.61	40.96	AEG Research
Small Office	Interior Lighting	Advanced New Construction Designs	sqft	New	0.56	25	\$4.11	10%	25%	\$0.10	262.98	281.65	AEG Research
Small Office	Exterior Lighting	Advanced New Construction Designs	sqft	New	0.23	25	\$4.11	10%	25%	\$0.10	113.47	126.17	AEG Research
Small Office	Cooling	Strategic Energy Management	sqft	New	0.10	3	\$0.18	3%	14%	\$0.08	2.79	3.04	AEG Research
Small Office	Heating	Strategic Energy Management	sqft	New	0.20	3	\$0.18	3%	14%	\$0.08	2.73	2.91	AEG Research
Small Office	Ventilation	Strategic Energy Management	sqft	New	0.02	3	\$0.18	3%	14%	\$0.08	0.84	1.05	AEG Research
Small Office	Water Heating	Strategic Energy Management	sqft	New	0.02	3	\$0.18	3%	14%	\$0.08	0.35	0.57	AEG Research
Small Office	Interior Lighting	Strategic Energy Management	sqft	New	0.09	3	\$0.18	3%	14%	\$0.08	2.57	3.56	AEG Research
Small Office	Exterior Lighting	Strategic Energy Management	sqft	New	0.03	3	\$0.18	3%	14%	\$0.08	1.11	1.72	AEG Research

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Small Office	Refrigeration	Strategic Energy Management	sqft	New	0.00	3	\$0.18	3%	14%	\$0.08	0.16	0.06	AEG Research
Small Office	Office Equipment	Strategic Energy Management	sqft	New	0.09	3	\$0.18	3%	14%	\$0.08	2.83	2.54	AEG Research
Small Office	Cooling	Commissioning	sqft	New	0.14	3	\$0.40	14%	61%	\$0.17	16.53	17.98	AEG Research
Small Office	Heating	Commissioning	sqft	New	0.28	3	\$0.40	14%	61%	\$0.17	16.17	17.23	AEG Research
Small Office	Ventilation	Commissioning	sqft	New	0.03	3	\$0.40	14%	61%	\$0.17	4.99	6.22	AEG Research
Small Office	Water Heating	Commissioning	sqft	New	0.01	3	\$0.40	14%	61%	\$0.17	0.69	1.12	AEG Research
Small Office	Interior Lighting	Commissioning	sqft	New	0.10	3	\$0.40	14%	61%	\$0.17	12.66	17.53	AEG Research
Small Office	Exterior Lighting	Commissioning	sqft	New	0.04	3	\$0.40	14%	61%	\$0.17	5.47	8.48	AEG Research
Small Office	Refrigeration	Commissioning	sqft	New	0.01	3	\$0.40	14%	61%	\$0.17	1.60	0.59	AEG Research
Small Office	Cooling	Retrocommissioning	sqft	New	0.14	3	\$0.25	0%	0%	\$0.11	0.00	0.00	AEG Research
Small Office	Heating	Retrocommissioning	sqft	New	0.28	3	\$0.25	0%	0%	\$0.11	0.00	0.00	AEG Research
Small Office	Ventilation	Retrocommissioning	sqft	New	0.03	3	\$0.25	0%	0%	\$0.11	0.00	0.00	AEG Research
Small Office	Water Heating	Retrocommissioning	sqft	New	0.01	3	\$0.25	0%	0%	\$0.11	0.00	0.00	AEG Research
Small Office	Interior Lighting	Retrocommissioning	sqft	New	0.10	3	\$0.25	0%	0%	\$0.11	0.00	0.00	AEG Research
Small Office	Exterior Lighting	Retrocommissioning	sqft	New	0.04	3	\$0.25	0%	0%	\$0.11	0.00	0.00	AEG Research
Small Office	Refrigeration	Retrocommissioning	sqft	New	0.01	3	\$0.25	0%	0%	\$0.11	0.00	0.00	AEG Research
Small Office	Interior Lighting	Fruit Storage - Lighting Controls	sqft	New	0.07	10	\$0.09	0%	0%	\$0.11	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Office	Refrigeration	Fruit Storage Refrigeration Retrofit	sqft	New	0.02	10	\$1.09	0%	0%	\$5.83	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Office	Refrigeration	Fruit Storage Refrigeration Tuneup	sqft	New	0.01	3	\$0.23	0%	0%	\$11.95	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Office	Refrigeration	Fruit Storage Retrofit - CO2 Scrub	sqft	New	0.01	10	\$3.13	0%	0%	\$34.55	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Office	Refrigeration	Fruit Storage Retrofit - Membrane	sqft	New	0.00	10	\$0.68	0%	0%	\$37.49	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Retail	Cooling	Insulation - Ceiling	sqft roof	Existing	0.00	45	\$1.28	15%	35%	\$0.06	0.00	0.00	Building Energy Simulation Tool

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Large Retail	Heating	Insulation - Ceiling	sqft roof	Existing	1.06	45	\$1.28	15%	35%	\$0.06	82.97	84.03	Building Energy Simulation Tool
Large Retail	Ventilation	Insulation - Ceiling	sqft roof	Existing	0.50	45	\$1.28	15%	35%	\$0.06	77.98	95.09	Building Energy Simulation Tool
Large Retail	Cooling	Insulation - Ducting	sqft duct	Existing	0.14	20	\$0.84	15%	35%	\$0.00	33.18	34.11	Building Energy Simulation Tool
Large Retail	Heating	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.84	15%	35%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Large Retail	Ventilation	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.84	15%	35%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Large Retail	Cooling	Building Shell - Cool Roofs	sqft roof	Existing	0.62	20	\$0.78	45%	50%	\$10.00	22.42	25.08	Building Energy Simulation Tool
Large Retail	Heating	Building Shell - Cool Roofs	sqft roof	Existing	-0.63	20	\$0.78	45%	50%	\$10.00	-11.92	-12.81	Building Energy Simulation Tool
Large Retail	Ventilation	Building Shell - Cool Roofs	sqft roof	Existing	-0.31	20	\$0.78	45%	50%	\$10.00	-11.79	-15.06	Building Energy Simulation Tool
Large Retail	Cooling	Insulation - Wall Cavity	sqft wall	Existing	-0.39	45	\$0.78	15%	35%	\$0.03	-58.45	-59.94	Building Energy Simulation Tool
Large Retail	Heating	Insulation - Wall Cavity	sqft wall	Existing	1.45	45	\$0.78	15%	35%	\$0.03	112.92	113.12	Building Energy Simulation Tool
Large Retail	Ventilation	Insulation - Wall Cavity	sqft wall	Existing	0.69	45	\$0.78	15%	35%	\$0.03	107.21	128.52	Building Energy Simulation Tool
Large Retail	Cooling	HVAC - Duct Repair and Sealing	tonCool	Existing	3.60	18	\$0.57	15%	25%	\$0.01	3.33	3.40	Building Energy Simulation Tool
Large Retail	Heating	HVAC - Duct Repair and Sealing	tonCool	Existing	4.74	18	\$0.57	15%	25%	\$0.01	2.23	2.25	Building Energy Simulation Tool
Large Retail	Ventilation	HVAC - Duct Repair and Sealing	tonCool	Existing	2.25	18	\$0.57	15%	25%	\$0.01	2.11	2.56	Building Energy Simulation Tool
Large Retail	Cooling	Windows - High Efficiency Glazing	sqft window	Existing	5.71	30	\$35.93	48%	48%	\$0.10	0.00	0.00	7th Power Plan
Large Retail	Heating	Windows - High Efficiency Glazing	sqft window	Existing	19.32	30	\$35.93	48%	48%	\$0.10	0.00	0.00	7th Power Plan
Large Retail	Ventilation	Windows - High Efficiency Glazing	sqft window	Existing	5.20	30	\$35.93	48%	48%	\$0.10	0.00	0.00	7th Power Plan
Large Retail	Cooling	Chiller - Chilled Water Reset	ChillCtrl	Existing	2,172.11	10	\$884.85	15%	75%	\$0.05	1.37	1.44	AEG-BEST
Large Retail	Cooling	Chiller - Chilled Water Variable-Flow System	HP cool	Existing	220.83	15	\$332.55	15%	75%	\$0.16	19.36	20.32	AEG-BEST

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Large Retail	Cooling	Chiller - Variable Speed Fans	HP fan	Existing	519.07	15	\$208.36	15%	75%	\$0.04	4.57	4.75	New Jersey TRM
Large Retail	Cooling	Water-Cooled Chiller - Condenser Water Reset	ChillCtrl	Existing	17,639.39	10	\$884.85	15%	75%	\$0.01	4.23	4.45	AEG-BEST
Large Retail	Cooling	HVAC - Economizer	HP cool	Existing	74.98	10	\$168.42	18%	75%	\$0.30	306.22	320.31	AEG-BEST
Large Retail	Heating	Space Heating - Heat Recovery Ventilator	CFM	Existing	1.54	14	\$5.08	3%	75%	\$0.37	322.85	332.53	7th Power Plan
Large Retail	Ventilation	Ventilation - ECM on VAV Boxes	sqft	Existing	0.45	18	\$0.25	15%	20%	\$0.04	53.23	64.54	7th Power Plan
Large Retail	Ventilation	Ventilation - Variable Speed Control	sqft	Existing	0.05	15	\$181.39	13%	50%	\$300.43	45.27	63.35	AEG-BEST
Large Retail	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.03	15	\$0.25	15%	75%	\$0.85	37.75	50.95	7th Power Plan
Large Retail	Cooling	Destratification Fans (HVLS)	Strat Fan	Existing	3,035.69	15	\$7,270.90	15%	30%	\$0.24	96.20	103.49	AEG Research
Large Retail	Heating	Destratification Fans (HVLS)	Strat Fan	Existing	0.17	15	\$7,270.90	15%	30%	\$0.24	0.00	0.00	AEG Research
Large Retail	Cooling	RTU - Maintenance	tonCool	Existing	33.82	3	\$35.00	15%	45%	\$0.31	82.89	96.15	AEG Research
Large Retail	Cooling	RTU - Advanced Controls	sqft	Existing	0.11	15	\$0.07	15%	45%	\$0.06	67.45	68.83	7th Power Plan
Large Retail	Cooling	RTU - Evaporative Precooler	tonCool	Existing	69.41	15	\$681.62	15%	75%	\$0.97	312.10	326.00	AEG Research
Large Retail	Cooling	Ductless Mini Split Heat Pump	tonCool	Existing	166.43	15	\$3,359.26	15%	25%	\$0.80	5.63	6.53	7th Power Plan
Large Retail	Heating	Ductless Mini Split Heat Pump	tonCool	Existing	248.89	15	\$3,359.26	15%	25%	\$0.80	100.66	107.31	7th Power Plan
Large Retail	Cooling	Thermostat - WiFi/Interactive	sqft	Existing	0.45	5	\$0.66	30%	40%	\$0.08	103.05	108.57	7th Power Plan
Large Retail	Heating	Thermostat - WiFi/Interactive	sqft	Existing	0.74	5	\$0.66	30%	40%	\$0.08	85.20	88.85	7th Power Plan
Large Retail	Ventilation	Thermostat - WiFi/Interactive	sqft	Existing	0.36	5	\$0.66	30%	40%	\$0.08	82.62	103.15	7th Power Plan
Large Retail	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	Existing	170.27	10	\$8.35	25%	65%	\$0.00	12.09	22.34	Illinois TRM
Large Retail	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	Existing	176.30	10	\$11.64	25%	65%	-\$0.05	6.23	11.63	7th Power Plan
Large Retail	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	Existing	58.10	15	\$36.75	0%	0%	\$0.04	0.00	0.00	Hawaii TRM
Large Retail	Water Heating	Water Heater - Pipe Insulation	PipeFeet	Existing	698.69	15	\$14.88	16%	75%	\$0.00	31.13	52.85	AEG-BEST

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Large Retail	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	Existing	116.49	4	\$144.04	25%	65%	-\$0.17	8.07	14.89	7th Power Plan
Large Retail	Water Heating	Water Heater - Thermostat Setback	WHUnits	Existing	58.21	2	\$5.00	15%	75%	\$0.02	14.93	27.24	Illinois TRM
Large Retail	Water Heating	Water Heater - Solar System	PipeFeet	Existing	2,405.49	20	\$215.28	1%	30%	\$0.01	51.93	90.10	AEG-BEST
Large Retail	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.54	15	\$0.35	3%	23%	\$0.05	305.77	380.57	7th Power Plan
Large Retail	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.74	15	\$0.58	3%	23%	\$0.06	412.56	524.31	7th Power Plan
Large Retail	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	Existing	526.56	15	\$54.41	1%	3%	\$0.01	8.66	13.30	7th Power Plan
Large Retail	Interior Lighting	Interior Lighting - Timeclocks and Timers	occ sens	Existing	0.00	8	\$111.67	7%	15%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Large Retail	Interior Lighting	Interior Lighting - Skylights	1000 sqft	Existing	0.00	15	\$1,006.35	15%	30%	\$0.00	0.00	0.00	AEG Research
Large Retail	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	1000 sqft	Existing	360.86	16	\$1,807.69	5%	15%	\$0.39	79.94	121.50	7th Power Plan
Large Retail	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	Existing	3,771.59	11	\$30.80	15%	50%	\$0.00	309.99	428.04	Illinois TRM
Large Retail	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	ELtg Watts	Existing	1.65	8	\$0.63	15%	25%	\$0.05	75.36	115.14	7th Power Plan
Large Retail	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	Existing	56.49	8	\$55.10	15%	25%	\$0.12	38.17	60.00	Pacific Gas and Electric Research
Large Retail	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	Existing	67.84	7	\$3,400.00	15%	30%	\$6.29	67.71	110.00	AEG Research
Large Retail	Refrigeration	Refrigeration - Anti-Sweat Heater	Fridge Feet	Existing	63.65	8	\$48.18	4%	25%	\$0.12	4.81	7.02	7th Power Plan
Large Retail	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	Existing	85.27	4	\$10.44	4%	25%	\$0.03	4.27	5.08	Michigan Energy Measures Database
Large Retail	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	Existing	816.27	16	\$165.20	4%	25%	\$0.02	3.24	3.34	7th Power Plan
Large Retail	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	Existing	118.43	15	\$335.85	0%	0%	\$0.30	0.00	0.00	7th Power Plan
Large Retail	Refrigeration	Refrigeration - Strip Curtain	Walkin Door	Existing	87.58	2	\$10.41	4%	25%	\$0.06	0.73	0.86	7th Power Plan
Large Retail	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBtuh	Existing	1.87	15	\$45.43	2%	13%	\$2.51	17.73	20.81	Annual Energy Outlook, 2015

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Large Retail	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	Existing	39.42	15	\$313.82	2%	13%	\$0.84	31.29	36.32	Annual Energy Outlook, 2015
Large Retail	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	Existing	532.60	10	\$506.05	4%	25%	\$0.12	2.10	2.20	Vermont TRM
Large Retail	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	Existing	37.95	6	\$45.41	0%	0%	\$0.22	0.00	0.00	7th Power Plan
Large Retail	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	Existing	3.06	8	\$3.72	0%	0%	\$0.19	0.00	0.00	7th Power Plan
Large Retail	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	Existing	729.16	5	\$45.85	0%	0%	\$0.01	0.00	0.00	Illinois TRM
Large Retail	Refrigeration	Grocery - ECMs for Display Cases	Fridge Case	Existing	161.75	16	\$165.20	4%	25%	\$0.11	4.31	4.90	7th Power Plan
Large Retail	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	Existing	1,240.91	5	\$187.94	25%	75%	\$0.03	36.03	37.81	Illinois TRM
Large Retail	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	Existing	4,792.25	18	\$8,526.67	25%	50%	\$0.14	111.99	137.71	7th Power Plan
Large Retail	Office Equipment	Office Equipment - Smart Power Strips	Smart Strip	Existing	15.93	4	\$41.63	10%	50%	\$0.61	36.67	35.05	7th Power Plan
Large Retail	Cooling	Lodging - Guest Room Controls	LodgUnit	Existing	177.00	15	\$260.00	0%	0%	\$1.24	0.00	0.00	AEG-BEST
Large Retail	Heating	Lodging - Guest Room Controls	LodgUnit	Existing	-158.22	15	\$260.00	0%	0%	\$1.24	0.00	0.00	AEG-BEST
Large Retail	Office Equipment	Data Center - Best Practice Measures	sqft	Existing	0.01	5	\$0.00	0%	0%	\$0.02	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Retail	Cooling	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.02	0%	0%	\$0.04	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Retail	Ventilation	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.02	0%	0%	\$0.04	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Retail	Interior Lighting	Data Center - Commercially Available Measures	sqft	Existing	0.04	8	\$0.02	0%	0%	\$0.04	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Retail	Office Equipment	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.02	0%	0%	\$0.04	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Retail	Cooling	Data Center - Cutting Edge Measures	sqft	Existing	0.03	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Retail	Office Equipment	Data Center - Cutting Edge Measures	sqft	Existing	0.00	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Retail	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	Existing	12,982.72	18	\$4,092.80	0%	0%	\$0.03	0.00	0.00	7th Power Plan

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Large Retail	Miscellaneous	Pool Pump - Timer	perBldg	Existing	0.00	10	\$85.22	15%	75%	\$0.00	0.00	0.00	Ontario Power TRM
Large Retail	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	Existing	15,285.84	6	\$35.93	1%	3%	\$0.00	0.00	27.96	7th Power Plan
Large Retail	Cooling	Advanced New Construction Designs	sqft	Existing	0.81	25	\$4.11	0%	0%	\$0.08	0.00	0.00	AEG Research
Large Retail	Heating	Advanced New Construction Designs	sqft	Existing	1.31	25	\$4.11	0%	0%	\$0.08	0.00	0.00	AEG Research
Large Retail	Ventilation	Advanced New Construction Designs	sqft	Existing	0.61	25	\$4.11	0%	0%	\$0.08	0.00	0.00	AEG Research
Large Retail	Water Heating	Advanced New Construction Designs	sqft	Existing	0.16	25	\$4.11	0%	0%	\$0.08	0.00	0.00	AEG Research
Large Retail	Interior Lighting	Advanced New Construction Designs	sqft	Existing	1.08	25	\$4.11	0%	0%	\$0.08	0.00	0.00	AEG Research
Large Retail	Exterior Lighting	Advanced New Construction Designs	sqft	Existing	0.20	25	\$4.11	0%	0%	\$0.08	0.00	0.00	AEG Research
Large Retail	Cooling	Strategic Energy Management	sqft	Existing	0.11	3	\$0.21	0%	3%	\$0.09	7.99	9.27	AEG Research
Large Retail	Heating	Strategic Energy Management	sqft	Existing	0.19	3	\$0.21	0%	3%	\$0.09	6.93	7.58	AEG Research
Large Retail	Ventilation	Strategic Energy Management	sqft	Existing	0.09	3	\$0.21	0%	3%	\$0.09	6.85	9.41	AEG Research
Large Retail	Water Heating	Strategic Energy Management	sqft	Existing	0.02	3	\$0.21	0%	3%	\$0.09	1.03	1.92	AEG Research
Large Retail	Interior Lighting	Strategic Energy Management	sqft	Existing	0.17	3	\$0.21	0%	3%	\$0.09	10.66	17.30	AEG Research
Large Retail	Exterior Lighting	Strategic Energy Management	sqft	Existing	0.03	3	\$0.21	0%	3%	\$0.09	2.07	3.31	AEG Research
Large Retail	Refrigeration	Strategic Energy Management	sqft	Existing	0.02	3	\$0.21	0%	3%	\$0.09	1.98	2.10	AEG Research
Large Retail	Office Equipment	Strategic Energy Management	sqft	Existing	0.02	3	\$0.21	0%	3%	\$0.09	1.64	1.60	AEG Research
Large Retail	Cooling	Commissioning	sqft	Existing	0.15	3	\$0.52	0%	0%	\$0.17	0.00	0.00	AEG Research
Large Retail	Heating	Commissioning	sqft	Existing	0.25	3	\$0.52	0%	0%	\$0.17	0.00	0.00	AEG Research
Large Retail	Ventilation	Commissioning	sqft	Existing	0.13	3	\$0.52	0%	0%	\$0.17	0.00	0.00	AEG Research
Large Retail	Water Heating	Commissioning	sqft	Existing	0.01	3	\$0.52	0%	0%	\$0.17	0.00	0.00	AEG Research
Large Retail	Interior Lighting	Commissioning	sqft	Existing	0.19	3	\$0.52	0%	0%	\$0.17	0.00	0.00	AEG Research

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Large Retail	Exterior Lighting	Commissioning	sqft	Existing	0.04	3	\$0.52	0%	0%	\$0.17	0.00	0.00	AEG Research
Large Retail	Refrigeration	Commissioning	sqft	Existing	0.05	3	\$0.52	0%	0%	\$0.17	0.00	0.00	AEG Research
Large Retail	Cooling	Retrocommissioning	sqft	Existing	0.16	3	\$0.33	16%	69%	\$0.11	195.17	226.61	AEG Research
Large Retail	Heating	Retrocommissioning	sqft	Existing	0.26	3	\$0.33	16%	69%	\$0.11	169.23	185.37	AEG Research
Large Retail	Ventilation	Retrocommissioning	sqft	Existing	0.13	3	\$0.33	16%	69%	\$0.11	167.44	230.09	AEG Research
Large Retail	Water Heating	Retrocommissioning	sqft	Existing	0.01	3	\$0.33	16%	69%	\$0.11	8.42	15.64	AEG Research
Large Retail	Interior Lighting	Retrocommissioning	sqft	Existing	0.19	3	\$0.33	16%	69%	\$0.11	217.03	352.53	AEG Research
Large Retail	Exterior Lighting	Retrocommissioning	sqft	Existing	0.04	3	\$0.33	16%	69%	\$0.11	42.17	67.35	AEG Research
Large Retail	Refrigeration	Retrocommissioning	sqft	Existing	0.06	3	\$0.33	16%	69%	\$0.11	80.71	85.58	AEG Research
Large Retail	Interior Lighting	Fruit Storage - Lighting Controls	sqft	Existing	0.14	10	\$0.09	0%	0%	\$0.06	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Retail	Refrigeration	Fruit Storage Refrigeration Retrofit	sqft	Existing	0.18	10	\$1.09	0%	0%	\$0.78	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Retail	Refrigeration	Fruit Storage Refrigeration Tuneup	sqft	Existing	0.04	3	\$0.23	0%	0%	\$1.59	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Retail	Refrigeration	Fruit Storage Retrofit - CO2 Scrub	sqft	Existing	0.08	10	\$3.13	0%	0%	\$4.61	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Retail	Refrigeration	Fruit Storage Retrofit - Membrane	sqft	Existing	0.02	10	\$0.68	0%	0%	\$5.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Retail	Cooling	Insulation - Ceiling	sqft roof	New	0.00	45	\$1.28	15%	50%	\$0.07	0.00	0.00	Building Energy Simulation Tool
Large Retail	Heating	Insulation - Ceiling	sqft roof	New	1.00	45	\$1.28	15%	50%	\$0.07	32.60	32.71	Building Energy Simulation Tool
Large Retail	Ventilation	Insulation - Ceiling	sqft roof	New	0.29	45	\$1.28	15%	50%	\$0.07	26.74	28.99	Building Energy Simulation Tool
Large Retail	Cooling	Insulation - Ducting	sqft duct	New	0.20	20	\$0.84	15%	25%	\$0.00	5.61	5.69	Building Energy Simulation Tool
Large Retail	Heating	Insulation - Ducting	sqft duct	New	0.00	20	\$0.84	15%	25%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Large Retail	Ventilation	Insulation - Ducting	sqft duct	New	0.00	20	\$0.84	15%	25%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Large Retail	Cooling	Building Shell - Cool Roofs	sqft roof	New	0.15	20	\$0.78	45%	50%	\$10.00	1.38	1.40	Building Energy Simulation Tool

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Large Retail	Heating	Building Shell - Cool Roofs	sqft roof	New	-0.26	20	\$0.78	45%	50%	\$10.00	-1.20	-1.22	Building Energy Simulation Tool
Large Retail	Ventilation	Building Shell - Cool Roofs	sqft roof	New	-0.08	20	\$0.78	45%	50%	\$10.00	-0.99	-1.09	Building Energy Simulation Tool
Large Retail	Cooling	Insulation - Wall Cavity	sqft wall	New	-0.02	45	\$0.78	15%	50%	\$0.06	-1.33	-1.34	Building Energy Simulation Tool
Large Retail	Heating	Insulation - Wall Cavity	sqft wall	New	0.74	45	\$0.78	15%	50%	\$0.06	23.89	23.90	Building Energy Simulation Tool
Large Retail	Ventilation	Insulation - Wall Cavity	sqft wall	New	0.22	45	\$0.78	15%	50%	\$0.06	19.60	21.17	Building Energy Simulation Tool
Large Retail	Cooling	HVAC - Duct Repair and Sealing	tonCool	New	7.89	18	\$0.57	15%	25%	\$0.00	1.72	1.73	Building Energy Simulation Tool
Large Retail	Heating	HVAC - Duct Repair and Sealing	tonCool	New	11.83	18	\$0.57	15%	25%	\$0.00	1.29	1.29	Building Energy Simulation Tool
Large Retail	Ventilation	HVAC - Duct Repair and Sealing	tonCool	New	3.49	18	\$0.57	15%	25%	\$0.00	1.06	1.15	Building Energy Simulation Tool
Large Retail	Cooling	Windows - High Efficiency Glazing	sqft window	New	5.29	30	\$35.93	66%	66%	\$0.11	0.00	0.00	7th Power Plan
Large Retail	Heating	Windows - High Efficiency Glazing	sqft window	New	18.18	30	\$35.93	66%	66%	\$0.11	0.00	0.00	7th Power Plan
Large Retail	Ventilation	Windows - High Efficiency Glazing	sqft window	New	3.08	30	\$35.93	66%	66%	\$0.11	0.00	0.00	7th Power Plan
Large Retail	Cooling	Chiller - Chilled Water Reset	ChillCtrl	New	1,785.57	10	\$884.85	15%	75%	\$0.06	0.11	0.11	AEG-BEST
Large Retail	Cooling	Chiller - Chilled Water Variable-Flow System	HP cool	New	181.55	15	\$332.55	15%	75%	\$0.19	1.99	2.01	AEG-BEST
Large Retail	Cooling	Chiller - Variable Speed Fans	HP fan	New	425.55	15	\$208.36	15%	75%	\$0.05	0.47	0.47	New Jersey TRM
Large Retail	Cooling	Water-Cooled Chiller - Condenser Water Reset	ChillCtrl	New	14,427.13	10	\$884.85	15%	75%	\$0.01	0.34	0.34	AEG-BEST
Large Retail	Cooling	HVAC - Economizer	HP cool	New	69.08	10	\$168.42	18%	75%	\$0.31	27.01	28.18	AEG-BEST
Large Retail	Heating	Space Heating - Heat Recovery Ventilator	CFM	New	1.43	14	\$5.08	6%	75%	\$0.39	33.31	34.56	7th Power Plan
Large Retail	Ventilation	Ventilation - ECM on VAV Boxes	sqft	New	0.26	18	\$0.25	15%	20%	\$0.06	9.88	10.78	7th Power Plan
Large Retail	Ventilation	Ventilation - Variable Speed Control	sqft	New	0.03	15	\$181.39	19%	50%	\$372.72	3.89	4.63	AEG-BEST

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Large Retail	Ventilation	Ventilation - Demand Controlled	sqft	New	0.01	15	\$0.25	15%	75%	\$1.05	3.69	4.40	7th Power Plan
Large Retail	Cooling	Destratification Fans (HVLS)	Strat Fan	New	2,836.63	15	\$7,270.90	15%	30%	\$0.26	11.22	11.59	AEG Research
Large Retail	Heating	Destratification Fans (HVLS)	Strat Fan	New	0.16	15	\$7,270.90	15%	30%	\$0.26	0.00	0.00	AEG Research
Large Retail	Cooling	RTU - Maintenance	tonCool	New	32.72	3	\$35.00	15%	45%	\$0.33	1.61	1.76	AEG Research
Large Retail	Cooling	RTU - Advanced Controls	sqft	New	0.11	15	\$0.07	15%	45%	\$0.07	14.20	14.30	7th Power Plan
Large Retail	Cooling	RTU - Evaporative Precooler	tonCool	New	66.59	15	\$681.62	15%	75%	\$1.01	84.26	85.02	AEG Research
Large Retail	Cooling	Ductless Mini Split Heat Pump	tonCool	New	140.67	15	\$3,359.26	15%	25%	\$0.89	0.82	0.86	7th Power Plan
Large Retail	Heating	Ductless Mini Split Heat Pump	tonCool	New	238.64	15	\$3,359.26	15%	25%	\$0.89	15.78	16.23	7th Power Plan
Large Retail	Cooling	Thermostat - WiFi/Interactive	sqft	New	0.43	5	\$0.66	30%	40%	\$0.09	3.00	3.14	7th Power Plan
Large Retail	Heating	Thermostat - WiFi/Interactive	sqft	New	0.70	5	\$0.66	30%	40%	\$0.09	2.45	2.56	7th Power Plan
Large Retail	Ventilation	Thermostat - WiFi/Interactive	sqft	New	0.21	5	\$0.66	30%	40%	\$0.09	2.01	2.49	7th Power Plan
Large Retail	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	New	38.42	10	\$8.35	25%	65%	\$0.01	0.97	1.37	Illinois TRM
Large Retail	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	New	40.09	10	\$11.64	25%	65%	-\$0.16	0.51	0.71	7th Power Plan
Large Retail	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	New	39.79	15	\$36.75	0%	0%	\$0.04	0.00	0.00	Hawaii TRM
Large Retail	Water Heating	Water Heater - Pipe Insulation	PipeFeet	New	455.80	15	\$14.88	1%	75%	\$0.00	4.72	6.27	AEG-BEST
Large Retail	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	New	26.41	4	\$144.04	25%	65%	-\$0.52	0.31	0.48	7th Power Plan
Large Retail	Water Heating	Water Heater - Thermostat Setback	WHunits	New	39.87	2	\$5.00	15%	75%	\$0.02	0.16	0.26	Illinois TRM
Large Retail	Water Heating	Water Heater - Solar System	PipeFeet	New	1,587.78	20	\$215.28	1%	30%	\$0.01	6.66	8.79	AEG-BEST
Large Retail	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.45	15	\$0.35	11%	23%	\$0.06	77.39	86.03	7th Power Plan
Large Retail	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.62	15	\$0.58	11%	23%	\$0.07	106.41	118.67	7th Power Plan
Large Retail	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	New	441.30	15	\$54.41	1%	3%	\$0.01	0.86	1.05	7th Power Plan

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Large Retail	Interior Lighting	Interior Lighting - Timeclocks and Timers	occ sens	New	0.00	8	\$111.67	7%	15%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Large Retail	Interior Lighting	Interior Lighting - Skylights	1000 sqft	New	0.00	15	\$1,006.35	18%	33%	\$0.00	0.00	0.00	AEG Research
Large Retail	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	1000 sqft	New	299.06	16	\$1,807.69	5%	15%	\$0.40	10.38	12.39	7th Power Plan
Large Retail	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	New	3,134.14	11	\$30.80	15%	50%	\$0.00	31.37	36.99	Illinois TRM
Large Retail	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	ELtg Watts	New	1.23	8	\$0.63	15%	25%	\$0.05	5.53	7.22	7th Power Plan
Large Retail	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	New	43.10	8	\$55.10	15%	25%	\$0.12	2.92	3.79	Pacific Gas and Electric Research
Large Retail	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	New	52.38	7	\$3,400.00	15%	30%	\$6.63	4.63	6.25	AEG Research
Large Retail	Refrigeration	Refrigeration - Anti-Sweat Heater	Fridge Feet	New	44.37	8	\$48.18	4%	25%	\$0.17	0.33	0.34	7th Power Plan
Large Retail	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	New	65.26	4	\$10.44	4%	25%	\$0.04	0.14	0.12	Michigan Energy Measures Database
Large Retail	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	New	694.10	16	\$165.20	4%	25%	\$0.02	0.43	0.38	7th Power Plan
Large Retail	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	New	110.35	15	\$335.85	0%	0%	\$0.32	0.00	0.00	7th Power Plan
Large Retail	Refrigeration	Refrigeration - Strip Curtain	Walkin Door	New	80.91	2	\$10.41	4%	25%	\$0.06	0.01	0.01	7th Power Plan
Large Retail	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBtuh	New	1.76	15	\$45.43	2%	13%	\$2.73	2.19	2.23	Annual Energy Outlook, 2015
Large Retail	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	New	36.74	15	\$313.82	2%	13%	\$0.91	3.81	3.87	Annual Energy Outlook, 2015
Large Retail	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	New	462.30	10	\$506.05	4%	25%	\$0.15	0.21	0.18	Vermont TRM
Large Retail	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	New	34.54	6	\$45.41	0%	0%	\$0.25	0.00	0.00	7th Power Plan
Large Retail	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	New	2.78	8	\$3.72	0%	0%	\$0.21	0.00	0.00	7th Power Plan
Large Retail	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	New	671.88	5	\$45.85	0%	0%	\$0.01	0.00	0.00	Illinois TRM
Large Retail	Refrigeration	Grocery - ECMs for Display Cases	Fridge Case	New	144.31	16	\$165.20	4%	25%	\$0.12	0.51	0.52	7th Power Plan

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Large Retail	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	New	1,211.77	5	\$187.94	25%	75%	\$0.03	1.65	1.66	Illinois TRM
Large Retail	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	New	2,806.97	18	\$8,526.67	25%	50%	\$0.18	21.22	23.19	7th Power Plan
Large Retail	Office Equipment	Office Equipment - Smart Power Strips	Smart Strip	New	15.32	4	\$41.63	10%	50%	\$0.63	1.29	1.16	7th Power Plan
Large Retail	Cooling	Lodging - Guest Room Controls	LodgUnit	New	145.44	15	\$260.00	0%	0%	\$5.63	0.00	0.00	AEG-BEST
Large Retail	Heating	Lodging - Guest Room Controls	LodgUnit	New	-147.83	15	\$260.00	0%	0%	\$5.63	0.00	0.00	AEG-BEST
Large Retail	Office Equipment	Data Center - Best Practice Measures	sqft	New	0.01	5	\$0.00	0%	0%	\$0.02	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Retail	Cooling	Data Center - Commercially Available Measures	sqft	New	0.01	8	\$0.02	0%	0%	\$0.04	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Retail	Ventilation	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.02	0%	0%	\$0.04	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Retail	Interior Lighting	Data Center - Commercially Available Measures	sqft	New	0.03	8	\$0.02	0%	0%	\$0.04	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Retail	Office Equipment	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.02	0%	0%	\$0.04	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Retail	Cooling	Data Center - Cutting Edge Measures	sqft	New	0.03	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Retail	Office Equipment	Data Center - Cutting Edge Measures	sqft	New	0.00	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Retail	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	New	7,584.79	18	\$4,092.80	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Large Retail	Miscellaneous	Pool Pump - Timer	perBldg	New	0.00	10	\$85.22	15%	75%	\$0.00	0.00	0.00	Ontario Power TRM
Large Retail	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	New	5,095.28	6	\$35.93	1%	3%	\$0.00	0.00	1.42	7th Power Plan
Large Retail	Cooling	Advanced New Construction Designs	sqft	New	0.75	25	\$4.11	10%	30%	\$0.08	96.26	96.68	AEG Research
Large Retail	Heating	Advanced New Construction Designs	sqft	New	1.23	25	\$4.11	10%	30%	\$0.08	78.65	79.29	AEG Research
Large Retail	Ventilation	Advanced New Construction Designs	sqft	New	0.36	25	\$4.11	10%	30%	\$0.08	63.58	69.97	AEG Research
Large Retail	Water Heating	Advanced New Construction Designs	sqft	New	0.11	25	\$4.11	10%	30%	\$0.08	12.79	14.56	AEG Research

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Large Retail	Interior Lighting	Advanced New Construction Designs	sqft	New	0.90	25	\$4.11	10%	30%	\$0.08	125.39	135.15	AEG Research
Large Retail	Exterior Lighting	Advanced New Construction Designs	sqft	New	0.16	25	\$4.11	10%	30%	\$0.08	22.43	23.90	AEG Research
Large Retail	Cooling	Strategic Energy Management	sqft	New	0.11	3	\$0.19	0%	3%	\$0.09	0.18	0.20	AEG Research
Large Retail	Heating	Strategic Energy Management	sqft	New	0.18	3	\$0.19	0%	3%	\$0.09	0.15	0.16	AEG Research
Large Retail	Ventilation	Strategic Energy Management	sqft	New	0.05	3	\$0.19	0%	3%	\$0.09	0.12	0.16	AEG Research
Large Retail	Water Heating	Strategic Energy Management	sqft	New	0.02	3	\$0.19	0%	3%	\$0.09	0.03	0.04	AEG Research
Large Retail	Interior Lighting	Strategic Energy Management	sqft	New	0.14	3	\$0.19	0%	3%	\$0.09	0.25	0.36	AEG Research
Large Retail	Exterior Lighting	Strategic Energy Management	sqft	New	0.02	3	\$0.19	0%	3%	\$0.09	0.04	0.07	AEG Research
Large Retail	Refrigeration	Strategic Energy Management	sqft	New	0.02	3	\$0.19	0%	3%	\$0.09	0.04	0.04	AEG Research
Large Retail	Office Equipment	Strategic Energy Management	sqft	New	0.02	3	\$0.19	0%	3%	\$0.09	0.04	0.03	AEG Research
Large Retail	Cooling	Commissioning	sqft	New	0.15	3	\$0.47	16%	69%	\$0.17	4.43	4.80	AEG Research
Large Retail	Heating	Commissioning	sqft	New	0.25	3	\$0.47	16%	69%	\$0.17	3.70	3.92	AEG Research
Large Retail	Ventilation	Commissioning	sqft	New	0.08	3	\$0.47	16%	69%	\$0.17	3.05	3.87	AEG Research
Large Retail	Water Heating	Commissioning	sqft	New	0.01	3	\$0.47	16%	69%	\$0.17	0.20	0.33	AEG Research
Large Retail	Interior Lighting	Commissioning	sqft	New	0.16	3	\$0.47	16%	69%	\$0.17	5.01	7.29	AEG Research
Large Retail	Exterior Lighting	Commissioning	sqft	New	0.03	3	\$0.47	16%	69%	\$0.17	0.90	1.35	AEG Research
Large Retail	Refrigeration	Commissioning	sqft	New	0.05	3	\$0.47	16%	69%	\$0.17	1.76	1.65	AEG Research
Large Retail	Cooling	Retrocommissioning	sqft	New	0.15	3	\$0.30	0%	0%	\$0.11	0.00	0.00	AEG Research
Large Retail	Heating	Retrocommissioning	sqft	New	0.25	3	\$0.30	0%	0%	\$0.11	0.00	0.00	AEG Research
Large Retail	Ventilation	Retrocommissioning	sqft	New	0.08	3	\$0.30	0%	0%	\$0.11	0.00	0.00	AEG Research
Large Retail	Water Heating	Retrocommissioning	sqft	New	0.01	3	\$0.30	0%	0%	\$0.11	0.00	0.00	AEG Research
Large Retail	Interior Lighting	Retrocommissioning	sqft	New	0.16	3	\$0.30	0%	0%	\$0.11	0.00	0.00	AEG Research

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Large Retail	Exterior Lighting	Retrocommissioning	sqft	New	0.03	3	\$0.30	0%	0%	\$0.11	0.00	0.00	AEG Research
Large Retail	Refrigeration	Retrocommissioning	sqft	New	0.05	3	\$0.30	0%	0%	\$0.11	0.00	0.00	AEG Research
Large Retail	Interior Lighting	Fruit Storage - Lighting Controls	sqft	New	0.11	10	\$0.09	0%	0%	\$0.06	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Retail	Refrigeration	Fruit Storage Refrigeration Retrofit	sqft	New	0.17	10	\$1.09	0%	0%	\$0.87	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Retail	Refrigeration	Fruit Storage Refrigeration Tuneup	sqft	New	0.04	3	\$0.23	0%	0%	\$1.77	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Retail	Refrigeration	Fruit Storage Retrofit - CO2 Scrub	sqft	New	0.08	10	\$3.13	0%	0%	\$5.13	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Retail	Refrigeration	Fruit Storage Retrofit - Membrane	sqft	New	0.02	10	\$0.68	0%	0%	\$5.57	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Retail	Cooling	Insulation - Ceiling	sqft roof	Existing	0.13	45	\$1.28	15%	35%	\$0.17	163.15	169.40	Building Energy Simulation Tool
Small Retail	Heating	Insulation - Ceiling	sqft roof	Existing	0.39	45	\$1.28	15%	35%	\$0.17	170.58	175.21	Building Energy Simulation Tool
Small Retail	Ventilation	Insulation - Ceiling	sqft roof	Existing	0.07	45	\$1.28	15%	35%	\$0.17	86.63	101.44	Building Energy Simulation Tool
Small Retail	Cooling	Insulation - Ducting	sqft duct	Existing	0.28	20	\$0.84	15%	50%	\$0.00	148.69	155.13	Building Energy Simulation Tool
Small Retail	Heating	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.84	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Small Retail	Ventilation	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.84	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Small Retail	Cooling	Building Shell - Cool Roofs	sqft roof	Existing	0.27	20	\$0.78	45%	50%	\$10.00	77.30	87.26	Building Energy Simulation Tool
Small Retail	Heating	Building Shell - Cool Roofs	sqft roof	Existing	-0.22	20	\$0.78	45%	50%	\$10.00	-23.60	-26.16	Building Energy Simulation Tool
Small Retail	Ventilation	Building Shell - Cool Roofs	sqft roof	Existing	-0.04	20	\$0.78	45%	50%	\$10.00	-13.09	-16.04	Building Energy Simulation Tool
Small Retail	Cooling	Insulation - Wall Cavity	sqft wall	Existing	-0.06	45	\$0.78	15%	35%	\$0.03	-23.18	-23.86	Building Energy Simulation Tool
Small Retail	Heating	Insulation - Wall Cavity	sqft wall	Existing	1.74	45	\$0.78	15%	35%	\$0.03	232.06	235.81	Building Energy Simulation Tool
Small Retail	Ventilation	Insulation - Wall Cavity	sqft wall	Existing	0.30	45	\$0.78	15%	35%	\$0.03	119.06	137.09	Building Energy Simulation Tool

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Small Retail	Cooling	HVAC - Duct Repair and Sealing	tonCool	Existing	3.32	18	\$0.57	15%	50%	\$10.00	27.04	30.49	Building Energy Simulation Tool
Small Retail	Heating	HVAC - Duct Repair and Sealing	tonCool	Existing	-4.21	18	\$0.57	15%	50%	\$10.00	-12.37	-13.71	Building Energy Simulation Tool
Small Retail	Ventilation	HVAC - Duct Repair and Sealing	tonCool	Existing	-0.78	18	\$0.57	15%	50%	\$10.00	-6.86	-8.41	Building Energy Simulation Tool
Small Retail	Cooling	Windows - High Efficiency Glazing	sqft window	Existing	5.62	30	\$35.93	48%	48%	\$0.11	0.00	0.00	7th Power Plan
Small Retail	Heating	Windows - High Efficiency Glazing	sqft window	Existing	20.20	30	\$35.93	48%	48%	\$0.11	0.00	0.00	7th Power Plan
Small Retail	Ventilation	Windows - High Efficiency Glazing	sqft window	Existing	2.00	30	\$35.93	48%	48%	\$0.11	0.00	0.00	7th Power Plan
Small Retail	Cooling	Chiller - Chilled Water Reset	ChillCtrl	Existing	0.00	10	\$884.85	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Small Retail	Cooling	Chiller - Chilled Water Variable-Flow System	HP cool	Existing	0.00	15	\$332.55	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Small Retail	Cooling	Chiller - Variable Speed Fans	HP fan	Existing	0.00	15	\$208.36	15%	75%	\$0.00	0.00	0.00	New Jersey TRM
Small Retail	Cooling	Water-Cooled Chiller - Condenser Water Reset	ChillCtrl	Existing	0.00	10	\$884.85	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Small Retail	Cooling	HVAC - Economizer	HP cool	Existing	78.33	10	\$168.42	18%	75%	\$0.28	866.07	928.20	AEG-BEST
Small Retail	Heating	Space Heating - Heat Recovery Ventilator	CFM	Existing	1.69	14	\$5.08	3%	75%	\$0.33	663.76	698.41	7th Power Plan
Small Retail	Ventilation	Ventilation - ECM on VAV Boxes	sqft	Existing	0.18	18	\$0.25	15%	20%	\$0.12	59.13	68.85	7th Power Plan
Small Retail	Ventilation	Ventilation - Variable Speed Control	sqft	Existing	0.06	15	\$181.39	13%	25%	\$285.60	44.12	58.39	AEG-BEST
Small Retail	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.01	15	\$0.25	15%	25%	\$2.22	6.87	8.90	7th Power Plan
Small Retail	Cooling	Destratification Fans (HVLS)	Strat Fan	Existing	3,285.56	15	\$7,270.90	15%	15%	\$0.05	0.00	0.00	AEG Research
Small Retail	Heating	Destratification Fans (HVLS)	Strat Fan	Existing	10,919.37	15	\$7,270.90	15%	15%	\$0.05	0.00	0.00	AEG Research
Small Retail	Cooling	RTU - Maintenance	tonCool	Existing	36.06	3	\$35.00	15%	45%	\$0.29	205.11	238.78	AEG Research
Small Retail	Cooling	RTU - Advanced Controls	sqft	Existing	0.24	15	\$0.07	15%	45%	\$0.03	335.93	343.53	7th Power Plan
Small Retail	Cooling	RTU - Evaporative Precooler	tonCool	Existing	74.61	15	\$681.62	15%	75%	\$0.92	782.41	816.51	AEG Research
Small Retail	Cooling	Ductless Mini Split Heat Pump	tonCool	Existing	158.58	15	\$3,359.26	15%	75%	\$0.66	60.22	70.06	7th Power Plan

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Small Retail	Heating	Ductless Mini Split Heat Pump	tonCool	Existing	348.31	15	\$3,359.26	15%	75%	\$0.66	592.59	634.04	7th Power Plan
Small Retail	Cooling	Thermostat - WiFi/Interactive	sqft	Existing	0.46	5	\$0.66	30%	40%	\$0.09	275.80	302.52	7th Power Plan
Small Retail	Heating	Thermostat - WiFi/Interactive	sqft	Existing	0.81	5	\$0.66	30%	40%	\$0.09	175.17	185.29	7th Power Plan
Small Retail	Ventilation	Thermostat - WiFi/Interactive	sqft	Existing	0.14	5	\$0.66	30%	40%	\$0.09	92.48	110.54	7th Power Plan
Small Retail	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	Existing	21.57	10	\$8.35	25%	65%	\$0.03	26.53	49.04	Illinois TRM
Small Retail	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	Existing	22.33	10	\$11.64	25%	65%	-\$0.43	13.68	25.52	7th Power Plan
Small Retail	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	Existing	59.14	15	\$36.75	0%	0%	\$0.04	0.00	0.00	Hawaii TRM
Small Retail	Water Heating	Water Heater - Pipe Insulation	PipeFeet	Existing	88.46	15	\$14.88	16%	75%	\$0.01	68.29	115.96	AEG-BEST
Small Retail	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	Existing	14.63	4	\$144.04	25%	65%	-\$1.38	17.49	32.51	7th Power Plan
Small Retail	Water Heating	Water Heater - Thermostat Setback	WHunits	Existing	58.21	2	\$5.00	15%	75%	\$0.02	32.78	59.80	Illinois TRM
Small Retail	Water Heating	Water Heater - Solar System	PipeFeet	Existing	304.74	20	\$215.28	1%	30%	\$0.04	114.02	197.80	AEG-BEST
Small Retail	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.35	15	\$0.35	3%	23%	\$0.08	556.38	692.49	7th Power Plan
Small Retail	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.49	15	\$0.58	3%	23%	\$0.10	750.68	954.03	7th Power Plan
Small Retail	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	Existing	156.39	15	\$54.41	1%	3%	\$0.03	15.75	24.19	7th Power Plan
Small Retail	Interior Lighting	Interior Lighting - Timeclocks and Timers	occ sens	Existing	0.00	8	\$111.67	7%	15%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Small Retail	Interior Lighting	Interior Lighting - Skylights	1000 sqft	Existing	0.00	15	\$1,006.35	15%	25%	\$0.00	0.00	0.00	AEG Research
Small Retail	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	1000 sqft	Existing	238.16	16	\$1,807.69	5%	15%	\$0.59	145.47	221.08	7th Power Plan
Small Retail	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	Existing	2,489.25	11	\$30.80	15%	50%	\$0.00	564.05	778.85	Illinois TRM
Small Retail	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	ELtg Watts	Existing	1.65	8	\$0.63	15%	25%	\$0.05	207.77	317.44	7th Power Plan

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Small Retail	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	Existing	56.49	8	\$55.10	15%	25%	\$0.12	105.22	165.41	Pacific Gas and Electric Research
Small Retail	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	Existing	67.84	7	\$3,400.00	15%	30%	\$6.29	186.66	303.26	AEG Research
Small Retail	Refrigeration	Refrigeration - Anti-Sweat Heater	Fridge Feet	Existing	5.09	8	\$48.18	4%	25%	\$1.45	0.65	0.92	7th Power Plan
Small Retail	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	Existing	9.57	4	\$10.44	4%	25%	\$0.28	1.87	1.87	Michigan Energy Measures Database
Small Retail	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	Existing	70.54	16	\$165.20	4%	25%	\$0.24	2.93	2.84	7th Power Plan
Small Retail	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	Existing	8.50	15	\$335.85	0%	0%	\$4.12	0.00	0.00	7th Power Plan
Small Retail	Refrigeration	Refrigeration - Strip Curtain	Walkin Door	Existing	7.47	2	\$10.41	4%	25%	\$0.62	0.76	0.86	7th Power Plan
Small Retail	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	Existing	0.13	15	\$45.43	2%	13%	\$34.73	3.32	3.86	Annual Energy Outlook, 2015
Small Retail	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	Existing	2.70	15	\$313.82	2%	13%	\$11.57	5.80	6.72	Annual Energy Outlook, 2015
Small Retail	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	Existing	46.78	10	\$506.05	4%	25%	\$1.41	1.94	1.89	Vermont TRM
Small Retail	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	Existing	2.98	6	\$45.41	0%	0%	\$2.70	0.00	0.00	7th Power Plan
Small Retail	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	Existing	0.25	8	\$3.72	0%	0%	\$2.24	0.00	0.00	7th Power Plan
Small Retail	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	Existing	59.34	5	\$45.85	0%	0%	\$0.17	0.00	0.00	Illinois TRM
Small Retail	Refrigeration	Grocery - ECMs for Display Cases	Fridge Case	Existing	13.10	16	\$165.20	4%	25%	\$1.29	0.58	0.66	7th Power Plan
Small Retail	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	Existing	1,237.17	5	\$187.94	25%	75%	\$0.03	8.85	9.13	Illinois TRM
Small Retail	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	Existing	1,908.14	18	\$8,526.67	25%	50%	\$0.38	124.41	146.89	7th Power Plan
Small Retail	Office Equipment	Office Equipment - Smart Power Strips	Smart Strip	Existing	9.81	4	\$41.63	10%	50%	\$0.99	65.64	59.08	7th Power Plan
Small Retail	Cooling	Lodging - Guest Room Controls	LodgUnit	Existing	147.61	15	\$260.00	0%	0%	\$10.00	0.00	0.00	AEG-BEST
Small Retail	Heating	Lodging - Guest Room Controls	LodgUnit	Existing	-190.91	15	\$260.00	0%	0%	\$10.00	0.00	0.00	AEG-BEST

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Small Retail	Office Equipment	Data Center - Best Practice Measures	sqft	Existing	0.02	5	\$0.00	0%	0%	\$0.02	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Retail	Cooling	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.01	0%	0%	\$0.04	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Retail	Ventilation	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.01	0%	0%	\$0.04	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Retail	Interior Lighting	Data Center - Commercially Available Measures	sqft	Existing	0.03	8	\$0.01	0%	0%	\$0.04	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Retail	Office Equipment	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.01	0%	0%	\$0.04	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Retail	Cooling	Data Center - Cutting Edge Measures	sqft	Existing	0.04	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Retail	Office Equipment	Data Center - Cutting Edge Measures	sqft	Existing	0.00	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Retail	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	Existing	756.25	18	\$4,092.80	0%	0%	\$0.45	0.00	0.00	7th Power Plan
Small Retail	Miscellaneous	Pool Pump - Timer	perBldg	Existing	0.00	10	\$85.22	15%	75%	\$0.00	0.00	0.00	Ontario Power TRM
Small Retail	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	Existing	1,668.90	6	\$35.93	1%	3%	\$0.00	0.00	56.11	7th Power Plan
Small Retail	Cooling	Advanced New Construction Designs	sqft	Existing	0.83	25	\$4.11	0%	0%	\$0.09	0.00	0.00	AEG Research
Small Retail	Heating	Advanced New Construction Designs	sqft	Existing	1.43	25	\$4.11	0%	0%	\$0.09	0.00	0.00	AEG Research
Small Retail	Ventilation	Advanced New Construction Designs	sqft	Existing	0.25	25	\$4.11	0%	0%	\$0.09	0.00	0.00	AEG Research
Small Retail	Water Heating	Advanced New Construction Designs	sqft	Existing	0.13	25	\$4.11	0%	0%	\$0.09	0.00	0.00	AEG Research
Small Retail	Interior Lighting	Advanced New Construction Designs	sqft	Existing	0.71	25	\$4.11	0%	0%	\$0.09	0.00	0.00	AEG Research
Small Retail	Exterior Lighting	Advanced New Construction Designs	sqft	Existing	0.20	25	\$4.11	0%	0%	\$0.09	0.00	0.00	AEG Research
Small Retail	Cooling	Strategic Energy Management	sqft	Existing	0.12	3	\$0.17	0%	3%	\$0.09	22.51	26.41	AEG Research
Small Retail	Heating	Strategic Energy Management	sqft	Existing	0.20	3	\$0.17	0%	3%	\$0.09	13.70	15.74	AEG Research
Small Retail	Ventilation	Strategic Energy Management	sqft	Existing	0.04	3	\$0.17	0%	3%	\$0.09	7.66	9.93	AEG Research

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Small Retail	Water Heating	Strategic Energy Management	sqft	Existing	0.02	3	\$0.17	0%	3%	\$0.09	2.29	4.23	AEG Research
Small Retail	Interior Lighting	Strategic Energy Management	sqft	Existing	0.11	3	\$0.17	0%	3%	\$0.09	19.40	31.49	AEG Research
Small Retail	Exterior Lighting	Strategic Energy Management	sqft	Existing	0.03	3	\$0.17	0%	3%	\$0.09	5.71	9.11	AEG Research
Small Retail	Refrigeration	Strategic Energy Management	sqft	Existing	0.00	3	\$0.17	0%	3%	\$0.09	0.65	0.41	AEG Research
Small Retail	Office Equipment	Strategic Energy Management	sqft	Existing	0.01	3	\$0.17	0%	3%	\$0.09	3.03	2.73	AEG Research
Small Retail	Cooling	Commissioning	sqft	Existing	0.16	3	\$0.43	0%	0%	\$0.18	0.00	0.00	AEG Research
Small Retail	Heating	Commissioning	sqft	Existing	0.27	3	\$0.43	0%	0%	\$0.18	0.00	0.00	AEG Research
Small Retail	Ventilation	Commissioning	sqft	Existing	0.05	3	\$0.43	0%	0%	\$0.18	0.00	0.00	AEG Research
Small Retail	Water Heating	Commissioning	sqft	Existing	0.01	3	\$0.43	0%	0%	\$0.18	0.00	0.00	AEG Research
Small Retail	Interior Lighting	Commissioning	sqft	Existing	0.12	3	\$0.43	0%	0%	\$0.18	0.00	0.00	AEG Research
Small Retail	Exterior Lighting	Commissioning	sqft	Existing	0.04	3	\$0.43	0%	0%	\$0.18	0.00	0.00	AEG Research
Small Retail	Refrigeration	Commissioning	sqft	Existing	0.00	3	\$0.43	0%	0%	\$0.18	0.00	0.00	AEG Research
Small Retail	Cooling	Retrocommissioning	sqft	Existing	0.16	3	\$0.27	16%	69%	\$0.12	549.88	645.52	AEG Research
Small Retail	Heating	Retrocommissioning	sqft	Existing	0.28	3	\$0.27	16%	69%	\$0.12	334.77	384.83	AEG Research
Small Retail	Ventilation	Retrocommissioning	sqft	Existing	0.05	3	\$0.27	16%	69%	\$0.12	187.19	242.80	AEG Research
Small Retail	Water Heating	Retrocommissioning	sqft	Existing	0.01	3	\$0.27	16%	69%	\$0.12	18.68	34.50	AEG Research
Small Retail	Interior Lighting	Retrocommissioning	sqft	Existing	0.13	3	\$0.27	16%	69%	\$0.12	394.91	641.46	AEG Research
Small Retail	Exterior Lighting	Retrocommissioning	sqft	Existing	0.04	3	\$0.27	16%	69%	\$0.12	116.27	185.69	AEG Research
Small Retail	Refrigeration	Retrocommissioning	sqft	Existing	0.01	3	\$0.27	16%	69%	\$0.12	26.41	16.57	AEG Research
Small Retail	Interior Lighting	Fruit Storage - Lighting Controls	sqft	Existing	0.09	10	\$0.09	0%	0%	\$0.10	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Retail	Refrigeration	Fruit Storage Refrigeration Retrofit	sqft	Existing	0.01	10	\$1.09	0%	0%	\$9.11	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Retail	Refrigeration	Fruit Storage Refrigeration Tuneup	sqft	Existing	0.00	3	\$0.23	0%	0%	\$18.68	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx

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Small Retail	Refrigeration	Fruit Storage Retrofit - CO2 Scrub	sqft	Existing	0.01	10	\$3.13	0%	0%	\$54.03	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Retail	Refrigeration	Fruit Storage Retrofit - Membrane	sqft	Existing	0.00	10	\$0.68	0%	0%	\$58.63	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Retail	Cooling	Insulation - Ceiling	sqft roof	New	0.00	45	\$1.28	15%	50%	\$0.25	0.00	0.00	Building Energy Simulation Tool
Small Retail	Heating	Insulation - Ceiling	sqft roof	New	0.34	45	\$1.28	15%	50%	\$0.25	63.90	64.17	Building Energy Simulation Tool
Small Retail	Ventilation	Insulation - Ceiling	sqft roof	New	0.04	45	\$1.28	15%	50%	\$0.25	29.93	32.02	Building Energy Simulation Tool
Small Retail	Cooling	Insulation - Ducting	sqft duct	New	0.44	20	\$0.84	15%	50%	\$0.13	59.02	59.39	Building Energy Simulation Tool
Small Retail	Heating	Insulation - Ducting	sqft duct	New	0.13	20	\$0.84	15%	50%	\$0.13	6.07	6.12	Building Energy Simulation Tool
Small Retail	Ventilation	Insulation - Ducting	sqft duct	New	0.02	20	\$0.84	15%	50%	\$0.13	2.84	3.05	Building Energy Simulation Tool
Small Retail	Cooling	Building Shell - Cool Roofs	sqft roof	New	0.09	20	\$0.78	45%	50%	\$10.00	6.93	7.05	Building Energy Simulation Tool
Small Retail	Heating	Building Shell - Cool Roofs	sqft roof	New	-0.09	20	\$0.78	45%	50%	\$10.00	-2.33	-2.35	Building Energy Simulation Tool
Small Retail	Ventilation	Building Shell - Cool Roofs	sqft roof	New	-0.01	20	\$0.78	45%	50%	\$10.00	-1.11	-1.21	Building Energy Simulation Tool
Small Retail	Cooling	Insulation - Wall Cavity	sqft wall	New	0.00	45	\$0.78	15%	50%	\$0.16	-0.32	-0.32	Building Energy Simulation Tool
Small Retail	Heating	Insulation - Wall Cavity	sqft wall	New	0.32	45	\$0.78	15%	50%	\$0.16	18.23	18.28	Building Energy Simulation Tool
Small Retail	Ventilation	Insulation - Wall Cavity	sqft wall	New	0.04	45	\$0.78	15%	50%	\$0.16	8.58	9.15	Building Energy Simulation Tool
Small Retail	Cooling	HVAC - Duct Repair and Sealing	tonCool	New	3.71	18	\$0.57	15%	50%	\$0.00	7.67	7.71	Building Energy Simulation Tool
Small Retail	Heating	HVAC - Duct Repair and Sealing	tonCool	New	14.98	18	\$0.57	15%	50%	\$0.00	10.92	10.96	Building Energy Simulation Tool
Small Retail	Ventilation	HVAC - Duct Repair and Sealing	tonCool	New	1.86	18	\$0.57	15%	50%	\$0.00	5.14	5.49	Building Energy Simulation Tool
Small Retail	Cooling	Windows - High Efficiency Glazing	sqft window	New	5.20	30	\$35.93	66%	66%	\$0.12	0.00	0.00	7th Power Plan
Small Retail	Heating	Windows - High Efficiency Glazing	sqft window	New	17.68	30	\$35.93	66%	66%	\$0.12	0.00	0.00	7th Power Plan

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Small Retail	Ventilation	Windows - High Efficiency Glazing	sqft window	New	1.26	30	\$35.93	66%	66%	\$0.12	0.00	0.00	7th Power Plan
Small Retail	Cooling	Chiller - Chilled Water Reset	ChillCtrl	New	0.00	10	\$884.85	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Small Retail	Cooling	Chiller - Chilled Water Variable-Flow System	HP cool	New	0.00	15	\$332.55	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Small Retail	Cooling	Chiller - Variable Speed Fans	HP fan	New	0.00	15	\$208.36	15%	75%	\$0.00	0.00	0.00	New Jersey TRM
Small Retail	Cooling	Water-Cooled Chiller - Condenser Water Reset	ChillCtrl	New	0.00	10	\$884.85	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Small Retail	Cooling	HVAC - Economizer	HP cool	New	74.91	10	\$168.42	18%	75%	\$0.28	80.41	83.89	AEG-BEST
Small Retail	Heating	Space Heating - Heat Recovery Ventilator	CFM	New	1.47	14	\$5.08	6%	75%	\$0.38	65.72	67.94	7th Power Plan
Small Retail	Ventilation	Ventilation - ECM on VAV Boxes	sqft	New	0.11	18	\$0.25	15%	20%	\$0.14	11.25	12.04	7th Power Plan
Small Retail	Ventilation	Ventilation - Variable Speed Control	sqft	New	0.04	15	\$181.39	19%	25%	\$346.45	2.20	2.54	AEG-BEST
Small Retail	Ventilation	Ventilation - Demand Controlled	sqft	New	0.01	15	\$0.25	15%	25%	\$2.69	0.70	0.81	7th Power Plan
Small Retail	Cooling	Destratification Fans (HVLS)	Strat Fan	New	3,037.33	15	\$7,270.90	15%	15%	\$0.06	0.00	0.00	AEG Research
Small Retail	Heating	Destratification Fans (HVLS)	Strat Fan	New	9,633.02	15	\$7,270.90	15%	15%	\$0.06	0.00	0.00	AEG Research
Small Retail	Cooling	RTU - Maintenance	tonCool	New	35.49	3	\$35.00	15%	45%	\$0.30	4.06	4.42	AEG Research
Small Retail	Cooling	RTU - Advanced Controls	sqft	New	0.23	15	\$0.07	15%	45%	\$0.03	71.96	72.52	7th Power Plan
Small Retail	Cooling	RTU - Evaporative Precooler	tonCool	New	72.36	15	\$681.62	15%	75%	\$0.94	212.73	215.08	AEG Research
Small Retail	Cooling	Ductless Mini Split Heat Pump	tonCool	New	134.71	15	\$3,359.26	15%	75%	\$0.73	8.90	9.29	7th Power Plan
Small Retail	Heating	Ductless Mini Split Heat Pump	tonCool	New	334.10	15	\$3,359.26	15%	75%	\$0.73	93.70	96.09	7th Power Plan
Small Retail	Cooling	Thermostat - WiFi/Interactive	sqft	New	0.44	5	\$0.66	30%	40%	\$0.10	8.26	8.84	7th Power Plan
Small Retail	Heating	Thermostat - WiFi/Interactive	sqft	New	0.72	5	\$0.66	30%	40%	\$0.10	4.84	5.04	7th Power Plan
Small Retail	Ventilation	Thermostat - WiFi/Interactive	sqft	New	0.09	5	\$0.66	30%	40%	\$0.10	2.27	2.72	7th Power Plan
Small Retail	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	New	14.60	10	\$8.35	25%	65%	\$0.03	2.13	3.00	Illinois TRM

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Small Retail	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	New	15.23	10	\$11.64	25%	65%	-\$0.43	1.11	1.57	7th Power Plan
Small Retail	Water Heating	Water Heater - High Efficiency Circulation Pump	WHUnits	New	40.03	15	\$36.75	0%	0%	\$0.04	0.00	0.00	Hawaii TRM
Small Retail	Water Heating	Water Heater - Pipe Insulation	PipeFeet	New	57.71	15	\$14.88	1%	75%	\$0.01	10.35	13.76	AEG-BEST
Small Retail	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	New	10.08	4	\$144.04	25%	65%	-\$1.38	0.69	1.05	7th Power Plan
Small Retail	Water Heating	Water Heater - Thermostat Setback	WHUnits	New	39.87	2	\$5.00	15%	75%	\$0.02	0.36	0.58	Illinois TRM
Small Retail	Water Heating	Water Heater - Solar System	PipeFeet	New	201.15	20	\$215.28	1%	30%	\$0.04	14.63	19.29	AEG-BEST
Small Retail	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.30	15	\$0.35	11%	23%	\$0.08	140.82	156.54	7th Power Plan
Small Retail	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.41	15	\$0.58	11%	23%	\$0.10	193.62	215.92	7th Power Plan
Small Retail	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	New	131.07	15	\$54.41	1%	3%	\$0.03	1.57	1.90	7th Power Plan
Small Retail	Interior Lighting	Interior Lighting - Timeclocks and Timers	occ sens	New	0.00	8	\$111.67	7%	15%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Small Retail	Interior Lighting	Interior Lighting - Skylights	1000 sqft	New	0.00	15	\$1,006.35	18%	25%	\$0.00	0.00	0.00	AEG Research
Small Retail	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	1000 sqft	New	198.25	16	\$1,807.69	5%	15%	\$0.60	19.04	22.59	7th Power Plan
Small Retail	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	New	2,068.53	11	\$30.80	15%	50%	\$0.00	57.07	67.30	Illinois TRM
Small Retail	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	ELtg Watts	New	1.23	8	\$0.63	15%	25%	\$0.05	15.24	19.89	7th Power Plan
Small Retail	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	New	43.10	8	\$55.10	15%	25%	\$0.12	8.04	10.45	Pacific Gas and Electric Research
Small Retail	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	New	52.61	7	\$3,400.00	15%	30%	\$6.63	12.86	17.24	AEG Research
Small Retail	Refrigeration	Refrigeration - Anti-Sweat Heater	Fridge Feet	New	3.73	8	\$48.18	4%	25%	\$2.00	0.04	0.04	7th Power Plan
Small Retail	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	New	8.58	4	\$10.44	4%	25%	\$0.32	0.07	0.05	Michigan Energy Measures Database
Small Retail	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	New	63.98	16	\$165.20	4%	25%	\$0.27	0.43	0.38	7th Power Plan

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Small Retail	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	New	8.03	15	\$335.85	0%	0%	\$4.44	0.00	0.00	7th Power Plan
Small Retail	Refrigeration	Refrigeration - Strip Curtain	Walkin Door	New	6.79	2	\$10.41	4%	25%	\$0.73	0.01	0.01	7th Power Plan
Small Retail	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	New	0.13	15	\$45.43	2%	13%	\$37.35	0.43	0.43	Annual Energy Outlook, 2015
Small Retail	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	New	2.65	15	\$313.82	2%	13%	\$12.45	0.75	0.75	Annual Energy Outlook, 2015
Small Retail	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	New	42.75	10	\$506.05	4%	25%	\$1.57	0.21	0.18	Vermont TRM
Small Retail	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	New	2.88	6	\$45.41	0%	0%	\$2.96	0.00	0.00	7th Power Plan
Small Retail	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	New	0.23	8	\$3.72	0%	0%	\$2.45	0.00	0.00	7th Power Plan
Small Retail	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	New	56.29	5	\$45.85	0%	0%	\$0.18	0.00	0.00	Illinois TRM
Small Retail	Refrigeration	Grocery - ECMs for Display Cases	Fridge Case	New	12.09	16	\$165.20	4%	25%	\$1.41	0.07	0.07	7th Power Plan
Small Retail	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	New	1,213.07	5	\$187.94	25%	75%	\$0.03	0.32	0.32	Illinois TRM
Small Retail	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	New	1,191.56	18	\$8,526.67	25%	50%	\$0.45	23.29	25.26	7th Power Plan
Small Retail	Office Equipment	Office Equipment - Smart Power Strips	Smart Strip	New	9.20	4	\$41.63	10%	50%	\$1.04	2.19	1.95	7th Power Plan
Small Retail	Cooling	Lodging - Guest Room Controls	LodgUnit	New	129.67	15	\$260.00	0%	0%	\$10.00	0.00	0.00	AEG-BEST
Small Retail	Heating	Lodging - Guest Room Controls	LodgUnit	New	-191.06	15	\$260.00	0%	0%	\$10.00	0.00	0.00	AEG-BEST
Small Retail	Office Equipment	Data Center - Best Practice Measures	sqft	New	0.02	5	\$0.00	0%	0%	\$0.02	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Retail	Cooling	Data Center - Commercially Available Measures	sqft	New	0.01	8	\$0.01	0%	0%	\$0.04	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Retail	Ventilation	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.01	0%	0%	\$0.04	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Retail	Interior Lighting	Data Center - Commercially Available Measures	sqft	New	0.02	8	\$0.01	0%	0%	\$0.04	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Retail	Office Equipment	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.01	0%	0%	\$0.04	0.00	0.00	com-datacenters-7p_v5p.xlsx

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Small Retail	Cooling	Data Center - Cutting Edge Measures	sqft	New	0.03	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Retail	Office Equipment	Data Center - Cutting Edge Measures	sqft	New	0.00	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Retail	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	New	474.81	18	\$4,092.80	0%	0%	\$0.54	0.00	0.00	7th Power Plan
Small Retail	Miscellaneous	Pool Pump - Timer	perBldg	New	0.00	10	\$85.22	15%	75%	\$0.00	0.00	0.00	Ontario Power TRM
Small Retail	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	New	1,668.90	6	\$35.93	1%	3%	\$0.00	0.00	2.86	7th Power Plan
Small Retail	Cooling	Advanced New Construction Designs	sqft	New	0.77	25	\$4.11	10%	25%	\$0.10	201.27	202.86	AEG Research
Small Retail	Heating	Advanced New Construction Designs	sqft	New	1.26	25	\$4.11	10%	25%	\$0.10	115.49	116.58	AEG Research
Small Retail	Ventilation	Advanced New Construction Designs	sqft	New	0.16	25	\$4.11	10%	25%	\$0.10	54.10	58.44	AEG Research
Small Retail	Water Heating	Advanced New Construction Designs	sqft	New	0.09	25	\$4.11	10%	25%	\$0.10	21.06	23.98	AEG Research
Small Retail	Interior Lighting	Advanced New Construction Designs	sqft	New	0.60	25	\$4.11	10%	25%	\$0.10	171.12	184.43	AEG Research
Small Retail	Exterior Lighting	Advanced New Construction Designs	sqft	New	0.16	25	\$4.11	10%	25%	\$0.10	46.38	49.42	AEG Research
Small Retail	Cooling	Strategic Energy Management	sqft	New	0.11	3	\$0.15	0%	3%	\$0.09	0.51	0.55	AEG Research
Small Retail	Heating	Strategic Energy Management	sqft	New	0.18	3	\$0.15	0%	3%	\$0.09	0.29	0.31	AEG Research
Small Retail	Ventilation	Strategic Energy Management	sqft	New	0.02	3	\$0.15	0%	3%	\$0.09	0.14	0.17	AEG Research
Small Retail	Water Heating	Strategic Energy Management	sqft	New	0.01	3	\$0.15	0%	3%	\$0.09	0.06	0.09	AEG Research
Small Retail	Interior Lighting	Strategic Energy Management	sqft	New	0.09	3	\$0.15	0%	3%	\$0.09	0.45	0.65	AEG Research
Small Retail	Exterior Lighting	Strategic Energy Management	sqft	New	0.02	3	\$0.15	0%	3%	\$0.09	0.12	0.18	AEG Research
Small Retail	Refrigeration	Strategic Energy Management	sqft	New	0.00	3	\$0.15	0%	3%	\$0.09	0.01	0.01	AEG Research
Small Retail	Office Equipment	Strategic Energy Management	sqft	New	0.01	3	\$0.15	0%	3%	\$0.09	0.06	0.06	AEG Research
Small Retail	Cooling	Commissioning	sqft	New	0.16	3	\$0.38	16%	69%	\$0.18	12.53	13.54	AEG Research

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Small Retail	Heating	Commissioning	sqft	New	0.26	3	\$0.38	16%	69%	\$0.18	7.21	7.66	AEG Research
Small Retail	Ventilation	Commissioning	sqft	New	0.03	3	\$0.38	16%	69%	\$0.18	3.45	4.22	AEG Research
Small Retail	Water Heating	Commissioning	sqft	New	0.01	3	\$0.38	16%	69%	\$0.18	0.45	0.72	AEG Research
Small Retail	Interior Lighting	Commissioning	sqft	New	0.10	3	\$0.38	16%	69%	\$0.18	9.19	13.27	AEG Research
Small Retail	Exterior Lighting	Commissioning	sqft	New	0.03	3	\$0.38	16%	69%	\$0.18	2.50	3.72	AEG Research
Small Retail	Refrigeration	Commissioning	sqft	New	0.00	3	\$0.38	16%	69%	\$0.18	0.49	0.27	AEG Research
Small Retail	Cooling	Retrocommissioning	sqft	New	0.16	3	\$0.24	0%	0%	\$0.11	0.00	0.00	AEG Research
Small Retail	Heating	Retrocommissioning	sqft	New	0.26	3	\$0.24	0%	0%	\$0.11	0.00	0.00	AEG Research
Small Retail	Ventilation	Retrocommissioning	sqft	New	0.03	3	\$0.24	0%	0%	\$0.11	0.00	0.00	AEG Research
Small Retail	Water Heating	Retrocommissioning	sqft	New	0.01	3	\$0.24	0%	0%	\$0.11	0.00	0.00	AEG Research
Small Retail	Interior Lighting	Retrocommissioning	sqft	New	0.10	3	\$0.24	0%	0%	\$0.11	0.00	0.00	AEG Research
Small Retail	Exterior Lighting	Retrocommissioning	sqft	New	0.03	3	\$0.24	0%	0%	\$0.11	0.00	0.00	AEG Research
Small Retail	Refrigeration	Retrocommissioning	sqft	New	0.00	3	\$0.24	0%	0%	\$0.11	0.00	0.00	AEG Research
Small Retail	Interior Lighting	Fruit Storage - Lighting Controls	sqft	New	0.07	10	\$0.09	0%	0%	\$0.10	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Retail	Refrigeration	Fruit Storage Refrigeration Retrofit	sqft	New	0.01	10	\$1.09	0%	0%	\$11.18	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Retail	Refrigeration	Fruit Storage Refrigeration Tuneup	sqft	New	0.00	3	\$0.23	0%	0%	\$22.93	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Retail	Refrigeration	Fruit Storage Retrofit - CO2 Scrub	sqft	New	0.01	10	\$3.13	0%	0%	\$66.31	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Retail	Refrigeration	Fruit Storage Retrofit - Membrane	sqft	New	0.00	10	\$0.68	0%	0%	\$71.95	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Restaurant	Cooling	Insulation - Ceiling	sqft roof	Existing	0.02	45	\$1.28	15%	35%	\$0.19	4.57	4.71	Building Energy Simulation Tool
Restaurant	Heating	Insulation - Ceiling	sqft roof	Existing	0.37	45	\$1.28	15%	35%	\$0.19	26.95	27.43	Building Energy Simulation Tool
Restaurant	Ventilation	Insulation - Ceiling	sqft roof	Existing	0.14	45	\$1.28	15%	35%	\$0.19	32.55	36.78	Building Energy Simulation Tool
Restaurant	Cooling	Insulation - Ducting	sqft duct	Existing	0.02	20	\$0.84	15%	35%	\$0.00	0.91	1.02	Building Energy Simulation Tool

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Restaurant	Heating	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.84	15%	35%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Restaurant	Ventilation	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.84	15%	35%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Restaurant	Cooling	Building Shell - Cool Roofs	sqft roof	Existing	0.13	20	\$0.78	45%	50%	\$10.00	6.59	7.33	Building Energy Simulation Tool
Restaurant	Heating	Building Shell - Cool Roofs	sqft roof	Existing	-0.20	20	\$0.78	45%	50%	\$10.00	-3.50	-3.76	Building Energy Simulation Tool
Restaurant	Ventilation	Building Shell - Cool Roofs	sqft roof	Existing	-0.08	20	\$0.78	45%	50%	\$10.00	-4.41	-5.18	Building Energy Simulation Tool
Restaurant	Cooling	Insulation - Wall Cavity	sqft wall	Existing	-0.26	45	\$0.78	15%	35%	\$0.09	-32.81	-33.59	Building Energy Simulation Tool
Restaurant	Heating	Insulation - Wall Cavity	sqft wall	Existing	0.67	45	\$0.78	15%	35%	\$0.09	29.90	30.17	Building Energy Simulation Tool
Restaurant	Ventilation	Insulation - Wall Cavity	sqft wall	Existing	0.27	45	\$0.78	15%	35%	\$0.09	37.30	41.03	Building Energy Simulation Tool
Restaurant	Cooling	HVAC - Duct Repair and Sealing	tonCool	Existing	-1.86	18	\$0.57	15%	50%	\$10.00	-3.72	-4.14	Building Energy Simulation Tool
Restaurant	Heating	HVAC - Duct Repair and Sealing	tonCool	Existing	-6.53	18	\$0.57	15%	50%	\$10.00	-4.63	-4.98	Building Energy Simulation Tool
Restaurant	Ventilation	HVAC - Duct Repair and Sealing	tonCool	Existing	-2.71	18	\$0.57	15%	50%	\$10.00	-5.99	-6.99	Building Energy Simulation Tool
Restaurant	Cooling	Windows - High Efficiency Glazing	sqft window	Existing	4.12	30	\$35.93	48%	48%	\$0.18	0.00	0.00	7th Power Plan
Restaurant	Heating	Windows - High Efficiency Glazing	sqft window	Existing	10.55	30	\$35.93	48%	48%	\$0.18	0.00	0.00	7th Power Plan
Restaurant	Ventilation	Windows - High Efficiency Glazing	sqft window	Existing	2.39	30	\$35.93	48%	48%	\$0.18	0.00	0.00	7th Power Plan
Restaurant	Cooling	Chiller - Chilled Water Reset	ChillCtrl	Existing	0.00	10	\$884.85	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Restaurant	Cooling	Chiller - Chilled Water Variable-Flow System	HP cool	Existing	0.00	15	\$332.55	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Restaurant	Cooling	Chiller - Variable Speed Fans	HP fan	Existing	0.00	15	\$208.36	15%	75%	\$0.00	0.00	0.00	New Jersey TRM
Restaurant	Cooling	Water-Cooled Chiller - Condenser Water Reset	ChillCtrl	Existing	0.00	10	\$884.85	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Restaurant	Cooling	HVAC - Economizer	HP cool	Existing	72.07	10	\$168.42	18%	75%	\$0.31	194.79	203.93	AEG-BEST

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Restaurant	Heating	Space Heating - Heat Recovery Ventilator	CFM	Existing	0.52	14	\$5.08	3%	75%	\$1.07	103.14	108.45	7th Power Plan
Restaurant	Ventilation	Ventilation - ECM on VAV Boxes	sqft	Existing	0.40	18	\$0.25	15%	20%	\$0.06	22.71	25.21	7th Power Plan
Restaurant	Ventilation	Ventilation - Variable Speed Control	sqft	Existing	0.12	15	\$181.39	13%	50%	\$140.35	53.43	66.35	AEG-BEST
Restaurant	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.02	15	\$0.25	15%	25%	\$1.09	2.64	3.22	7th Power Plan
Restaurant	Cooling	Destratification Fans (HVLS)	Strat Fan	Existing	4,341.66	15	\$7,270.90	15%	15%	\$0.05	0.00	0.00	AEG Research
Restaurant	Heating	Destratification Fans (HVLS)	Strat Fan	Existing	10,359.40	15	\$7,270.90	15%	15%	\$0.05	0.00	0.00	AEG Research
Restaurant	Cooling	RTU - Maintenance	tonCool	Existing	32.88	3	\$35.00	15%	45%	\$0.33	52.14	59.82	AEG Research
Restaurant	Cooling	RTU - Advanced Controls	sqft	Existing	0.31	15	\$0.07	15%	45%	\$0.02	84.26	85.84	7th Power Plan
Restaurant	Cooling	RTU - Evaporative Precooler	tonCool	Existing	67.40	15	\$681.62	15%	75%	\$1.02	195.87	203.95	AEG Research
Restaurant	Cooling	Ductless Mini Split Heat Pump	tonCool	Existing	159.84	15	\$3,359.26	15%	75%	\$0.95	17.50	20.26	7th Power Plan
Restaurant	Heating	Ductless Mini Split Heat Pump	tonCool	Existing	189.30	15	\$3,359.26	15%	75%	\$0.95	14.92	15.89	7th Power Plan
Restaurant	Cooling	Thermostat - WiFi/Interactive	sqft	Existing	0.63	5	\$0.66	30%	40%	\$0.08	66.26	69.46	7th Power Plan
Restaurant	Heating	Thermostat - WiFi/Interactive	sqft	Existing	0.80	5	\$0.66	30%	40%	\$0.08	29.41	30.18	7th Power Plan
Restaurant	Ventilation	Thermostat - WiFi/Interactive	sqft	Existing	0.32	5	\$0.66	30%	40%	\$0.08	35.52	40.47	7th Power Plan
Restaurant	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	Existing	65.84	10	\$8.35	25%	65%	\$0.01	36.60	67.64	Illinois TRM
Restaurant	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	Existing	68.17	10	\$11.64	25%	65%	-\$0.14	18.87	35.19	7th Power Plan
Restaurant	Water Heating	Water Heater - High Efficiency Circulation Pump	WHUnits	Existing	58.46	15	\$36.75	0%	0%	\$0.04	0.00	0.00	Hawaii TRM
Restaurant	Water Heating	Water Heater - Pipe Insulation	PipeFeet	Existing	270.12	15	\$14.88	16%	75%	\$0.00	94.26	160.22	AEG-BEST
Restaurant	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	Existing	45.04	4	\$144.04	25%	65%	-\$0.45	24.43	45.13	7th Power Plan
Restaurant	Water Heating	Water Heater - Thermostat Setback	WHUnits	Existing	58.57	2	\$5.00	15%	75%	\$0.02	45.22	82.57	Illinois TRM
Restaurant	Water Heating	Water Heater - Solar System	PipeFeet	Existing	929.81	20	\$215.28	1%	30%	\$0.01	157.23	273.05	AEG-BEST

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Restaurant	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.51	15	\$0.35	3%	23%	\$0.06	147.00	176.85	7th Power Plan
Restaurant	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.71	15	\$0.58	3%	23%	\$0.07	199.29	244.13	7th Power Plan
Restaurant	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	Existing	96.91	15	\$54.41	1%	3%	\$0.05	4.77	7.33	7th Power Plan
Restaurant	Interior Lighting	Interior Lighting - Timeclocks and Timers	occ sens	Existing	0.00	8	\$111.67	7%	15%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Restaurant	Interior Lighting	Interior Lighting - Skylights	1000 sqft	Existing	0.00	15	\$1,006.35	15%	25%	\$0.00	0.00	0.00	AEG Research
Restaurant	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	1000 sqft	Existing	227.91	16	\$1,807.69	5%	15%	\$0.63	25.90	36.61	7th Power Plan
Restaurant	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	Existing	2,344.72	11	\$30.80	15%	50%	\$0.00	97.77	127.89	Illinois TRM
Restaurant	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	ELtg Watts	Existing	1.16	8	\$0.63	15%	25%	\$0.07	93.91	141.23	7th Power Plan
Restaurant	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	Existing	63.85	8	\$55.10	15%	25%	\$0.10	47.56	73.57	Pacific Gas and Electric Research
Restaurant	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	Existing	76.68	7	\$3,400.00	15%	30%	\$5.53	84.39	134.86	AEG Research
Restaurant	Refrigeration	Refrigeration - Anti-Sweat Heater	Fridge Feet	Existing	62.57	8	\$48.18	11%	75%	\$0.11	10.92	16.69	7th Power Plan
Restaurant	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	Existing	307.56	4	\$10.44	5%	35%	\$0.01	155.93	212.86	Michigan Energy Measures Database
Restaurant	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	Existing	2,098.55	16	\$165.20	11%	75%	\$0.01	719.70	928.41	7th Power Plan
Restaurant	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	Existing	86.57	15	\$335.85	0%	0%	\$0.36	0.00	0.00	7th Power Plan
Restaurant	Refrigeration	Refrigeration - Strip Curtain	WalkIn Door	Existing	97.04	2	\$10.41	11%	75%	\$0.05	273.45	367.98	7th Power Plan
Restaurant	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	Existing	1.23	15	\$45.43	6%	38%	\$3.07	295.27	401.25	Annual Energy Outlook, 2015
Restaurant	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	Existing	28.11	15	\$313.82	6%	38%	\$1.02	579.20	732.52	Annual Energy Outlook, 2015
Restaurant	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	Existing	1,312.78	10	\$506.05	11%	75%	\$0.05	444.78	597.71	Vermont TRM
Restaurant	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	Existing	37.59	6	\$45.41	0%	0%	\$0.20	0.00	0.00	7th Power Plan

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Restaurant	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	Existing	3.11	8	\$3.72	0%	0%	\$0.16	0.00	0.00	7th Power Plan
Restaurant	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	Existing	771.37	5	\$45.85	0%	0%	\$0.01	0.00	0.00	Illinois TRM
Restaurant	Refrigeration	Grocery - ECMs for Display Cases	Fridge Case	Existing	163.87	16	\$165.20	11%	75%	\$0.09	10.13	12.09	7th Power Plan
Restaurant	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	Existing	1,108.86	5	\$187.94	25%	75%	\$0.03	290.80	324.84	Illinois TRM
Restaurant	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	Existing	4,217.11	18	\$8,526.67	25%	50%	\$0.18	48.51	54.15	7th Power Plan
Restaurant	Office Equipment	Office Equipment - Smart Power Strips	Smart Strip	Existing	28.19	4	\$41.63	10%	50%	\$0.34	33.94	29.25	7th Power Plan
Restaurant	Cooling	Lodging - Guest Room Controls	LodgUnit	Existing	242.69	15	\$260.00	0%	0%	\$0.37	0.00	0.00	AEG-BEST
Restaurant	Heating	Lodging - Guest Room Controls	LodgUnit	Existing	-171.50	15	\$260.00	0%	0%	\$0.37	0.00	0.00	AEG-BEST
Restaurant	Office Equipment	Data Center - Best Practice Measures	sqft	Existing	0.07	5	\$0.01	0%	0%	\$0.02	0.00	0.00	com-datacenters-7p_v5p.xlsx
Restaurant	Cooling	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.02	0%	0%	\$0.04	0.00	0.00	com-datacenters-7p_v5p.xlsx
Restaurant	Ventilation	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.02	0%	0%	\$0.04	0.00	0.00	com-datacenters-7p_v5p.xlsx
Restaurant	Interior Lighting	Data Center - Commercially Available Measures	sqft	Existing	0.05	8	\$0.02	0%	0%	\$0.04	0.00	0.00	com-datacenters-7p_v5p.xlsx
Restaurant	Office Equipment	Data Center - Commercially Available Measures	sqft	Existing	0.02	8	\$0.02	0%	0%	\$0.04	0.00	0.00	com-datacenters-7p_v5p.xlsx
Restaurant	Cooling	Data Center - Cutting Edge Measures	sqft	Existing	0.05	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Restaurant	Office Equipment	Data Center - Cutting Edge Measures	sqft	Existing	0.01	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Restaurant	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	Existing	607.52	18	\$4,092.80	0%	0%	\$0.60	0.00	0.00	7th Power Plan
Restaurant	Miscellaneous	Pool Pump - Timer	perBldg	Existing	0.00	10	\$85.22	15%	75%	\$0.00	0.00	0.00	Ontario Power TRM
Restaurant	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	Existing	2,060.85	6	\$35.93	1%	3%	\$0.00	0.00	33.22	7th Power Plan
Restaurant	Cooling	Advanced New Construction Designs	sqft	Existing	1.11	25	\$4.11	0%	0%	\$0.05	0.00	0.00	AEG Research

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Restaurant	Heating	Advanced New Construction Designs	sqft	Existing	1.37	25	\$4.11	0%	0%	\$0.05	0.00	0.00	AEG Research
Restaurant	Ventilation	Advanced New Construction Designs	sqft	Existing	0.54	25	\$4.11	0%	0%	\$0.05	0.00	0.00	AEG Research
Restaurant	Water Heating	Advanced New Construction Designs	sqft	Existing	1.11	25	\$4.11	0%	0%	\$0.05	0.00	0.00	AEG Research
Restaurant	Interior Lighting	Advanced New Construction Designs	sqft	Existing	1.21	25	\$4.11	0%	0%	\$0.05	0.00	0.00	AEG Research
Restaurant	Exterior Lighting	Advanced New Construction Designs	sqft	Existing	0.53	25	\$4.11	0%	0%	\$0.05	0.00	0.00	AEG Research
Restaurant	Cooling	Strategic Energy Management	sqft	Existing	0.15	3	\$0.41	0%	0%	\$0.09	0.00	0.00	AEG Research
Restaurant	Heating	Strategic Energy Management	sqft	Existing	0.19	3	\$0.41	0%	0%	\$0.09	0.00	0.00	AEG Research
Restaurant	Ventilation	Strategic Energy Management	sqft	Existing	0.08	3	\$0.41	0%	0%	\$0.09	0.00	0.00	AEG Research
Restaurant	Water Heating	Strategic Energy Management	sqft	Existing	0.17	3	\$0.41	0%	0%	\$0.09	0.00	0.00	AEG Research
Restaurant	Interior Lighting	Strategic Energy Management	sqft	Existing	0.18	3	\$0.41	0%	0%	\$0.09	0.00	0.00	AEG Research
Restaurant	Exterior Lighting	Strategic Energy Management	sqft	Existing	0.08	3	\$0.41	0%	0%	\$0.09	0.00	0.00	AEG Research
Restaurant	Refrigeration	Strategic Energy Management	sqft	Existing	0.29	3	\$0.41	0%	0%	\$0.09	0.00	0.00	AEG Research
Restaurant	Office Equipment	Strategic Energy Management	sqft	Existing	0.03	3	\$0.41	0%	0%	\$0.09	0.00	0.00	AEG Research
Restaurant	Cooling	Commissioning	sqft	Existing	0.21	3	\$0.67	0%	0%	\$0.11	0.00	0.00	AEG Research
Restaurant	Heating	Commissioning	sqft	Existing	0.26	3	\$0.67	0%	0%	\$0.11	0.00	0.00	AEG Research
Restaurant	Ventilation	Commissioning	sqft	Existing	0.11	3	\$0.67	0%	0%	\$0.11	0.00	0.00	AEG Research
Restaurant	Water Heating	Commissioning	sqft	Existing	0.08	3	\$0.67	0%	0%	\$0.11	0.00	0.00	AEG Research
Restaurant	Interior Lighting	Commissioning	sqft	Existing	0.21	3	\$0.67	0%	0%	\$0.11	0.00	0.00	AEG Research
Restaurant	Exterior Lighting	Commissioning	sqft	Existing	0.09	3	\$0.67	0%	0%	\$0.11	0.00	0.00	AEG Research
Restaurant	Refrigeration	Commissioning	sqft	Existing	0.68	3	\$0.67	0%	0%	\$0.11	0.00	0.00	AEG Research
Restaurant	Cooling	Retrocommissioning	sqft	Existing	0.22	3	\$0.42	24%	79%	\$0.07	130.14	149.97	AEG Research
Restaurant	Heating	Retrocommissioning	sqft	Existing	0.27	3	\$0.42	24%	79%	\$0.07	57.76	63.26	AEG Research

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Restaurant	Ventilation	Retrocommissioning	sqft	Existing	0.11	3	\$0.42	24%	79%	\$0.07	74.72	91.08	AEG Research
Restaurant	Water Heating	Retrocommissioning	sqft	Existing	0.08	3	\$0.42	24%	79%	\$0.07	26.49	49.24	AEG Research
Restaurant	Interior Lighting	Retrocommissioning	sqft	Existing	0.22	3	\$0.42	24%	79%	\$0.07	126.30	200.95	AEG Research
Restaurant	Exterior Lighting	Retrocommissioning	sqft	Existing	0.09	3	\$0.42	24%	79%	\$0.07	54.61	85.75	AEG Research
Restaurant	Refrigeration	Retrocommissioning	sqft	Existing	0.73	3	\$0.42	24%	79%	\$0.07	500.79	589.14	AEG Research
Restaurant	Interior Lighting	Fruit Storage - Lighting Controls	sqft	Existing	0.15	10	\$0.09	0%	0%	\$0.06	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Restaurant	Refrigeration	Fruit Storage Refrigeration Retrofit	sqft	Existing	2.51	10	\$1.09	0%	0%	\$0.05	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Restaurant	Refrigeration	Fruit Storage Refrigeration Tuneup	sqft	Existing	0.62	3	\$0.23	0%	0%	\$0.11	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Restaurant	Refrigeration	Fruit Storage Retrofit - CO2 Scrub	sqft	Existing	1.16	10	\$3.13	0%	0%	\$0.31	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Restaurant	Refrigeration	Fruit Storage Retrofit - Membrane	sqft	Existing	0.23	10	\$0.68	0%	0%	\$0.34	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Restaurant	Cooling	Insulation - Ceiling	sqft roof	New	0.00	45	\$1.28	15%	50%	\$0.57	0.00	0.00	Building Energy Simulation Tool
Restaurant	Heating	Insulation - Ceiling	sqft roof	New	0.13	45	\$1.28	15%	50%	\$0.57	3.88	3.91	Building Energy Simulation Tool
Restaurant	Ventilation	Insulation - Ceiling	sqft roof	New	0.04	45	\$1.28	15%	50%	\$0.57	4.54	4.70	Building Energy Simulation Tool
Restaurant	Cooling	Insulation - Ducting	sqft duct	New	0.15	20	\$0.84	15%	50%	\$0.00	3.32	3.36	Building Energy Simulation Tool
Restaurant	Heating	Insulation - Ducting	sqft duct	New	0.00	20	\$0.84	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Restaurant	Ventilation	Insulation - Ducting	sqft duct	New	0.00	20	\$0.84	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Restaurant	Cooling	Building Shell - Cool Roofs	sqft roof	New	0.03	20	\$0.78	45%	50%	\$10.00	0.37	0.37	Building Energy Simulation Tool
Restaurant	Heating	Building Shell - Cool Roofs	sqft roof	New	-0.04	20	\$0.78	45%	50%	\$10.00	-0.19	-0.19	Building Energy Simulation Tool
Restaurant	Ventilation	Building Shell - Cool Roofs	sqft roof	New	-0.02	20	\$0.78	45%	50%	\$10.00	-0.23	-0.24	Building Energy Simulation Tool
Restaurant	Cooling	Insulation - Wall Cavity	sqft wall	New	-0.02	45	\$0.78	15%	50%	\$1.02	-0.97	-0.98	Building Energy Simulation Tool

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Restaurant	Heating	Insulation - Wall Cavity	sqft wall	New	0.06	45	\$0.78	15%	50%	\$1.02	1.07	1.07	Building Energy Simulation Tool
Restaurant	Ventilation	Insulation - Wall Cavity	sqft wall	New	0.02	45	\$0.78	15%	50%	\$1.02	1.27	1.30	Building Energy Simulation Tool
Restaurant	Cooling	HVAC - Duct Repair and Sealing	tonCool	New	0.21	18	\$0.57	15%	35%	\$10.00	0.06	0.06	Building Energy Simulation Tool
Restaurant	Heating	HVAC - Duct Repair and Sealing	tonCool	New	-3.75	18	\$0.57	15%	35%	\$10.00	-0.37	-0.37	Building Energy Simulation Tool
Restaurant	Ventilation	HVAC - Duct Repair and Sealing	tonCool	New	-1.30	18	\$0.57	15%	35%	\$10.00	-0.44	-0.45	Building Energy Simulation Tool
Restaurant	Cooling	Windows - High Efficiency Glazing	sqft window	New	3.81	30	\$35.93	66%	66%	\$0.19	0.00	0.00	7th Power Plan
Restaurant	Heating	Windows - High Efficiency Glazing	sqft window	New	9.83	30	\$35.93	66%	66%	\$0.19	0.00	0.00	7th Power Plan
Restaurant	Ventilation	Windows - High Efficiency Glazing	sqft window	New	1.92	30	\$35.93	66%	66%	\$0.19	0.00	0.00	7th Power Plan
Restaurant	Cooling	Chiller - Chilled Water Reset	ChillCtrl	New	0.00	10	\$884.85	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Restaurant	Cooling	Chiller - Chilled Water Variable-Flow System	HP cool	New	0.00	15	\$332.55	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Restaurant	Cooling	Chiller - Variable Speed Fans	HP fan	New	0.00	15	\$208.36	15%	75%	\$0.00	0.00	0.00	New Jersey TRM
Restaurant	Cooling	Water-Cooled Chiller - Condenser Water Reset	ChillCtrl	New	0.00	10	\$884.85	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Restaurant	Cooling	HVAC - Economizer	HP cool	New	66.89	10	\$168.42	18%	75%	\$0.32	17.35	18.02	AEG-BEST
Restaurant	Heating	Space Heating - Heat Recovery Ventilator	CFM	New	0.49	14	\$5.08	6%	75%	\$1.15	11.03	11.27	7th Power Plan
Restaurant	Ventilation	Ventilation - ECM on VAV Boxes	sqft	New	0.32	18	\$0.25	15%	20%	\$0.07	4.76	4.88	7th Power Plan
Restaurant	Ventilation	Ventilation - Variable Speed Control	sqft	New	0.10	15	\$181.39	19%	50%	\$162.78	5.18	5.54	AEG-BEST
Restaurant	Ventilation	Ventilation - Demand Controlled	sqft	New	0.02	15	\$0.25	15%	25%	\$1.26	0.30	0.32	7th Power Plan
Restaurant	Cooling	Destratification Fans (HVLS)	Strat Fan	New	4,067.98	15	\$7,270.90	15%	15%	\$0.06	0.00	0.00	AEG Research
Restaurant	Heating	Destratification Fans (HVLS)	Strat Fan	New	9,702.21	15	\$7,270.90	15%	15%	\$0.06	0.00	0.00	AEG Research
Restaurant	Cooling	RTU - Maintenance	tonCool	New	31.71	3	\$35.00	15%	45%	\$0.34	1.00	1.09	AEG Research
Restaurant	Cooling	RTU - Advanced Controls	sqft	New	0.29	15	\$0.07	15%	45%	\$0.02	17.74	17.86	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Restaurant	Cooling	RTU - Evaporative Precooler	tonCool	New	64.48	15	\$681.62	15%	75%	\$1.06	52.64	53.06	AEG Research
Restaurant	Cooling	Ductless Mini Split Heat Pump	tonCool	New	136.18	15	\$3,359.26	15%	75%	\$1.07	2.59	2.69	7th Power Plan
Restaurant	Heating	Ductless Mini Split Heat Pump	tonCool	New	183.46	15	\$3,359.26	15%	75%	\$1.07	2.39	2.42	7th Power Plan
Restaurant	Cooling	Thermostat - WiFi/Interactive	sqft	New	0.60	5	\$0.66	30%	40%	\$0.09	1.93	2.01	7th Power Plan
Restaurant	Heating	Thermostat - WiFi/Interactive	sqft	New	0.75	5	\$0.66	30%	40%	\$0.09	0.82	0.85	7th Power Plan
Restaurant	Ventilation	Thermostat - WiFi/Interactive	sqft	New	0.25	5	\$0.66	30%	40%	\$0.09	0.96	1.05	7th Power Plan
Restaurant	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	New	44.26	10	\$8.35	25%	65%	\$0.01	2.94	4.17	Illinois TRM
Restaurant	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	New	46.18	10	\$11.64	25%	65%	-\$0.14	1.54	2.18	7th Power Plan
Restaurant	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	New	39.77	15	\$36.75	0%	0%	\$0.04	0.00	0.00	Hawaii TRM
Restaurant	Water Heating	Water Heater - Pipe Insulation	PipeFeet	New	175.04	15	\$14.88	1%	75%	\$0.00	14.29	19.09	AEG-BEST
Restaurant	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	New	30.57	4	\$144.04	25%	65%	-\$0.45	0.95	1.46	7th Power Plan
Restaurant	Water Heating	Water Heater - Thermostat Setback	WHunits	New	39.29	2	\$5.00	15%	75%	\$0.02	0.48	0.81	Illinois TRM
Restaurant	Water Heating	Water Heater - Solar System	PipeFeet	New	609.60	20	\$215.28	1%	30%	\$0.01	20.17	26.75	AEG-BEST
Restaurant	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.43	15	\$0.35	11%	23%	\$0.06	36.55	39.18	7th Power Plan
Restaurant	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.59	15	\$0.58	11%	23%	\$0.07	50.37	54.16	7th Power Plan
Restaurant	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	New	81.07	15	\$54.41	1%	3%	\$0.05	0.47	0.56	7th Power Plan
Restaurant	Interior Lighting	Interior Lighting - Timeclocks and Timers	occ sens	New	0.00	8	\$111.67	7%	15%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Restaurant	Interior Lighting	Interior Lighting - Skylights	1000 sqft	New	0.00	15	\$1,006.35	18%	25%	\$0.00	0.00	0.00	AEG Research
Restaurant	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	1000 sqft	New	192.12	16	\$1,807.69	5%	15%	\$0.64	3.35	3.78	7th Power Plan

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Restaurant	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	New	1,985.05	11	\$30.80	15%	50%	\$0.00	9.94	11.15	Illinois TRM
Restaurant	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	ELtg Watts	New	0.85	8	\$0.63	15%	25%	\$0.07	6.81	8.81	7th Power Plan
Restaurant	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	New	47.17	8	\$55.10	15%	25%	\$0.11	3.51	4.62	Pacific Gas and Electric Research
Restaurant	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	New	58.31	7	\$3,400.00	15%	30%	\$5.82	5.74	7.62	AEG Research
Restaurant	Refrigeration	Refrigeration - Anti-Sweat Heater	Fridge Feet	New	48.79	8	\$48.18	11%	75%	\$0.15	0.80	0.82	7th Power Plan
Restaurant	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	New	269.07	4	\$10.44	5%	35%	\$0.01	5.53	6.05	Michigan Energy Measures Database
Restaurant	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	New	1,764.12	16	\$165.20	11%	75%	\$0.01	87.84	92.09	7th Power Plan
Restaurant	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	New	84.62	15	\$335.85	0%	0%	\$0.40	0.00	0.00	7th Power Plan
Restaurant	Refrigeration	Refrigeration - Strip Curtain	Walkin Door	New	89.54	2	\$10.41	11%	75%	\$0.05	2.98	3.14	7th Power Plan
Restaurant	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	New	1.32	15	\$45.43	6%	38%	\$3.40	45.65	44.81	Annual Energy Outlook, 2015
Restaurant	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	New	28.07	15	\$313.82	6%	38%	\$1.13	80.15	78.99	Annual Energy Outlook, 2015
Restaurant	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	New	1,153.55	10	\$506.05	11%	75%	\$0.06	43.54	45.78	Vermont TRM
Restaurant	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	New	37.97	6	\$45.41	0%	0%	\$0.22	0.00	0.00	7th Power Plan
Restaurant	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	New	3.07	8	\$3.72	0%	0%	\$0.18	0.00	0.00	7th Power Plan
Restaurant	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	New	751.82	5	\$45.85	0%	0%	\$0.01	0.00	0.00	Illinois TRM
Restaurant	Refrigeration	Grocery - ECMs for Display Cases	Fridge Case	New	159.12	16	\$165.20	11%	75%	\$0.10	1.31	1.31	7th Power Plan
Restaurant	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	New	1,158.34	5	\$187.94	25%	75%	\$0.03	14.93	15.03	Illinois TRM
Restaurant	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	New	3,357.94	18	\$8,526.67	25%	50%	\$0.21	10.00	10.34	7th Power Plan
Restaurant	Office Equipment	Office Equipment - Smart Power Strips	Smart Strip	New	26.04	4	\$41.63	10%	50%	\$0.37	1.11	0.95	7th Power Plan

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Restaurant	Cooling	Lodging - Guest Room Controls	LodgUnit	New	199.85	15	\$260.00	0%	0%	\$0.58	0.00	0.00	AEG-BEST
Restaurant	Heating	Lodging - Guest Room Controls	LodgUnit	New	-159.99	15	\$260.00	0%	0%	\$0.58	0.00	0.00	AEG-BEST
Restaurant	Office Equipment	Data Center - Best Practice Measures	sqft	New	0.07	5	\$0.01	0%	0%	\$0.02	0.00	0.00	com-datacenters-7p_v5p.xlsx
Restaurant	Cooling	Data Center - Commercially Available Measures	sqft	New	0.01	8	\$0.02	0%	0%	\$0.04	0.00	0.00	com-datacenters-7p_v5p.xlsx
Restaurant	Ventilation	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.02	0%	0%	\$0.04	0.00	0.00	com-datacenters-7p_v5p.xlsx
Restaurant	Interior Lighting	Data Center - Commercially Available Measures	sqft	New	0.04	8	\$0.02	0%	0%	\$0.04	0.00	0.00	com-datacenters-7p_v5p.xlsx
Restaurant	Office Equipment	Data Center - Commercially Available Measures	sqft	New	0.02	8	\$0.02	0%	0%	\$0.04	0.00	0.00	com-datacenters-7p_v5p.xlsx
Restaurant	Cooling	Data Center - Cutting Edge Measures	sqft	New	0.04	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Restaurant	Office Equipment	Data Center - Cutting Edge Measures	sqft	New	0.01	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Restaurant	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	New	489.16	18	\$4,092.80	0%	0%	\$0.70	0.00	0.00	7th Power Plan
Restaurant	Miscellaneous	Pool Pump - Timer	perBldg	New	0.00	10	\$85.22	15%	75%	\$0.00	0.00	0.00	Ontario Power TRM
Restaurant	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	New	2,060.85	6	\$35.93	1%	3%	\$0.00	0.00	1.69	7th Power Plan
Restaurant	Cooling	Advanced New Construction Designs	sqft	New	1.04	25	\$4.11	10%	25%	\$0.05	46.04	46.26	AEG Research
Restaurant	Heating	Advanced New Construction Designs	sqft	New	1.28	25	\$4.11	10%	25%	\$0.05	19.49	19.52	AEG Research
Restaurant	Ventilation	Advanced New Construction Designs	sqft	New	0.44	25	\$4.11	10%	25%	\$0.05	23.05	23.69	AEG Research
Restaurant	Water Heating	Advanced New Construction Designs	sqft	New	0.76	25	\$4.11	10%	25%	\$0.05	29.00	33.12	AEG Research
Restaurant	Interior Lighting	Advanced New Construction Designs	sqft	New	1.01	25	\$4.11	10%	25%	\$0.05	51.44	53.68	AEG Research
Restaurant	Exterior Lighting	Advanced New Construction Designs	sqft	New	0.39	25	\$4.11	10%	25%	\$0.05	20.80	22.51	AEG Research
Restaurant	Cooling	Strategic Energy Management	sqft	New	0.15	3	\$0.38	0%	0%	\$0.09	0.00	0.00	AEG Research

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Restaurant	Heating	Strategic Energy Management	sqft	New	0.19	3	\$0.38	0%	0%	\$0.09	0.00	0.00	AEG Research
Restaurant	Ventilation	Strategic Energy Management	sqft	New	0.07	3	\$0.38	0%	0%	\$0.09	0.00	0.00	AEG Research
Restaurant	Water Heating	Strategic Energy Management	sqft	New	0.11	3	\$0.38	0%	0%	\$0.09	0.00	0.00	AEG Research
Restaurant	Interior Lighting	Strategic Energy Management	sqft	New	0.15	3	\$0.38	0%	0%	\$0.09	0.00	0.00	AEG Research
Restaurant	Exterior Lighting	Strategic Energy Management	sqft	New	0.06	3	\$0.38	0%	0%	\$0.09	0.00	0.00	AEG Research
Restaurant	Refrigeration	Strategic Energy Management	sqft	New	0.32	3	\$0.38	0%	0%	\$0.09	0.00	0.00	AEG Research
Restaurant	Office Equipment	Strategic Energy Management	sqft	New	0.03	3	\$0.38	0%	0%	\$0.09	0.00	0.00	AEG Research
Restaurant	Cooling	Commissioning	sqft	New	0.21	3	\$0.62	24%	79%	\$0.11	2.96	3.19	AEG Research
Restaurant	Heating	Commissioning	sqft	New	0.26	3	\$0.62	24%	79%	\$0.11	1.28	1.32	AEG Research
Restaurant	Ventilation	Commissioning	sqft	New	0.09	3	\$0.62	24%	79%	\$0.11	1.52	1.67	AEG Research
Restaurant	Water Heating	Commissioning	sqft	New	0.05	3	\$0.62	24%	79%	\$0.11	0.65	1.03	AEG Research
Restaurant	Interior Lighting	Commissioning	sqft	New	0.18	3	\$0.62	24%	79%	\$0.11	2.87	4.19	AEG Research
Restaurant	Exterior Lighting	Commissioning	sqft	New	0.07	3	\$0.62	24%	79%	\$0.11	1.16	1.67	AEG Research
Restaurant	Refrigeration	Commissioning	sqft	New	0.73	3	\$0.62	24%	79%	\$0.11	12.62	11.60	AEG Research
Restaurant	Cooling	Retrocommissioning	sqft	New	0.21	3	\$0.39	0%	0%	\$0.07	0.00	0.00	AEG Research
Restaurant	Heating	Retrocommissioning	sqft	New	0.26	3	\$0.39	0%	0%	\$0.07	0.00	0.00	AEG Research
Restaurant	Ventilation	Retrocommissioning	sqft	New	0.09	3	\$0.39	0%	0%	\$0.07	0.00	0.00	AEG Research
Restaurant	Water Heating	Retrocommissioning	sqft	New	0.05	3	\$0.39	0%	0%	\$0.07	0.00	0.00	AEG Research
Restaurant	Interior Lighting	Retrocommissioning	sqft	New	0.18	3	\$0.39	0%	0%	\$0.07	0.00	0.00	AEG Research
Restaurant	Exterior Lighting	Retrocommissioning	sqft	New	0.07	3	\$0.39	0%	0%	\$0.07	0.00	0.00	AEG Research
Restaurant	Refrigeration	Retrocommissioning	sqft	New	0.74	3	\$0.39	0%	0%	\$0.07	0.00	0.00	AEG Research
Restaurant	Interior Lighting	Fruit Storage - Lighting Controls	sqft	New	0.13	10	\$0.09	0%	0%	\$0.06	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx

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Restaurant	Refrigeration	Fruit Storage Refrigeration Retrofit	sqft	New	2.36	10	\$1.09	0%	0%	\$0.06	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Restaurant	Refrigeration	Fruit Storage Refrigeration Tuneup	sqft	New	0.61	3	\$0.23	0%	0%	\$0.12	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Restaurant	Refrigeration	Fruit Storage Retrofit - CO2 Scrub	sqft	New	1.13	10	\$3.13	0%	0%	\$0.35	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Restaurant	Refrigeration	Fruit Storage Retrofit - Membrane	sqft	New	0.23	10	\$0.68	0%	0%	\$0.38	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Grocery	Cooling	Insulation - Ceiling	sqft roof	Existing	0.34	45	\$1.28	15%	35%	\$0.27	64.18	68.35	Building Energy Simulation Tool
Grocery	Heating	Insulation - Ceiling	sqft roof	Existing	0.00	45	\$1.28	15%	35%	\$0.27	0.02	0.02	Building Energy Simulation Tool
Grocery	Ventilation	Insulation - Ceiling	sqft roof	Existing	0.00	45	\$1.28	15%	35%	\$0.27	0.05	0.06	Building Energy Simulation Tool
Grocery	Cooling	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.84	15%	35%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Grocery	Heating	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.84	15%	35%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Grocery	Ventilation	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.84	15%	35%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Grocery	Cooling	Building Shell - Cool Roofs	sqft roof	Existing	0.49	20	\$0.78	45%	50%	\$0.92	23.34	23.93	Building Energy Simulation Tool
Grocery	Heating	Building Shell - Cool Roofs	sqft roof	Existing	-0.31	20	\$0.78	45%	50%	\$0.92	-2.77	-2.79	Building Energy Simulation Tool
Grocery	Ventilation	Building Shell - Cool Roofs	sqft roof	Existing	-0.09	20	\$0.78	45%	50%	\$0.92	-5.02	-6.06	Building Energy Simulation Tool
Grocery	Cooling	Insulation - Wall Cavity	sqft wall	Existing	0.86	45	\$0.78	15%	35%	\$0.05	91.88	94.99	Building Energy Simulation Tool
Grocery	Heating	Insulation - Wall Cavity	sqft wall	Existing	0.25	45	\$0.78	15%	35%	\$0.05	4.99	5.02	Building Energy Simulation Tool
Grocery	Ventilation	Insulation - Wall Cavity	sqft wall	Existing	0.07	45	\$0.78	15%	35%	\$0.05	8.96	10.86	Building Energy Simulation Tool
Grocery	Cooling	HVAC - Duct Repair and Sealing	tonCool	Existing	1.86	18	\$0.57	15%	25%	\$0.03	0.58	0.61	Building Energy Simulation Tool
Grocery	Heating	HVAC - Duct Repair and Sealing	tonCool	Existing	0.21	18	\$0.57	15%	25%	\$0.03	0.01	0.01	Building Energy Simulation Tool
Grocery	Ventilation	HVAC - Duct Repair and Sealing	tonCool	Existing	0.06	18	\$0.57	15%	25%	\$0.03	0.02	0.03	Building Energy Simulation Tool

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Grocery	Cooling	Windows - High Efficiency Glazing	sqft window	Existing	3.02	30	\$35.93	48%	48%	\$0.23	0.00	0.00	7th Power Plan
Grocery	Heating	Windows - High Efficiency Glazing	sqft window	Existing	8.19	30	\$35.93	48%	48%	\$0.23	0.00	0.00	7th Power Plan
Grocery	Ventilation	Windows - High Efficiency Glazing	sqft window	Existing	1.45	30	\$35.93	48%	48%	\$0.23	0.00	0.00	7th Power Plan
Grocery	Cooling	Chiller - Chilled Water Reset	ChillCtrl	Existing	4,314.80	10	\$884.85	15%	75%	\$0.03	0.48	0.51	AEG-BEST
Grocery	Cooling	Chiller - Chilled Water Variable-Flow System	HP cool	Existing	404.13	15	\$332.55	15%	75%	\$0.09	6.24	6.71	AEG-BEST
Grocery	Cooling	Chiller - Variable Speed Fans	HP fan	Existing	1,030.89	15	\$208.36	15%	75%	\$0.02	1.61	1.69	New Jersey TRM
Grocery	Cooling	Water-Cooled Chiller - Condenser Water Reset	ChillCtrl	Existing	35,014.83	10	\$884.85	15%	75%	\$0.00	1.49	1.58	AEG-BEST
Grocery	Cooling	HVAC - Economizer	HP cool	Existing	147.91	10	\$168.42	18%	75%	\$0.15	210.96	225.24	AEG-BEST
Grocery	Heating	Space Heating - Heat Recovery Ventilator	CFM	Existing	3.92	14	\$5.08	3%	75%	\$0.15	66.02	66.85	7th Power Plan
Grocery	Ventilation	Ventilation - ECM on VAV Boxes	sqft	Existing	0.37	18	\$0.25	15%	20%	\$0.06	20.39	24.58	7th Power Plan
Grocery	Ventilation	Ventilation - Variable Speed Control	sqft	Existing	0.04	15	\$181.39	13%	50%	\$374.40	17.44	24.28	AEG-BEST
Grocery	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.02	15	\$0.25	15%	75%	\$1.06	14.49	19.54	7th Power Plan
Grocery	Cooling	Destratification Fans (HVLS)	Strat Fan	Existing	5,228.50	15	\$7,270.90	15%	15%	\$0.04	0.00	0.00	AEG Research
Grocery	Heating	Destratification Fans (HVLS)	Strat Fan	Existing	13,147.23	15	\$7,270.90	15%	15%	\$0.04	0.00	0.00	AEG Research
Grocery	Cooling	RTU - Maintenance	tonCool	Existing	66.88	3	\$35.00	15%	45%	\$0.16	56.90	67.77	AEG Research
Grocery	Cooling	RTU - Advanced Controls	sqft	Existing	0.19	15	\$0.07	15%	45%	\$0.04	46.60	47.88	7th Power Plan
Grocery	Cooling	RTU - Evaporative Precooler	tonCool	Existing	138.55	15	\$681.62	15%	75%	\$0.49	214.91	226.71	AEG Research
Grocery	Cooling	Ductless Mini Split Heat Pump	tonCool	Existing	329.05	15	\$3,359.26	15%	25%	\$0.41	2.62	3.12	7th Power Plan
Grocery	Heating	Ductless Mini Split Heat Pump	tonCool	Existing	492.48	15	\$3,359.26	15%	25%	\$0.41	2.50	2.61	7th Power Plan
Grocery	Cooling	Thermostat - WiFi/Interactive	sqft	Existing	0.74	5	\$0.66	30%	40%	\$0.07	66.39	73.74	7th Power Plan
Grocery	Heating	Thermostat - WiFi/Interactive	sqft	Existing	0.98	5	\$0.66	30%	40%	\$0.07	17.23	17.77	7th Power Plan

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Grocery	Ventilation	Thermostat - WiFi/Interactive	sqft	Existing	0.30	5	\$0.66	30%	40%	\$0.07	32.20	39.65	7th Power Plan
Grocery	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	Existing	87.84	10	\$8.35	25%	65%	\$0.01	14.06	26.35	Illinois TRM
Grocery	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	Existing	90.94	10	\$11.64	25%	65%	-\$0.10	7.24	13.71	7th Power Plan
Grocery	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	Existing	57.87	15	\$36.75	0%	0%	\$0.04	0.00	0.00	Hawaii TRM
Grocery	Water Heating	Water Heater - Pipe Insulation	PipeFeet	Existing	360.58	15	\$14.88	16%	75%	\$0.00	36.25	62.28	AEG-BEST
Grocery	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	Existing	59.61	4	\$144.04	25%	65%	-\$0.33	9.25	17.46	7th Power Plan
Grocery	Water Heating	Water Heater - Thermostat Setback	WHunits	Existing	57.98	2	\$5.00	15%	75%	\$0.02	17.33	32.10	Illinois TRM
Grocery	Water Heating	Water Heater - Solar System	PipeFeet	Existing	1,241.46	20	\$215.28	1%	30%	\$0.01	60.43	106.19	AEG-BEST
Grocery	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.74	15	\$0.35	3%	23%	\$0.04	192.68	246.78	7th Power Plan
Grocery	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	1.02	15	\$0.58	3%	23%	\$0.05	259.58	339.87	7th Power Plan
Grocery	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	Existing	422.17	15	\$54.41	1%	3%	\$0.01	5.42	8.31	7th Power Plan
Grocery	Interior Lighting	Interior Lighting - Timeclocks and Timers	occ sens	Existing	0.00	8	\$111.67	7%	15%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Grocery	Interior Lighting	Interior Lighting - Skylights	1000 sqft	Existing	0.00	15	\$1,006.35	15%	30%	\$0.00	0.00	0.00	AEG Research
Grocery	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	1000 sqft	Existing	591.26	16	\$1,807.69	5%	15%	\$0.23	59.61	95.24	7th Power Plan
Grocery	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	Existing	6,221.60	11	\$30.80	15%	50%	\$0.00	234.02	336.84	Illinois TRM
Grocery	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	ELtg Watts	Existing	0.81	8	\$0.63	15%	25%	\$0.09	77.05	119.97	7th Power Plan
Grocery	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	Existing	59.67	8	\$55.10	15%	25%	\$0.11	38.96	62.50	Pacific Gas and Electric Research
Grocery	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	Existing	71.17	7	\$3,400.00	15%	30%	\$5.79	68.37	114.16	AEG Research
Grocery	Refrigeration	Refrigeration - Anti-Sweat Heater	Fridge Feet	Existing	222.51	8	\$48.18	33%	75%	\$0.03	274.56	400.94	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Grocery	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	Existing	64.59	4	\$10.44	27%	35%	\$0.04	33.70	50.84	Michigan Energy Measures Database
Grocery	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	Existing	227.52	16	\$165.20	33%	75%	\$0.06	119.62	145.85	7th Power Plan
Grocery	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	Existing	605.53	15	\$335.85	23%	75%	\$0.06	3,869.71	4,562.30	7th Power Plan
Grocery	Refrigeration	Refrigeration - Strip Curtain	Walkin Door	Existing	95.52	2	\$10.41	33%	75%	\$0.04	35.38	50.23	7th Power Plan
Grocery	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	Existing	8.05	15	\$45.43	16%	38%	\$0.49	564.78	766.16	Annual Energy Outlook, 2015
Grocery	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	Existing	176.09	15	\$313.82	16%	38%	\$0.16	1,047.11	1,364.09	Annual Energy Outlook, 2015
Grocery	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	Existing	140.52	10	\$506.05	33%	75%	\$0.38	72.07	93.48	Vermont TRM
Grocery	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	Existing	49.97	6	\$45.41	20%	75%	\$0.14	475.44	627.86	7th Power Plan
Grocery	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	Existing	9.33	8	\$3.72	20%	75%	\$0.05	33.71	43.15	7th Power Plan
Grocery	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	Existing	2,576.96	5	\$45.85	20%	75%	\$0.00	1,244.36	1,359.73	Illinois TRM
Grocery	Refrigeration	Grocery - ECMs for Display Cases	Fridge Case	Existing	218.25	16	\$165.20	33%	75%	\$0.07	202.81	257.53	7th Power Plan
Grocery	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	Existing	1,069.42	5	\$187.94	25%	75%	\$0.03	67.59	79.04	Illinois TRM
Grocery	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	Existing	3,971.60	18	\$8,526.67	25%	50%	\$0.18	43.33	52.68	7th Power Plan
Grocery	Office Equipment	Office Equipment - Smart Power Strips	Smart Strip	Existing	14.70	4	\$41.63	10%	50%	\$0.65	16.34	15.41	7th Power Plan
Grocery	Cooling	Lodging - Guest Room Controls	LodgUnit	Existing	294.27	15	\$260.00	0%	0%	\$0.63	0.00	0.00	AEG-BEST
Grocery	Heating	Lodging - Guest Room Controls	LodgUnit	Existing	-256.54	15	\$260.00	0%	0%	\$0.63	0.00	0.00	AEG-BEST
Grocery	Office Equipment	Data Center - Best Practice Measures	sqft	Existing	0.02	5	\$0.00	0%	0%	\$0.02	0.00	0.00	com-datacenters-7p_v5p.xlsx
Grocery	Cooling	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.02	0%	0%	\$0.04	0.00	0.00	com-datacenters-7p_v5p.xlsx
Grocery	Ventilation	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.02	0%	0%	\$0.04	0.00	0.00	com-datacenters-7p_v5p.xlsx

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Grocery	Interior Lighting	Data Center - Commercially Available Measures	sqft	Existing	0.05	8	\$0.02	0%	0%	\$0.04	0.00	0.00	com-datacenters-7p_v5p.xlsx
Grocery	Office Equipment	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.02	0%	0%	\$0.04	0.00	0.00	com-datacenters-7p_v5p.xlsx
Grocery	Cooling	Data Center - Cutting Edge Measures	sqft	Existing	0.06	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Grocery	Office Equipment	Data Center - Cutting Edge Measures	sqft	Existing	0.00	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Grocery	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	Existing	2,123.60	18	\$4,092.80	0%	0%	\$0.16	0.00	0.00	7th Power Plan
Grocery	Miscellaneous	Pool Pump - Timer	perBldg	Existing	0.00	10	\$85.22	15%	75%	\$0.00	0.00	0.00	Ontario Power TRM
Grocery	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	Existing	9,428.29	6	\$35.93	1%	3%	\$0.00	0.00	40.14	7th Power Plan
Grocery	Cooling	Advanced New Construction Designs	sqft	Existing	1.34	25	\$4.11	0%	0%	\$0.05	0.00	0.00	AEG Research
Grocery	Heating	Advanced New Construction Designs	sqft	Existing	1.65	25	\$4.11	0%	0%	\$0.05	0.00	0.00	AEG Research
Grocery	Ventilation	Advanced New Construction Designs	sqft	Existing	0.51	25	\$4.11	0%	0%	\$0.05	0.00	0.00	AEG Research
Grocery	Water Heating	Advanced New Construction Designs	sqft	Existing	0.41	25	\$4.11	0%	0%	\$0.05	0.00	0.00	AEG Research
Grocery	Interior Lighting	Advanced New Construction Designs	sqft	Existing	1.44	25	\$4.11	0%	0%	\$0.05	0.00	0.00	AEG Research
Grocery	Exterior Lighting	Advanced New Construction Designs	sqft	Existing	0.45	25	\$4.11	0%	0%	\$0.05	0.00	0.00	AEG Research
Grocery	Cooling	Strategic Energy Management	sqft	Existing	0.18	3	\$0.59	4%	27%	\$0.09	40.50	49.24	AEG Research
Grocery	Heating	Strategic Energy Management	sqft	Existing	0.25	3	\$0.59	4%	27%	\$0.09	10.65	11.58	AEG Research
Grocery	Ventilation	Strategic Energy Management	sqft	Existing	0.08	3	\$0.59	4%	27%	\$0.09	19.79	27.38	AEG Research
Grocery	Water Heating	Strategic Energy Management	sqft	Existing	0.06	3	\$0.59	4%	27%	\$0.09	9.08	17.26	AEG Research
Grocery	Interior Lighting	Strategic Energy Management	sqft	Existing	0.22	3	\$0.59	4%	27%	\$0.09	49.29	82.15	AEG Research
Grocery	Exterior Lighting	Strategic Energy Management	sqft	Existing	0.07	3	\$0.59	4%	27%	\$0.09	15.73	26.10	AEG Research

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Grocery	Refrigeration	Strategic Energy Management	sqft	Existing	0.83	3	\$0.59	4%	27%	\$0.09	214.84	287.46	AEG Research
Grocery	Office Equipment	Strategic Energy Management	sqft	Existing	0.02	3	\$0.59	4%	27%	\$0.09	5.60	5.38	AEG Research
Grocery	Cooling	Commissioning	sqft	Existing	0.25	3	\$0.70	0%	0%	\$0.06	0.00	0.00	AEG Research
Grocery	Heating	Commissioning	sqft	Existing	0.34	3	\$0.70	0%	0%	\$0.06	0.00	0.00	AEG Research
Grocery	Ventilation	Commissioning	sqft	Existing	0.10	3	\$0.70	0%	0%	\$0.06	0.00	0.00	AEG Research
Grocery	Water Heating	Commissioning	sqft	Existing	0.03	3	\$0.70	0%	0%	\$0.06	0.00	0.00	AEG Research
Grocery	Interior Lighting	Commissioning	sqft	Existing	0.25	3	\$0.70	0%	0%	\$0.06	0.00	0.00	AEG Research
Grocery	Exterior Lighting	Commissioning	sqft	Existing	0.08	3	\$0.70	0%	0%	\$0.06	0.00	0.00	AEG Research
Grocery	Refrigeration	Commissioning	sqft	Existing	1.93	3	\$0.70	0%	0%	\$0.06	0.00	0.00	AEG Research
Grocery	Cooling	Retrocommissioning	sqft	Existing	0.26	3	\$0.44	10%	62%	\$0.04	131.32	156.42	AEG Research
Grocery	Heating	Retrocommissioning	sqft	Existing	0.35	3	\$0.44	10%	62%	\$0.04	34.53	36.79	AEG Research
Grocery	Ventilation	Retrocommissioning	sqft	Existing	0.11	3	\$0.44	10%	62%	\$0.04	64.18	86.95	AEG Research
Grocery	Water Heating	Retrocommissioning	sqft	Existing	0.03	3	\$0.44	10%	62%	\$0.04	9.69	18.18	AEG Research
Grocery	Interior Lighting	Retrocommissioning	sqft	Existing	0.26	3	\$0.44	10%	62%	\$0.04	132.38	216.84	AEG Research
Grocery	Exterior Lighting	Retrocommissioning	sqft	Existing	0.08	3	\$0.44	10%	62%	\$0.04	42.26	68.88	AEG Research
Grocery	Refrigeration	Retrocommissioning	sqft	Existing	2.01	3	\$0.44	10%	62%	\$0.04	1,189.38	1,535.74	AEG Research
Grocery	Interior Lighting	Fruit Storage - Lighting Controls	sqft	Existing	0.18	10	\$0.09	0%	0%	\$0.05	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Grocery	Refrigeration	Fruit Storage Refrigeration Retrofit	sqft	Existing	7.77	10	\$1.09	0%	0%	\$0.02	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Grocery	Refrigeration	Fruit Storage Refrigeration Tuneup	sqft	Existing	1.68	3	\$0.23	0%	0%	\$0.04	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Grocery	Refrigeration	Fruit Storage Retrofit - CO2 Scrub	sqft	Existing	3.15	10	\$3.13	0%	0%	\$0.11	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Grocery	Refrigeration	Fruit Storage Retrofit - Membrane	sqft	Existing	0.63	10	\$0.68	0%	0%	\$0.12	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Grocery	Cooling	Insulation - Ceiling	sqft roof	New	0.07	45	\$1.28	15%	50%	\$1.00	6.60	6.69	Building Energy Simulation Tool

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Grocery	Heating	Insulation - Ceiling	sqft roof	New	0.02	45	\$1.28	15%	50%	\$1.00	0.30	0.30	Building Energy Simulation Tool
Grocery	Ventilation	Insulation - Ceiling	sqft roof	New	0.00	45	\$1.28	15%	50%	\$1.00	0.45	0.48	Building Energy Simulation Tool
Grocery	Cooling	Insulation - Ducting	sqft duct	New	0.00	20	\$0.84	15%	25%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Grocery	Heating	Insulation - Ducting	sqft duct	New	0.00	20	\$0.84	15%	25%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Grocery	Ventilation	Insulation - Ducting	sqft duct	New	0.00	20	\$0.84	15%	25%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Grocery	Cooling	Building Shell - Cool Roofs	sqft roof	New	0.51	20	\$0.78	45%	50%	\$0.17	6.66	6.69	Building Energy Simulation Tool
Grocery	Heating	Building Shell - Cool Roofs	sqft roof	New	-0.07	20	\$0.78	45%	50%	\$0.17	-0.17	-0.17	Building Energy Simulation Tool
Grocery	Ventilation	Building Shell - Cool Roofs	sqft roof	New	-0.01	20	\$0.78	45%	50%	\$0.17	-0.26	-0.28	Building Energy Simulation Tool
Grocery	Cooling	Insulation - Wall Cavity	sqft wall	New	0.08	45	\$0.78	15%	50%	\$0.63	5.36	5.43	Building Energy Simulation Tool
Grocery	Heating	Insulation - Wall Cavity	sqft wall	New	0.01	45	\$0.78	15%	50%	\$0.63	0.14	0.14	Building Energy Simulation Tool
Grocery	Ventilation	Insulation - Wall Cavity	sqft wall	New	0.00	45	\$0.78	15%	50%	\$0.63	0.20	0.22	Building Energy Simulation Tool
Grocery	Cooling	HVAC - Duct Repair and Sealing	tonCool	New	-4.83	18	\$0.57	15%	25%	\$10.00	-0.41	-0.41	Building Energy Simulation Tool
Grocery	Heating	HVAC - Duct Repair and Sealing	tonCool	New	0.44	18	\$0.57	15%	25%	\$10.00	0.01	0.01	Building Energy Simulation Tool
Grocery	Ventilation	HVAC - Duct Repair and Sealing	tonCool	New	0.08	18	\$0.57	15%	25%	\$10.00	0.01	0.01	Building Energy Simulation Tool
Grocery	Cooling	Windows - High Efficiency Glazing	sqft window	New	2.48	30	\$35.93	66%	66%	\$0.32	0.00	0.00	7th Power Plan
Grocery	Heating	Windows - High Efficiency Glazing	sqft window	New	5.94	30	\$35.93	66%	66%	\$0.32	0.00	0.00	7th Power Plan
Grocery	Ventilation	Windows - High Efficiency Glazing	sqft window	New	0.65	30	\$35.93	66%	66%	\$0.32	0.00	0.00	7th Power Plan
Grocery	Cooling	Chiller - Chilled Water Reset	ChillCtrl	New	3,581.40	10	\$884.85	15%	75%	\$0.03	0.04	0.05	AEG-BEST
Grocery	Cooling	Chiller - Chilled Water Variable-Flow System	HP cool	New	339.44	15	\$332.55	15%	75%	\$0.10	0.76	0.77	AEG-BEST

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Grocery	Cooling	Chiller - Variable Speed Fans	HP fan	New	853.54	15	\$208.36	15%	75%	\$0.03	0.19	0.19	New Jersey TRM
Grocery	Cooling	Water-Cooled Chiller - Condenser Water Reset	ChillCtrl	New	28,934.23	10	\$884.85	15%	75%	\$0.00	0.14	0.14	AEG-BEST
Grocery	Cooling	HVAC - Economizer	HP cool	New	159.22	10	\$168.42	18%	75%	\$0.14	25.25	25.87	AEG-BEST
Grocery	Heating	Space Heating - Heat Recovery Ventilator	CFM	New	3.67	14	\$5.08	6%	75%	\$0.16	7.97	8.00	7th Power Plan
Grocery	Ventilation	Ventilation - ECM on VAV Boxes	sqft	New	0.21	18	\$0.25	15%	20%	\$0.08	3.96	4.23	7th Power Plan
Grocery	Ventilation	Ventilation - Variable Speed Control	sqft	New	0.02	15	\$181.39	19%	50%	\$523.21	1.63	1.84	AEG-BEST
Grocery	Ventilation	Ventilation - Demand Controlled	sqft	New	0.01	15	\$0.25	15%	75%	\$1.48	1.55	1.75	7th Power Plan
Grocery	Cooling	Destratification Fans (HVLS)	Strat Fan	New	5,514.99	15	\$7,270.90	15%	15%	\$0.04	0.00	0.00	AEG Research
Grocery	Heating	Destratification Fans (HVLS)	Strat Fan	New	12,280.72	15	\$7,270.90	15%	15%	\$0.04	0.00	0.00	AEG Research
Grocery	Cooling	RTU - Maintenance	tonCool	New	75.51	3	\$35.00	15%	45%	\$0.14	1.62	1.73	AEG Research
Grocery	Cooling	RTU - Advanced Controls	sqft	New	0.20	15	\$0.07	15%	45%	\$0.03	12.71	12.81	7th Power Plan
Grocery	Cooling	RTU - Evaporative Precooler	tonCool	New	154.37	15	\$681.62	15%	75%	\$0.45	77.32	77.63	AEG Research
Grocery	Cooling	Ductless Mini Split Heat Pump	tonCool	New	286.21	15	\$3,359.26	15%	25%	\$0.45	0.46	0.47	7th Power Plan
Grocery	Heating	Ductless Mini Split Heat Pump	tonCool	New	474.83	15	\$3,359.26	15%	25%	\$0.45	0.45	0.45	7th Power Plan
Grocery	Cooling	Thermostat - WiFi/Interactive	sqft	New	0.81	5	\$0.66	30%	40%	\$0.07	2.61	2.75	7th Power Plan
Grocery	Heating	Thermostat - WiFi/Interactive	sqft	New	0.94	5	\$0.66	30%	40%	\$0.07	0.57	0.57	7th Power Plan
Grocery	Ventilation	Thermostat - WiFi/Interactive	sqft	New	0.18	5	\$0.66	30%	40%	\$0.07	0.84	0.98	7th Power Plan
Grocery	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	New	61.79	10	\$8.35	25%	65%	\$0.01	1.33	1.91	Illinois TRM
Grocery	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	New	64.46	10	\$11.64	25%	65%	-\$0.10	0.69	1.00	7th Power Plan
Grocery	Water Heating	Water Heater - High Efficiency Circulation Pump	WHUnits	New	41.19	15	\$36.75	0%	0%	\$0.04	0.00	0.00	Hawaii TRM
Grocery	Water Heating	Water Heater - Pipe Insulation	PipeFeet	New	244.44	15	\$14.88	1%	75%	\$0.00	6.35	8.59	AEG-BEST

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Grocery	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	New	43.06	4	\$144.04	25%	65%	-\$0.33	0.42	0.66	7th Power Plan
Grocery	Water Heating	Water Heater - Thermostat Setback	WHUnits	New	41.08	2	\$5.00	15%	75%	\$0.02	0.22	0.37	Illinois TRM
Grocery	Water Heating	Water Heater - Solar System	PipeFeet	New	851.49	20	\$215.28	1%	30%	\$0.01	8.95	12.03	AEG-BEST
Grocery	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.63	15	\$0.35	11%	23%	\$0.04	55.37	62.98	7th Power Plan
Grocery	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.87	15	\$0.58	11%	23%	\$0.05	76.10	86.86	7th Power Plan
Grocery	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	New	358.80	15	\$54.41	1%	3%	\$0.01	0.63	0.77	7th Power Plan
Grocery	Interior Lighting	Interior Lighting - Timeclocks and Timers	occ sens	New	0.00	8	\$111.67	7%	15%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Grocery	Interior Lighting	Interior Lighting - Skylights	1000 sqft	New	0.00	15	\$1,006.35	18%	33%	\$0.00	0.00	0.00	AEG Research
Grocery	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	1000 sqft	New	500.89	16	\$1,807.69	5%	15%	\$0.24	9.19	11.17	7th Power Plan
Grocery	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	New	5,193.40	11	\$30.80	15%	50%	\$0.00	27.12	33.19	Illinois TRM
Grocery	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	ELtg Watts	New	0.60	8	\$0.63	15%	25%	\$0.10	6.43	8.63	7th Power Plan
Grocery	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	New	45.17	8	\$55.10	15%	25%	\$0.11	3.37	4.53	Pacific Gas and Electric Research
Grocery	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	New	55.75	7	\$3,400.00	15%	30%	\$6.06	5.49	7.45	AEG Research
Grocery	Refrigeration	Refrigeration - Anti-Sweat Heater	Fridge Feet	New	159.99	8	\$48.18	41%	75%	\$0.05	17.28	18.15	7th Power Plan
Grocery	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	New	52.97	4	\$10.44	35%	35%	\$0.05	0.00	0.00	Michigan Energy Measures Database
Grocery	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	New	212.43	16	\$165.20	41%	75%	\$0.08	15.60	13.91	7th Power Plan
Grocery	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	New	562.74	15	\$335.85	11%	75%	\$0.06	665.52	673.05	7th Power Plan
Grocery	Refrigeration	Refrigeration - Strip Curtain	Walkin Door	New	93.59	2	\$10.41	41%	75%	\$0.05	0.38	0.41	7th Power Plan
Grocery	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBtuh	New	8.33	15	\$45.43	21%	38%	\$0.54	76.01	75.79	Annual Energy Outlook, 2015

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Grocery	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	New	175.68	15	\$313.82	21%	38%	\$0.18	132.86	133.05	Annual Energy Outlook, 2015
Grocery	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	New	138.55	10	\$506.05	41%	75%	\$0.45	7.72	6.75	Vermont TRM
Grocery	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	New	51.11	6	\$45.41	20%	75%	\$0.16	37.39	37.63	7th Power Plan
Grocery	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	New	9.28	8	\$3.72	20%	75%	\$0.06	3.41	3.41	7th Power Plan
Grocery	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	New	2,390.17	5	\$45.85	20%	75%	\$0.00	64.82	65.43	Illinois TRM
Grocery	Refrigeration	Grocery - ECMs for Display Cases	Fridge Case	New	215.13	16	\$165.20	41%	75%	\$0.08	25.85	25.70	7th Power Plan
Grocery	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	New	1,165.91	5	\$187.94	25%	75%	\$0.03	4.22	4.21	Illinois TRM
Grocery	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	New	2,280.44	18	\$8,526.67	25%	50%	\$0.25	8.44	9.04	7th Power Plan
Grocery	Office Equipment	Office Equipment - Smart Power Strips	Smart Strip	New	14.00	4	\$41.63	10%	50%	\$0.68	0.64	0.58	7th Power Plan
Grocery	Cooling	Lodging - Guest Room Controls	LodgUnit	New	243.41	15	\$260.00	0%	0%	\$1.94	0.00	0.00	AEG-BEST
Grocery	Heating	Lodging - Guest Room Controls	LodgUnit	New	-238.65	15	\$260.00	0%	0%	\$1.94	0.00	0.00	AEG-BEST
Grocery	Office Equipment	Data Center - Best Practice Measures	sqft	New	0.02	5	\$0.00	0%	0%	\$0.02	0.00	0.00	com-datacenters-7p_v5p.xlsx
Grocery	Cooling	Data Center - Commercially Available Measures	sqft	New	0.01	8	\$0.02	0%	0%	\$0.03	0.00	0.00	com-datacenters-7p_v5p.xlsx
Grocery	Ventilation	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.02	0%	0%	\$0.03	0.00	0.00	com-datacenters-7p_v5p.xlsx
Grocery	Interior Lighting	Data Center - Commercially Available Measures	sqft	New	0.05	8	\$0.02	0%	0%	\$0.03	0.00	0.00	com-datacenters-7p_v5p.xlsx
Grocery	Office Equipment	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.02	0%	0%	\$0.03	0.00	0.00	com-datacenters-7p_v5p.xlsx
Grocery	Cooling	Data Center - Cutting Edge Measures	sqft	New	0.06	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Grocery	Office Equipment	Data Center - Cutting Edge Measures	sqft	New	0.00	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Grocery	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	New	1,219.34	18	\$4,092.80	0%	0%	\$0.22	0.00	0.00	7th Power Plan

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Grocery	Miscellaneous	Pool Pump - Timer	perBldg	New	0.00	10	\$85.22	15%	75%	\$0.00	0.00	0.00	Ontario Power TRM
Grocery	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	New	9,428.29	6	\$35.93	1%	3%	\$0.00	0.00	2.27	7th Power Plan
Grocery	Cooling	Advanced New Construction Designs	sqft	New	1.41	25	\$4.11	10%	15%	\$0.06	21.14	21.26	AEG Research
Grocery	Heating	Advanced New Construction Designs	sqft	New	1.59	25	\$4.11	10%	15%	\$0.06	4.40	4.39	AEG Research
Grocery	Ventilation	Advanced New Construction Designs	sqft	New	0.30	25	\$4.11	10%	15%	\$0.06	6.65	7.12	AEG Research
Grocery	Water Heating	Advanced New Construction Designs	sqft	New	0.29	25	\$4.11	10%	15%	\$0.06	4.20	4.83	AEG Research
Grocery	Interior Lighting	Advanced New Construction Designs	sqft	New	1.23	25	\$4.11	10%	15%	\$0.06	22.22	24.37	AEG Research
Grocery	Exterior Lighting	Advanced New Construction Designs	sqft	New	0.34	25	\$4.11	10%	15%	\$0.06	6.41	7.03	AEG Research
Grocery	Cooling	Strategic Energy Management	sqft	New	0.21	3	\$0.54	4%	27%	\$0.09	1.26	1.34	AEG Research
Grocery	Heating	Strategic Energy Management	sqft	New	0.24	3	\$0.54	4%	27%	\$0.09	0.27	0.28	AEG Research
Grocery	Ventilation	Strategic Energy Management	sqft	New	0.05	3	\$0.54	4%	27%	\$0.09	0.41	0.48	AEG Research
Grocery	Water Heating	Strategic Energy Management	sqft	New	0.04	3	\$0.54	4%	27%	\$0.09	0.26	0.42	AEG Research
Grocery	Interior Lighting	Strategic Energy Management	sqft	New	0.19	3	\$0.54	4%	27%	\$0.09	1.38	1.94	AEG Research
Grocery	Exterior Lighting	Strategic Energy Management	sqft	New	0.05	3	\$0.54	4%	27%	\$0.09	0.40	0.60	AEG Research
Grocery	Refrigeration	Strategic Energy Management	sqft	New	0.90	3	\$0.54	4%	27%	\$0.09	6.89	6.74	AEG Research
Grocery	Office Equipment	Strategic Energy Management	sqft	New	0.02	3	\$0.54	4%	27%	\$0.09	0.14	0.13	AEG Research
Grocery	Cooling	Commissioning	sqft	New	0.29	3	\$0.65	10%	62%	\$0.06	3.95	4.20	AEG Research
Grocery	Heating	Commissioning	sqft	New	0.34	3	\$0.65	10%	62%	\$0.06	0.86	0.87	AEG Research
Grocery	Ventilation	Commissioning	sqft	New	0.06	3	\$0.65	10%	62%	\$0.06	1.28	1.51	AEG Research
Grocery	Water Heating	Commissioning	sqft	New	0.02	3	\$0.65	10%	62%	\$0.06	0.27	0.44	AEG Research
Grocery	Interior Lighting	Commissioning	sqft	New	0.22	3	\$0.65	10%	62%	\$0.06	3.60	5.08	AEG Research

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Grocery	Exterior Lighting	Commissioning	sqft	New	0.06	3	\$0.65	10%	62%	\$0.06	1.04	1.56	AEG Research
Grocery	Refrigeration	Commissioning	sqft	New	2.09	3	\$0.65	10%	62%	\$0.06	36.02	35.49	AEG Research
Grocery	Cooling	Retrocommissioning	sqft	New	0.29	3	\$0.42	0%	0%	\$0.04	0.00	0.00	AEG Research
Grocery	Heating	Retrocommissioning	sqft	New	0.34	3	\$0.42	0%	0%	\$0.04	0.00	0.00	AEG Research
Grocery	Ventilation	Retrocommissioning	sqft	New	0.06	3	\$0.42	0%	0%	\$0.04	0.00	0.00	AEG Research
Grocery	Water Heating	Retrocommissioning	sqft	New	0.02	3	\$0.42	0%	0%	\$0.04	0.00	0.00	AEG Research
Grocery	Interior Lighting	Retrocommissioning	sqft	New	0.22	3	\$0.42	0%	0%	\$0.04	0.00	0.00	AEG Research
Grocery	Exterior Lighting	Retrocommissioning	sqft	New	0.06	3	\$0.42	0%	0%	\$0.04	0.00	0.00	AEG Research
Grocery	Refrigeration	Retrocommissioning	sqft	New	2.09	3	\$0.42	0%	0%	\$0.04	0.00	0.00	AEG Research
Grocery	Interior Lighting	Fruit Storage - Lighting Controls	sqft	New	0.15	10	\$0.09	0%	0%	\$0.05	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Grocery	Refrigeration	Fruit Storage Refrigeration Retrofit	sqft	New	7.08	10	\$1.09	0%	0%	\$0.02	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Grocery	Refrigeration	Fruit Storage Refrigeration Tuneup	sqft	New	1.70	3	\$0.23	0%	0%	\$0.04	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Grocery	Refrigeration	Fruit Storage Retrofit - CO2 Scrub	sqft	New	3.18	10	\$3.13	0%	0%	\$0.12	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Grocery	Refrigeration	Fruit Storage Retrofit - Membrane	sqft	New	0.64	10	\$0.68	0%	0%	\$0.13	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Health	Cooling	Insulation - Ceiling	sqft roof	Existing	0.18	45	\$1.28	15%	35%	\$0.08	39.53	52.90	Building Energy Simulation Tool
Health	Heating	Insulation - Ceiling	sqft roof	Existing	0.80	45	\$1.28	15%	35%	\$0.08	8.54	8.66	Building Energy Simulation Tool
Health	Ventilation	Insulation - Ceiling	sqft roof	Existing	0.18	45	\$1.28	15%	35%	\$0.08	41.68	52.22	Building Energy Simulation Tool
Health	Cooling	Insulation - Ducting	sqft duct	Existing	0.48	20	\$0.84	15%	35%	\$0.00	103.12	138.37	Building Energy Simulation Tool
Health	Heating	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.84	15%	35%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Health	Ventilation	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.84	15%	35%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Health	Cooling	Building Shell - Cool Roofs	sqft roof	Existing	0.54	20	\$0.78	45%	50%	\$0.22	31.89	37.39	Building Energy Simulation Tool

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Health	Heating	Building Shell - Cool Roofs	sqft roof	Existing	-0.24	20	\$0.78	45%	50%	\$0.22	-0.63	-0.64	Building Energy Simulation Tool
Health	Ventilation	Building Shell - Cool Roofs	sqft roof	Existing	-0.05	20	\$0.78	45%	50%	\$0.22	-3.14	-3.87	Building Energy Simulation Tool
Health	Cooling	Insulation - Wall Cavity	sqft wall	Existing	-0.05	45	\$0.78	15%	35%	\$0.02	-10.24	-12.03	Building Energy Simulation Tool
Health	Heating	Insulation - Wall Cavity	sqft wall	Existing	2.29	45	\$0.78	15%	35%	\$0.02	21.60	21.73	Building Energy Simulation Tool
Health	Ventilation	Insulation - Wall Cavity	sqft wall	Existing	0.52	45	\$0.78	15%	35%	\$0.02	106.88	131.75	Building Energy Simulation Tool
Health	Cooling	HVAC - Duct Repair and Sealing	tonCool	Existing	17.59	18	\$0.57	15%	50%	\$10.00	46.29	65.87	Building Energy Simulation Tool
Health	Heating	HVAC - Duct Repair and Sealing	tonCool	Existing	-37.91	18	\$0.57	15%	50%	\$10.00	-5.00	-5.33	Building Energy Simulation Tool
Health	Ventilation	HVAC - Duct Repair and Sealing	tonCool	Existing	-8.81	18	\$0.57	15%	50%	\$10.00	-24.99	-32.88	Building Energy Simulation Tool
Health	Cooling	Windows - High Efficiency Glazing	sqft window	Existing	9.23	30	\$35.93	48%	48%	\$0.04	0.00	0.00	7th Power Plan
Health	Heating	Windows - High Efficiency Glazing	sqft window	Existing	56.35	30	\$35.93	48%	48%	\$0.04	0.00	0.00	7th Power Plan
Health	Ventilation	Windows - High Efficiency Glazing	sqft window	Existing	7.33	30	\$35.93	48%	48%	\$0.04	0.00	0.00	7th Power Plan
Health	Cooling	Chiller - Chilled Water Reset	ChillCtrl	Existing	18,786.58	10	\$884.85	15%	75%	\$0.01	485.94	632.32	AEG-BEST
Health	Cooling	Chiller - Chilled Water Variable-Flow System	HP cool	Existing	475.62	15	\$332.55	15%	75%	\$0.06	1,675.71	2,287.47	AEG-BEST
Health	Cooling	Chiller - Variable Speed Fans	HP fan	Existing	1,044.97	15	\$208.36	15%	75%	\$0.02	371.72	496.48	New Jersey TRM
Health	Cooling	Water-Cooled Chiller - Condenser Water Reset	ChillCtrl	Existing	39,857.37	10	\$884.85	15%	75%	\$0.00	837.38	1,048.52	AEG-BEST
Health	Cooling	HVAC - Economizer	HP cool	Existing	114.98	10	\$168.42	18%	75%	\$0.13	418.55	643.29	AEG-BEST
Health	Heating	Space Heating - Heat Recovery Ventilator	CFM	Existing	4.13	14	\$5.08	3%	75%	\$0.14	86.96	89.10	7th Power Plan
Health	Ventilation	Ventilation - ECM on VAV Boxes	sqft	Existing	0.63	18	\$0.25	15%	20%	\$0.04	73.13	90.93	7th Power Plan
Health	Ventilation	Ventilation - Variable Speed Control	sqft	Existing	0.07	15	\$181.39	13%	50%	\$240.15	62.92	92.38	AEG-BEST

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Health	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.03	15	\$0.25	15%	75%	\$0.68	51.88	74.08	7th Power Plan
Health	Cooling	Destratification Fans (HVLS)	Strat Fan	Existing	5,115.92	15	\$7,270.90	15%	15%	\$0.02	0.00	0.00	AEG Research
Health	Heating	Destratification Fans (HVLS)	Strat Fan	Existing	28,910.74	15	\$7,270.90	15%	15%	\$0.02	0.00	0.00	AEG Research
Health	Cooling	RTU - Maintenance	tonCool	Existing	45.46	3	\$35.00	15%	45%	\$0.17	13.26	21.82	AEG Research
Health	Cooling	RTU - Advanced Controls	sqft	Existing	0.15	15	\$0.07	15%	45%	\$0.04	11.95	14.66	7th Power Plan
Health	Cooling	RTU - Evaporative Precooler	tonCool	Existing	91.14	15	\$681.62	15%	75%	\$0.52	46.70	59.40	AEG Research
Health	Cooling	Ductless Mini Split Heat Pump	tonCool	Existing	224.82	15	\$3,359.26	15%	25%	\$0.28	0.72	1.10	7th Power Plan
Health	Heating	Ductless Mini Split Heat Pump	tonCool	Existing	904.17	15	\$3,359.26	15%	25%	\$0.28	0.47	0.50	7th Power Plan
Health	Cooling	Thermostat - WiFi/Interactive	sqft	Existing	0.65	5	\$0.66	30%	40%	\$0.04	138.41	190.95	7th Power Plan
Health	Heating	Thermostat - WiFi/Interactive	sqft	Existing	2.15	5	\$0.66	30%	40%	\$0.04	22.61	23.54	7th Power Plan
Health	Ventilation	Thermostat - WiFi/Interactive	sqft	Existing	0.50	5	\$0.66	30%	40%	\$0.04	114.97	146.46	7th Power Plan
Health	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	Existing	217.74	10	\$8.35	25%	65%	\$0.00	10.89	20.51	Illinois TRM
Health	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	Existing	225.41	10	\$11.64	25%	65%	-\$0.04	5.61	10.67	7th Power Plan
Health	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	Existing	57.67	15	\$36.75	15%	50%	\$0.04	7.15	11.25	Hawaii TRM
Health	Water Heating	Water Heater - Pipe Insulation	PipeFeet	Existing	894.24	15	\$14.88	16%	75%	\$0.00	28.10	48.46	AEG-BEST
Health	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	Existing	148.16	4	\$144.04	25%	65%	-\$0.13	7.16	13.61	7th Power Plan
Health	Water Heating	Water Heater - Thermostat Setback	WHunits	Existing	57.49	2	\$5.00	15%	75%	\$0.02	13.26	24.91	Illinois TRM
Health	Water Heating	Water Heater - Solar System	PipeFeet	Existing	3,077.80	20	\$215.28	1%	30%	\$0.00	46.81	82.60	AEG-BEST
Health	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.71	15	\$0.35	3%	23%	\$0.04	435.82	546.21	7th Power Plan
Health	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.98	15	\$0.58	3%	23%	\$0.05	587.61	752.48	7th Power Plan
Health	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	Existing	310.97	15	\$54.41	1%	3%	\$0.01	12.65	18.73	7th Power Plan

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Health	Interior Lighting	Interior Lighting - Timeclocks and Timers	occ sens	Existing	0.00	8	\$111.67	7%	15%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Health	Interior Lighting	Interior Lighting - Skylights	1000 sqft	Existing	0.00	15	\$1,006.35	15%	25%	\$0.00	0.00	0.00	AEG Research
Health	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	1000 sqft	Existing	485.38	16	\$1,807.69	5%	15%	\$0.29	116.69	179.63	7th Power Plan
Health	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	Existing	5,078.41	11	\$30.80	15%	50%	\$0.00	454.00	633.19	Illinois TRM
Health	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	ELtg Watts	Existing	1.21	8	\$0.63	15%	25%	\$0.06	57.81	90.29	7th Power Plan
Health	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	Existing	80.61	8	\$55.10	15%	25%	\$0.08	29.22	47.03	Pacific Gas and Electric Research
Health	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	Existing	96.57	7	\$3,400.00	15%	30%	\$4.21	51.56	86.09	AEG Research
Health	Refrigeration	Refrigeration - Anti-Sweat Heater	Fridge Feet	Existing	14.70	8	\$48.18	4%	25%	\$0.50	4.45	6.60	7th Power Plan
Health	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	Existing	28.27	4	\$10.44	4%	25%	\$0.09	8.36	10.82	Michigan Energy Measures Database
Health	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	Existing	249.35	16	\$165.20	4%	25%	\$0.07	12.39	15.41	7th Power Plan
Health	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	Existing	26.15	15	\$335.85	0%	0%	\$1.33	0.00	0.00	7th Power Plan
Health	Refrigeration	Refrigeration - Strip Curtain	Walkln Door	Existing	21.64	2	\$10.41	4%	25%	\$0.22	4.04	5.15	7th Power Plan
Health	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBtuh	Existing	0.39	15	\$45.43	2%	13%	\$11.17	20.52	25.32	Annual Energy Outlook, 2015
Health	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	Existing	8.69	15	\$313.82	2%	13%	\$3.72	38.43	45.25	Annual Energy Outlook, 2015
Health	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	Existing	161.80	10	\$506.05	4%	25%	\$0.41	7.95	10.16	Vermont TRM
Health	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	Existing	8.76	6	\$45.41	0%	0%	\$0.95	0.00	0.00	7th Power Plan
Health	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	Existing	0.71	8	\$3.72	0%	0%	\$0.79	0.00	0.00	7th Power Plan
Health	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	Existing	165.89	5	\$45.85	0%	0%	\$0.06	0.00	0.00	Illinois TRM
Health	Refrigeration	Grocery - ECMs for Display Cases	Fridge Case	Existing	36.65	16	\$165.20	4%	25%	\$0.45	3.90	4.56	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Health	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	Existing	1,256.42	5	\$187.94	25%	75%	\$0.03	52.64	55.11	Illinois TRM
Health	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	Existing	6,665.07	18	\$8,526.67	25%	50%	\$0.11	154.75	194.58	7th Power Plan
Health	Office Equipment	Office Equipment - Smart Power Strips	Smart Strip	Existing	26.98	4	\$41.63	10%	50%	\$0.36	67.52	65.67	7th Power Plan
Health	Cooling	Lodging - Guest Room Controls	LodgUnit	Existing	192.21	15	\$260.00	0%	0%	\$10.00	0.00	0.00	AEG-BEST
Health	Heating	Lodging - Guest Room Controls	LodgUnit	Existing	-469.37	15	\$260.00	0%	0%	\$10.00	0.00	0.00	AEG-BEST
Health	Office Equipment	Data Center - Best Practice Measures	sqft	Existing	0.01	5	\$0.00	0%	0%	\$0.02	0.00	0.00	com-datacenters-7p_v5p.xlsx
Health	Cooling	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.02	0%	0%	\$0.04	0.00	0.00	com-datacenters-7p_v5p.xlsx
Health	Ventilation	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.02	0%	0%	\$0.04	0.00	0.00	com-datacenters-7p_v5p.xlsx
Health	Interior Lighting	Data Center - Commercially Available Measures	sqft	Existing	0.05	8	\$0.02	0%	0%	\$0.04	0.00	0.00	com-datacenters-7p_v5p.xlsx
Health	Office Equipment	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.02	0%	0%	\$0.04	0.00	0.00	com-datacenters-7p_v5p.xlsx
Health	Cooling	Data Center - Cutting Edge Measures	sqft	Existing	0.06	6	\$0.00	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Health	Office Equipment	Data Center - Cutting Edge Measures	sqft	Existing	0.00	6	\$0.00	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Health	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	Existing	5,370.94	18	\$4,092.80	0%	5%	\$0.07	20.74	25.94	7th Power Plan
Health	Miscellaneous	Pool Pump - Timer	perBldg	Existing	0.00	10	\$85.22	15%	75%	\$0.00	0.00	0.00	Ontario Power TRM
Health	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	Existing	14,620.16	6	\$35.93	1%	3%	\$0.00	0.00	96.18	7th Power Plan
Health	Cooling	Advanced New Construction Designs	sqft	Existing	1.14	25	\$4.11	0%	0%	\$0.04	0.00	0.00	AEG Research
Health	Heating	Advanced New Construction Designs	sqft	Existing	3.80	25	\$4.11	0%	0%	\$0.04	0.00	0.00	AEG Research
Health	Ventilation	Advanced New Construction Designs	sqft	Existing	0.85	25	\$4.11	0%	0%	\$0.04	0.00	0.00	AEG Research
Health	Water Heating	Advanced New Construction Designs	sqft	Existing	0.67	25	\$4.11	0%	0%	\$0.04	0.00	0.00	AEG Research

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Health	Interior Lighting	Advanced New Construction Designs	sqft	Existing	1.42	25	\$4.11	0%	0%	\$0.04	0.00	0.00	AEG Research
Health	Exterior Lighting	Advanced New Construction Designs	sqft	Existing	0.15	25	\$4.11	0%	0%	\$0.04	0.00	0.00	AEG Research
Health	Cooling	Strategic Energy Management	sqft	Existing	0.17	3	\$0.41	4%	28%	\$0.09	92.26	149.09	AEG Research
Health	Heating	Strategic Energy Management	sqft	Existing	0.55	3	\$0.41	4%	28%	\$0.09	15.18	16.35	AEG Research
Health	Ventilation	Strategic Energy Management	sqft	Existing	0.13	3	\$0.41	4%	28%	\$0.09	76.62	109.91	AEG Research
Health	Water Heating	Strategic Energy Management	sqft	Existing	0.10	3	\$0.41	4%	28%	\$0.09	7.34	14.04	AEG Research
Health	Interior Lighting	Strategic Energy Management	sqft	Existing	0.22	3	\$0.41	4%	28%	\$0.09	124.07	195.87	AEG Research
Health	Exterior Lighting	Strategic Energy Management	sqft	Existing	0.02	3	\$0.41	4%	28%	\$0.09	12.67	20.73	AEG Research
Health	Refrigeration	Strategic Energy Management	sqft	Existing	0.03	3	\$0.41	4%	28%	\$0.09	18.98	21.06	AEG Research
Health	Office Equipment	Strategic Energy Management	sqft	Existing	0.03	3	\$0.41	4%	28%	\$0.09	24.15	23.93	AEG Research
Health	Cooling	Commissioning	sqft	Existing	0.23	3	\$0.99	0%	0%	\$0.17	0.00	0.00	AEG Research
Health	Heating	Commissioning	sqft	Existing	0.74	3	\$0.99	0%	0%	\$0.17	0.00	0.00	AEG Research
Health	Ventilation	Commissioning	sqft	Existing	0.17	3	\$0.99	0%	0%	\$0.17	0.00	0.00	AEG Research
Health	Water Heating	Commissioning	sqft	Existing	0.05	3	\$0.99	0%	0%	\$0.17	0.00	0.00	AEG Research
Health	Interior Lighting	Commissioning	sqft	Existing	0.25	3	\$0.99	0%	0%	\$0.17	0.00	0.00	AEG Research
Health	Exterior Lighting	Commissioning	sqft	Existing	0.02	3	\$0.99	0%	0%	\$0.17	0.00	0.00	AEG Research
Health	Refrigeration	Commissioning	sqft	Existing	0.06	3	\$0.99	0%	0%	\$0.17	0.00	0.00	AEG Research
Health	Cooling	Retrocommissioning	sqft	Existing	0.23	3	\$0.63	15%	55%	\$0.11	210.43	342.47	AEG Research
Health	Heating	Retrocommissioning	sqft	Existing	0.76	3	\$0.63	15%	55%	\$0.11	34.62	37.55	AEG Research
Health	Ventilation	Retrocommissioning	sqft	Existing	0.18	3	\$0.63	15%	55%	\$0.11	174.75	252.44	AEG Research
Health	Water Heating	Retrocommissioning	sqft	Existing	0.05	3	\$0.63	15%	55%	\$0.11	5.58	10.75	AEG Research
Health	Interior Lighting	Retrocommissioning	sqft	Existing	0.25	3	\$0.63	15%	55%	\$0.11	235.82	374.90	AEG Research

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Health	Exterior Lighting	Retrocommissioning	sqft	Existing	0.03	3	\$0.63	15%	55%	\$0.11	24.09	39.67	AEG Research
Health	Refrigeration	Retrocommissioning	sqft	Existing	0.06	3	\$0.63	15%	55%	\$0.11	72.16	80.59	AEG Research
Health	Interior Lighting	Fruit Storage - Lighting Controls	sqft	Existing	0.18	10	\$0.09	0%	0%	\$0.05	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Health	Refrigeration	Fruit Storage Refrigeration Retrofit	sqft	Existing	0.20	10	\$1.09	0%	0%	\$0.69	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Health	Refrigeration	Fruit Storage Refrigeration Tuneup	sqft	Existing	0.05	3	\$0.23	0%	0%	\$1.41	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Health	Refrigeration	Fruit Storage Retrofit - CO2 Scrub	sqft	Existing	0.09	10	\$3.13	0%	0%	\$4.08	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Health	Refrigeration	Fruit Storage Retrofit - Membrane	sqft	Existing	0.02	10	\$0.68	0%	0%	\$4.43	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Health	Cooling	Insulation - Ceiling	sqft roof	New	0.02	45	\$1.28	15%	50%	\$0.20	2.24	2.32	Building Energy Simulation Tool
Health	Heating	Insulation - Ceiling	sqft roof	New	0.39	45	\$1.28	15%	50%	\$0.20	2.06	2.08	Building Energy Simulation Tool
Health	Ventilation	Insulation - Ceiling	sqft roof	New	0.06	45	\$1.28	15%	50%	\$0.20	9.22	9.82	Building Energy Simulation Tool
Health	Cooling	Insulation - Ducting	sqft duct	New	0.25	20	\$0.84	15%	50%	\$0.00	36.93	37.92	Building Energy Simulation Tool
Health	Heating	Insulation - Ducting	sqft duct	New	0.00	20	\$0.84	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Health	Ventilation	Insulation - Ducting	sqft duct	New	0.00	20	\$0.84	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Health	Cooling	Building Shell - Cool Roofs	sqft roof	New	0.09	20	\$0.78	45%	50%	\$10.00	1.84	1.90	Building Energy Simulation Tool
Health	Heating	Building Shell - Cool Roofs	sqft roof	New	-0.19	20	\$0.78	45%	50%	\$10.00	-0.15	-0.15	Building Energy Simulation Tool
Health	Ventilation	Building Shell - Cool Roofs	sqft roof	New	-0.03	20	\$0.78	45%	50%	\$10.00	-0.65	-0.70	Building Energy Simulation Tool
Health	Cooling	Insulation - Wall Cavity	sqft wall	New	0.00	45	\$0.78	15%	50%	\$0.10	0.49	0.50	Building Energy Simulation Tool
Health	Heating	Insulation - Wall Cavity	sqft wall	New	0.49	45	\$0.78	15%	50%	\$0.10	2.27	2.28	Building Energy Simulation Tool
Health	Ventilation	Insulation - Wall Cavity	sqft wall	New	0.08	45	\$0.78	15%	50%	\$0.10	10.11	10.65	Building Energy Simulation Tool

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Health	Cooling	HVAC - Duct Repair and Sealing	tonCool	New	13.04	18	\$0.57	15%	35%	\$0.00	7.44	7.76	Building Energy Simulation Tool
Health	Heating	HVAC - Duct Repair and Sealing	tonCool	New	177.25	18	\$0.57	15%	35%	\$0.00	3.76	3.77	Building Energy Simulation Tool
Health	Ventilation	HVAC - Duct Repair and Sealing	tonCool	New	27.50	18	\$0.57	15%	35%	\$0.00	16.87	17.74	Building Energy Simulation Tool
Health	Cooling	Windows - High Efficiency Glazing	sqft window	New	5.97	30	\$35.93	66%	66%	\$0.05	0.00	0.00	7th Power Plan
Health	Heating	Windows - High Efficiency Glazing	sqft window	New	50.30	30	\$35.93	66%	66%	\$0.05	0.00	0.00	7th Power Plan
Health	Ventilation	Windows - High Efficiency Glazing	sqft window	New	4.48	30	\$35.93	66%	66%	\$0.05	0.00	0.00	7th Power Plan
Health	Cooling	Chiller - Chilled Water Reset	ChillCtrl	New	11,138.84	10	\$884.85	15%	75%	\$0.01	40.93	45.19	AEG-BEST
Health	Cooling	Chiller - Chilled Water Variable-Flow System	HP cool	New	292.61	15	\$332.55	15%	75%	\$0.08	192.85	209.00	AEG-BEST
Health	Cooling	Chiller - Variable Speed Fans	HP fan	New	632.79	15	\$208.36	15%	75%	\$0.02	41.61	45.13	New Jersey TRM
Health	Cooling	Water-Cooled Chiller - Condenser Water Reset	ChillCtrl	New	22,664.21	10	\$884.85	15%	75%	\$0.00	66.18	73.45	AEG-BEST
Health	Cooling	HVAC - Economizer	HP cool	New	79.43	10	\$168.42	18%	75%	\$0.17	44.29	49.79	AEG-BEST
Health	Heating	Space Heating - Heat Recovery Ventilator	CFM	New	3.64	14	\$5.08	6%	75%	\$0.15	10.28	10.55	7th Power Plan
Health	Ventilation	Ventilation - ECM on VAV Boxes	sqft	New	0.38	18	\$0.25	15%	20%	\$0.05	16.05	16.90	7th Power Plan
Health	Ventilation	Ventilation - Variable Speed Control	sqft	New	0.04	15	\$181.39	19%	50%	\$322.46	6.51	7.30	AEG-BEST
Health	Ventilation	Ventilation - Demand Controlled	sqft	New	0.02	15	\$0.25	15%	75%	\$0.91	6.17	6.94	7th Power Plan
Health	Cooling	Destratification Fans (HVLS)	Strat Fan	New	3,310.49	15	\$7,270.90	15%	15%	\$0.03	0.00	0.00	AEG Research
Health	Heating	Destratification Fans (HVLS)	Strat Fan	New	25,805.62	15	\$7,270.90	15%	15%	\$0.03	0.00	0.00	AEG Research
Health	Cooling	RTU - Maintenance	tonCool	New	46.05	3	\$35.00	15%	45%	\$0.15	0.46	0.59	AEG Research
Health	Cooling	RTU - Advanced Controls	sqft	New	0.14	15	\$0.07	15%	45%	\$0.03	3.65	3.81	7th Power Plan
Health	Cooling	RTU - Evaporative Precooler	tonCool	New	92.34	15	\$681.62	15%	75%	\$0.47	20.94	21.45	AEG Research
Health	Cooling	Ductless Mini Split Heat Pump	tonCool	New	173.56	15	\$3,359.26	15%	25%	\$0.30	0.15	0.16	7th Power Plan

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Health	Heating	Ductless Mini Split Heat Pump	tonCool	New	866.58	15	\$3,359.26	15%	25%	\$0.30	0.09	0.09	7th Power Plan
Health	Cooling	Thermostat - WiFi/Interactive	sqft	New	0.46	5	\$0.66	30%	40%	\$0.04	4.74	5.49	7th Power Plan
Health	Heating	Thermostat - WiFi/Interactive	sqft	New	1.95	5	\$0.66	30%	40%	\$0.04	0.73	0.75	7th Power Plan
Health	Ventilation	Thermostat - WiFi/Interactive	sqft	New	0.31	5	\$0.66	30%	40%	\$0.04	3.25	3.75	7th Power Plan
Health	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	New	77.56	10	\$8.35	25%	65%	\$0.01	1.08	1.56	Illinois TRM
Health	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	New	80.92	10	\$11.64	25%	65%	-\$0.08	0.56	0.82	7th Power Plan
Health	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	New	41.57	15	\$36.75	15%	50%	\$0.04	1.88	2.23	Hawaii TRM
Health	Water Heating	Water Heater - Pipe Insulation	PipeFeet	New	613.97	15	\$14.88	1%	75%	\$0.00	5.14	6.99	AEG-BEST
Health	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	New	53.40	4	\$144.04	25%	65%	-\$0.27	0.34	0.53	7th Power Plan
Health	Water Heating	Water Heater - Thermostat Setback	WHunits	New	40.97	2	\$5.00	15%	75%	\$0.02	0.17	0.30	Illinois TRM
Health	Water Heating	Water Heater - Solar System	PipeFeet	New	2,138.04	20	\$215.28	1%	30%	\$0.00	7.25	9.79	AEG-BEST
Health	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.61	15	\$0.35	11%	23%	\$0.04	128.83	144.20	7th Power Plan
Health	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.84	15	\$0.58	11%	23%	\$0.05	177.16	198.98	7th Power Plan
Health	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	New	268.11	15	\$54.41	1%	3%	\$0.02	1.53	1.83	7th Power Plan
Health	Interior Lighting	Interior Lighting - Timeclocks and Timers	occ sens	New	0.00	8	\$111.67	7%	15%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Health	Interior Lighting	Interior Lighting - Skylights	1000 sqft	New	0.00	15	\$1,006.35	18%	25%	\$0.00	0.00	0.00	AEG Research
Health	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	1000 sqft	New	414.65	16	\$1,807.69	5%	15%	\$0.30	18.39	22.09	7th Power Plan
Health	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	New	4,322.37	11	\$30.80	15%	50%	\$0.00	54.90	65.55	Illinois TRM
Health	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	ELtg Watts	New	0.86	8	\$0.63	15%	25%	\$0.06	4.94	6.69	7th Power Plan

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Health	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	New	57.97	8	\$55.10	15%	25%	\$0.08	2.55	3.50	Pacific Gas and Electric Research
Health	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	New	71.61	7	\$3,400.00	15%	30%	\$4.42	4.15	5.76	AEG Research
Health	Refrigeration	Refrigeration - Anti-Sweat Heater	Fridge Feet	New	10.61	8	\$48.18	4%	25%	\$0.70	0.37	0.39	7th Power Plan
Health	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	New	23.04	4	\$10.44	4%	25%	\$0.12	0.33	0.33	Michigan Energy Measures Database
Health	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	New	207.57	16	\$165.20	4%	25%	\$0.08	1.78	1.80	7th Power Plan
Health	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	New	24.42	15	\$335.85	0%	0%	\$1.46	0.00	0.00	7th Power Plan
Health	Refrigeration	Refrigeration - Strip Curtain	Walkin Door	New	19.13	2	\$10.41	4%	25%	\$0.26	0.05	0.05	7th Power Plan
Health	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	New	0.39	15	\$45.43	2%	13%	\$12.28	3.23	3.26	Annual Energy Outlook, 2015
Health	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	New	8.13	15	\$313.82	2%	13%	\$4.09	5.63	5.71	Annual Energy Outlook, 2015
Health	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	New	137.93	10	\$506.05	4%	25%	\$0.49	0.89	0.90	Vermont TRM
Health	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	New	8.11	6	\$45.41	0%	0%	\$1.06	0.00	0.00	7th Power Plan
Health	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	New	0.65	8	\$3.72	0%	0%	\$0.88	0.00	0.00	7th Power Plan
Health	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	New	156.82	5	\$45.85	0%	0%	\$0.06	0.00	0.00	Illinois TRM
Health	Refrigeration	Grocery - ECMs for Display Cases	Fridge Case	New	33.72	16	\$165.20	4%	25%	\$0.50	0.58	0.58	7th Power Plan
Health	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	New	1,238.05	5	\$187.94	25%	75%	\$0.03	2.90	2.93	Illinois TRM
Health	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	New	4,062.66	18	\$8,526.67	25%	50%	\$0.15	34.31	36.25	7th Power Plan
Health	Office Equipment	Office Equipment - Smart Power Strips	Smart Strip	New	26.16	4	\$41.63	10%	50%	\$0.37	2.83	2.59	7th Power Plan
Health	Cooling	Lodging - Guest Room Controls	LodgUnit	New	152.21	15	\$260.00	0%	0%	\$10.00	0.00	0.00	AEG-BEST
Health	Heating	Lodging - Guest Room Controls	LodgUnit	New	-460.02	15	\$260.00	0%	0%	\$10.00	0.00	0.00	AEG-BEST

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Health	Office Equipment	Data Center - Best Practice Measures	sqft	New	0.01	5	\$0.00	0%	0%	\$0.02	0.00	0.00	com-datacenters-7p_v5p.xlsx
Health	Cooling	Data Center - Commercially Available Measures	sqft	New	0.01	8	\$0.02	0%	0%	\$0.03	0.00	0.00	com-datacenters-7p_v5p.xlsx
Health	Ventilation	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.02	0%	0%	\$0.03	0.00	0.00	com-datacenters-7p_v5p.xlsx
Health	Interior Lighting	Data Center - Commercially Available Measures	sqft	New	0.05	8	\$0.02	0%	0%	\$0.03	0.00	0.00	com-datacenters-7p_v5p.xlsx
Health	Office Equipment	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.02	0%	0%	\$0.03	0.00	0.00	com-datacenters-7p_v5p.xlsx
Health	Cooling	Data Center - Cutting Edge Measures	sqft	New	0.04	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Health	Office Equipment	Data Center - Cutting Edge Measures	sqft	New	0.00	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Health	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	New	3,267.28	18	\$4,092.80	0%	5%	\$0.09	4.58	4.83	7th Power Plan
Health	Miscellaneous	Pool Pump - Timer	perBldg	New	0.00	10	\$85.22	15%	75%	\$0.00	0.00	0.00	Ontario Power TRM
Health	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	New	7,310.08	6	\$35.93	1%	3%	\$0.00	0.00	5.63	7th Power Plan
Health	Cooling	Advanced New Construction Designs	sqft	New	0.80	25	\$4.11	10%	25%	\$0.04	113.90	116.28	AEG Research
Health	Heating	Advanced New Construction Designs	sqft	New	3.40	25	\$4.11	10%	25%	\$0.04	17.56	17.64	AEG Research
Health	Ventilation	Advanced New Construction Designs	sqft	New	0.52	25	\$4.11	10%	25%	\$0.04	77.41	82.20	AEG Research
Health	Water Heating	Advanced New Construction Designs	sqft	New	0.48	25	\$4.11	10%	25%	\$0.04	10.09	11.65	AEG Research
Health	Interior Lighting	Advanced New Construction Designs	sqft	New	1.22	25	\$4.11	10%	25%	\$0.04	160.45	173.64	AEG Research
Health	Exterior Lighting	Advanced New Construction Designs	sqft	New	0.11	25	\$4.11	10%	25%	\$0.04	14.66	16.32	AEG Research
Health	Cooling	Strategic Energy Management	sqft	New	0.12	3	\$0.35	4%	28%	\$0.08	2.40	2.96	AEG Research
Health	Heating	Strategic Energy Management	sqft	New	0.51	3	\$0.35	4%	28%	\$0.08	0.37	0.38	AEG Research
Health	Ventilation	Strategic Energy Management	sqft	New	0.08	3	\$0.35	4%	28%	\$0.08	1.65	1.93	AEG Research

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Health	Water Heating	Strategic Energy Management	sqft	New	0.07	3	\$0.35	4%	28%	\$0.08	0.22	0.35	AEG Research
Health	Interior Lighting	Strategic Energy Management	sqft	New	0.19	3	\$0.35	4%	28%	\$0.08	3.43	4.77	AEG Research
Health	Exterior Lighting	Strategic Energy Management	sqft	New	0.02	3	\$0.35	4%	28%	\$0.08	0.31	0.47	AEG Research
Health	Refrigeration	Strategic Energy Management	sqft	New	0.03	3	\$0.35	4%	28%	\$0.08	0.49	0.48	AEG Research
Health	Office Equipment	Strategic Energy Management	sqft	New	0.03	3	\$0.35	4%	28%	\$0.08	0.65	0.60	AEG Research
Health	Cooling	Commissioning	sqft	New	0.17	3	\$0.83	15%	55%	\$0.17	5.54	6.82	AEG Research
Health	Heating	Commissioning	sqft	New	0.70	3	\$0.83	15%	55%	\$0.17	0.85	0.89	AEG Research
Health	Ventilation	Commissioning	sqft	New	0.11	3	\$0.83	15%	55%	\$0.17	3.80	4.46	AEG Research
Health	Water Heating	Commissioning	sqft	New	0.03	3	\$0.83	15%	55%	\$0.17	0.17	0.27	AEG Research
Health	Interior Lighting	Commissioning	sqft	New	0.21	3	\$0.83	15%	55%	\$0.17	6.59	9.16	AEG Research
Health	Exterior Lighting	Commissioning	sqft	New	0.02	3	\$0.83	15%	55%	\$0.17	0.60	0.91	AEG Research
Health	Refrigeration	Commissioning	sqft	New	0.06	3	\$0.83	15%	55%	\$0.17	1.90	1.85	AEG Research
Health	Cooling	Retrocommissioning	sqft	New	0.17	3	\$0.53	0%	0%	\$0.11	0.00	0.00	AEG Research
Health	Heating	Retrocommissioning	sqft	New	0.70	3	\$0.53	0%	0%	\$0.11	0.00	0.00	AEG Research
Health	Ventilation	Retrocommissioning	sqft	New	0.11	3	\$0.53	0%	0%	\$0.11	0.00	0.00	AEG Research
Health	Water Heating	Retrocommissioning	sqft	New	0.03	3	\$0.53	0%	0%	\$0.11	0.00	0.00	AEG Research
Health	Interior Lighting	Retrocommissioning	sqft	New	0.21	3	\$0.53	0%	0%	\$0.11	0.00	0.00	AEG Research
Health	Exterior Lighting	Retrocommissioning	sqft	New	0.02	3	\$0.53	0%	0%	\$0.11	0.00	0.00	AEG Research
Health	Refrigeration	Retrocommissioning	sqft	New	0.06	3	\$0.53	0%	0%	\$0.11	0.00	0.00	AEG Research
Health	Interior Lighting	Fruit Storage - Lighting Controls	sqft	New	0.15	10	\$0.09	0%	0%	\$0.05	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Health	Refrigeration	Fruit Storage Refrigeration Retrofit	sqft	New	0.19	10	\$1.09	0%	0%	\$0.77	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Health	Refrigeration	Fruit Storage Refrigeration Tuneup	sqft	New	0.05	3	\$0.23	0%	0%	\$1.57	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx

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Health	Refrigeration	Fruit Storage Retrofit - CO2 Scrub	sqft	New	0.09	10	\$3.13	0%	0%	\$4.55	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Health	Refrigeration	Fruit Storage Retrofit - Membrane	sqft	New	0.02	10	\$0.68	0%	0%	\$4.94	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
College	Cooling	Insulation - Ceiling	sqft roof	Existing	0.02	45	\$1.28	15%	35%	\$0.13	8.18	9.26	Building Energy Simulation Tool
College	Heating	Insulation - Ceiling	sqft roof	Existing	0.66	45	\$1.28	15%	35%	\$0.13	76.03	78.44	Building Energy Simulation Tool
College	Ventilation	Insulation - Ceiling	sqft roof	Existing	0.09	45	\$1.28	15%	35%	\$0.13	44.25	53.47	Building Energy Simulation Tool
College	Cooling	Insulation - Ducting	sqft duct	Existing	0.38	20	\$0.84	15%	35%	\$0.00	83.21	94.22	Building Energy Simulation Tool
College	Heating	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.84	15%	35%	\$0.00	0.00	0.00	Building Energy Simulation Tool
College	Ventilation	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.84	15%	35%	\$0.00	0.00	0.00	Building Energy Simulation Tool
College	Cooling	Building Shell - Cool Roofs	sqft roof	Existing	0.31	20	\$0.78	45%	50%	\$1.76	35.18	37.82	Building Energy Simulation Tool
College	Heating	Building Shell - Cool Roofs	sqft roof	Existing	-0.25	20	\$0.78	45%	50%	\$1.76	-7.31	-7.48	Building Energy Simulation Tool
College	Ventilation	Building Shell - Cool Roofs	sqft roof	Existing	-0.04	20	\$0.78	45%	50%	\$1.76	-4.21	-5.05	Building Energy Simulation Tool
College	Cooling	Insulation - Wall Cavity	sqft wall	Existing	-0.29	45	\$0.78	15%	35%	\$0.09	-40.24	-43.37	Building Energy Simulation Tool
College	Heating	Insulation - Wall Cavity	sqft wall	Existing	0.86	45	\$0.78	15%	35%	\$0.09	30.96	31.59	Building Energy Simulation Tool
College	Ventilation	Insulation - Wall Cavity	sqft wall	Existing	0.12	45	\$0.78	15%	35%	\$0.09	17.83	21.35	Building Energy Simulation Tool
College	Cooling	HVAC - Duct Repair and Sealing	tonCool	Existing	19.41	18	\$0.57	15%	50%	\$0.01	61.09	65.34	Building Energy Simulation Tool
College	Heating	HVAC - Duct Repair and Sealing	tonCool	Existing	-13.65	18	\$0.57	15%	50%	\$0.01	-11.11	-11.35	Building Energy Simulation Tool
College	Ventilation	HVAC - Duct Repair and Sealing	tonCool	Existing	-1.92	18	\$0.57	15%	50%	\$0.01	-6.40	-7.67	Building Energy Simulation Tool
College	Cooling	Windows - High Efficiency Glazing	sqft window	Existing	7.28	30	\$35.93	48%	48%	\$0.05	0.00	0.00	7th Power Plan
College	Heating	Windows - High Efficiency Glazing	sqft window	Existing	46.82	30	\$35.93	48%	48%	\$0.05	0.00	0.00	7th Power Plan

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College	Ventilation	Windows - High Efficiency Glazing	sqft window	Existing	3.83	30	\$35.93	48%	48%	\$0.05	0.00	0.00	7th Power Plan
College	Cooling	Chiller - Chilled Water Reset	ChillCtrl	Existing	13,141.60	10	\$884.85	15%	75%	\$0.01	130.16	143.18	AEG-BEST
College	Cooling	Chiller - Chilled Water Variable-Flow System	HP cool	Existing	362.92	15	\$332.55	15%	75%	\$0.09	493.28	560.46	AEG-BEST
College	Cooling	Chiller - Variable Speed Fans	HP fan	Existing	857.41	15	\$208.36	15%	75%	\$0.02	117.57	130.81	New Jersey TRM
College	Cooling	Water-Cooled Chiller - Condenser Water Reset	ChillCtrl	Existing	0.00	10	\$884.85	15%	75%	\$0.00	0.00	0.00	AEG-BEST
College	Cooling	HVAC - Economizer	HP cool	Existing	76.07	10	\$168.42	18%	75%	\$0.25	297.89	360.85	AEG-BEST
College	Heating	Space Heating - Heat Recovery Ventilator	CFM	Existing	1.27	14	\$5.08	3%	75%	\$0.44	318.83	338.28	7th Power Plan
College	Ventilation	Ventilation - ECM on VAV Boxes	sqft	Existing	0.27	18	\$0.25	15%	20%	\$0.08	31.99	38.43	7th Power Plan
College	Ventilation	Ventilation - Variable Speed Control	sqft	Existing	0.03	15	\$181.39	13%	50%	\$506.17	27.33	38.01	AEG-BEST
College	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.01	15	\$0.25	15%	75%	\$1.43	22.60	30.51	7th Power Plan
College	Cooling	Destratification Fans (HVLS)	Strat Fan	Existing	3,347.16	15	\$7,270.90	15%	25%	\$0.03	70.33	79.49	AEG Research
College	Heating	Destratification Fans (HVLS)	Strat Fan	Existing	20,033.29	15	\$7,270.90	15%	25%	\$0.03	110.02	114.01	AEG Research
College	Cooling	RTU - Maintenance	tonCool	Existing	27.80	3	\$35.00	15%	45%	\$0.34	39.45	51.82	AEG Research
College	Cooling	RTU - Advanced Controls	sqft	Existing	0.10	15	\$0.07	15%	45%	\$0.07	32.94	35.87	7th Power Plan
College	Cooling	RTU - Evaporative Precooler	tonCool	Existing	56.25	15	\$681.62	15%	75%	\$1.05	140.61	158.44	AEG Research
College	Cooling	Ductless Mini Split Heat Pump	tonCool	Existing	138.46	15	\$3,359.26	15%	25%	\$0.42	4.04	5.06	7th Power Plan
College	Heating	Ductless Mini Split Heat Pump	tonCool	Existing	646.05	15	\$3,359.26	15%	25%	\$0.42	65.21	69.78	7th Power Plan
College	Cooling	Thermostat - WiFi/Interactive	sqft	Existing	0.45	5	\$0.66	30%	40%	\$0.06	95.78	111.58	7th Power Plan
College	Heating	Thermostat - WiFi/Interactive	sqft	Existing	1.46	5	\$0.66	30%	40%	\$0.06	82.38	87.79	7th Power Plan
College	Ventilation	Thermostat - WiFi/Interactive	sqft	Existing	0.21	5	\$0.66	30%	40%	\$0.06	49.83	61.63	7th Power Plan
College	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	Existing	120.38	10	\$8.35	25%	65%	\$0.01	24.32	46.17	Illinois TRM

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College	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	Existing	124.61	10	\$11.64	25%	65%	-\$0.07	12.53	24.02	7th Power Plan
College	Water Heating	Water Heater - High Efficiency Circulation Pump	WHUnits	Existing	57.14	15	\$36.75	15%	25%	\$0.04	4.53	7.18	Hawaii TRM
College	Water Heating	Water Heater - Pipe Insulation	PipeFeet	Existing	494.46	15	\$14.88	16%	75%	\$0.00	62.81	108.88	AEG-BEST
College	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	Existing	82.19	4	\$144.04	25%	65%	-\$0.24	16.09	30.65	7th Power Plan
College	Water Heating	Water Heater - Thermostat Setback	WHUnits	Existing	57.17	2	\$5.00	15%	75%	\$0.02	29.82	56.07	Illinois TRM
College	Water Heating	Water Heater - Solar System	PipeFeet	Existing	1,701.41	20	\$215.28	1%	30%	\$0.01	104.56	185.57	AEG-BEST
College	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.38	15	\$0.35	3%	23%	\$0.08	209.41	269.91	7th Power Plan
College	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.52	15	\$0.58	3%	23%	\$0.09	281.73	371.60	7th Power Plan
College	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	Existing	315.15	15	\$54.41	1%	3%	\$0.01	5.85	8.86	7th Power Plan
College	Interior Lighting	Interior Lighting - Timeclocks and Timers	occ sens	Existing	0.00	8	\$111.67	7%	15%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
College	Interior Lighting	Interior Lighting - Skylights	1000 sqft	Existing	0.00	15	\$1,006.35	15%	30%	\$0.00	0.00	0.00	AEG Research
College	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	1000 sqft	Existing	257.40	16	\$1,807.69	5%	15%	\$0.53	55.80	89.75	7th Power Plan
College	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	Existing	2,700.59	11	\$30.80	15%	50%	\$0.00	218.72	316.81	Illinois TRM
College	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	ELtg Watts	Existing	0.37	8	\$0.63	15%	25%	\$0.20	70.62	112.39	7th Power Plan
College	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	Existing	34.81	8	\$55.10	15%	25%	\$0.19	38.56	60.38	Pacific Gas and Electric Research
College	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	Existing	40.14	7	\$3,400.00	15%	30%	\$10.23	64.48	108.21	AEG Research
College	Refrigeration	Refrigeration - Anti-Sweat Heater	Fridge Feet	Existing	10.68	8	\$48.18	4%	25%	\$0.69	0.93	1.37	7th Power Plan
College	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	Existing	24.07	4	\$10.44	4%	25%	\$0.11	2.15	2.59	Michigan Energy Measures Database
College	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	Existing	219.49	16	\$165.20	4%	25%	\$0.08	3.20	3.91	7th Power Plan

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College	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	Existing	19.40	15	\$335.85	0%	0%	\$1.80	0.00	0.00	7th Power Plan
College	Refrigeration	Refrigeration - Strip Curtain	Walkin Door	Existing	15.35	2	\$10.41	4%	25%	\$0.32	0.83	1.04	7th Power Plan
College	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	Existing	0.29	15	\$45.43	2%	13%	\$15.14	4.41	5.43	Annual Energy Outlook, 2015
College	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	Existing	6.16	15	\$313.82	2%	13%	\$5.05	7.78	9.48	Annual Energy Outlook, 2015
College	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	Existing	142.52	10	\$506.05	4%	25%	\$0.46	2.06	2.57	Vermont TRM
College	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	Existing	6.37	6	\$45.41	0%	0%	\$1.32	0.00	0.00	7th Power Plan
College	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	Existing	0.51	8	\$3.72	0%	0%	\$1.09	0.00	0.00	7th Power Plan
College	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	Existing	120.61	5	\$45.85	0%	0%	\$0.08	0.00	0.00	Illinois TRM
College	Refrigeration	Grocery - ECMs for Display Cases	Fridge Case	Existing	26.64	16	\$165.20	4%	25%	\$0.63	0.82	0.95	7th Power Plan
College	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	Existing	1,261.65	5	\$187.94	25%	75%	\$0.03	11.40	11.87	Illinois TRM
College	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	Existing	2,835.75	18	\$8,526.67	25%	50%	\$0.24	67.09	81.90	7th Power Plan
College	Office Equipment	Office Equipment - Smart Power Strips	Smart Strip	Existing	27.81	4	\$41.63	10%	50%	\$0.35	64.52	62.30	7th Power Plan
College	Cooling	Lodging - Guest Room Controls	LodgUnit	Existing	128.08	15	\$260.00	0%	0%	\$10.00	0.00	0.00	AEG-BEST
College	Heating	Lodging - Guest Room Controls	LodgUnit	Existing	-364.09	15	\$260.00	0%	0%	\$10.00	0.00	0.00	AEG-BEST
College	Office Equipment	Data Center - Best Practice Measures	sqft	Existing	0.01	5	\$0.00	0%	0%	\$0.02	0.00	0.00	com-datacenters-7p_v5p.xlsx
College	Cooling	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.01	0%	0%	\$0.04	0.00	0.00	com-datacenters-7p_v5p.xlsx
College	Ventilation	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.01	0%	0%	\$0.04	0.00	0.00	com-datacenters-7p_v5p.xlsx
College	Interior Lighting	Data Center - Commercially Available Measures	sqft	Existing	0.03	8	\$0.01	0%	0%	\$0.04	0.00	0.00	com-datacenters-7p_v5p.xlsx
College	Office Equipment	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.01	0%	0%	\$0.04	0.00	0.00	com-datacenters-7p_v5p.xlsx

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College	Cooling	Data Center - Cutting Edge Measures	sqft	Existing	0.04	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
College	Office Equipment	Data Center - Cutting Edge Measures	sqft	Existing	0.00	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
College	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	Existing	2,277.95	18	\$4,092.80	0%	5%	\$0.14	8.94	10.89	7th Power Plan
College	Miscellaneous	Pool Pump - Timer	perBldg	Existing	355.75	10	\$85.22	15%	75%	\$0.03	15.93	16.01	Ontario Power TRM
College	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	Existing	3,389.11	6	\$35.93	1%	3%	\$0.00	20.51	20.57	7th Power Plan
College	Cooling	Advanced New Construction Designs	sqft	Existing	0.79	25	\$4.11	0%	0%	\$0.06	0.00	0.00	AEG Research
College	Heating	Advanced New Construction Designs	sqft	Existing	2.58	25	\$4.11	0%	0%	\$0.06	0.00	0.00	AEG Research
College	Ventilation	Advanced New Construction Designs	sqft	Existing	0.36	25	\$4.11	0%	0%	\$0.06	0.00	0.00	AEG Research
College	Water Heating	Advanced New Construction Designs	sqft	Existing	0.37	25	\$4.11	0%	0%	\$0.06	0.00	0.00	AEG Research
College	Interior Lighting	Advanced New Construction Designs	sqft	Existing	0.72	25	\$4.11	0%	0%	\$0.06	0.00	0.00	AEG Research
College	Exterior Lighting	Advanced New Construction Designs	sqft	Existing	0.21	25	\$4.11	0%	0%	\$0.06	0.00	0.00	AEG Research
College	Cooling	Strategic Energy Management	sqft	Existing	0.11	3	\$0.25	3%	29%	\$0.09	67.67	88.21	AEG Research
College	Heating	Strategic Energy Management	sqft	Existing	0.37	3	\$0.25	3%	29%	\$0.09	59.40	67.01	AEG Research
College	Ventilation	Strategic Energy Management	sqft	Existing	0.06	3	\$0.25	3%	29%	\$0.09	36.14	49.04	AEG Research
College	Water Heating	Strategic Energy Management	sqft	Existing	0.06	3	\$0.25	3%	29%	\$0.09	17.85	34.25	AEG Research
College	Interior Lighting	Strategic Energy Management	sqft	Existing	0.11	3	\$0.25	3%	29%	\$0.09	61.75	100.42	AEG Research
College	Exterior Lighting	Strategic Energy Management	sqft	Existing	0.03	3	\$0.25	3%	29%	\$0.09	17.21	28.25	AEG Research
College	Refrigeration	Strategic Energy Management	sqft	Existing	0.01	3	\$0.25	3%	29%	\$0.09	5.22	4.95	AEG Research
College	Office Equipment	Strategic Energy Management	sqft	Existing	0.03	3	\$0.25	3%	29%	\$0.09	24.99	24.59	AEG Research
College	Cooling	Commissioning	sqft	Existing	0.15	3	\$0.60	0%	0%	\$0.18	0.00	0.00	AEG Research

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College	Heating	Commissioning	sqft	Existing	0.50	3	\$0.60	0%	0%	\$0.18	0.00	0.00	AEG Research
College	Ventilation	Commissioning	sqft	Existing	0.07	3	\$0.60	0%	0%	\$0.18	0.00	0.00	AEG Research
College	Water Heating	Commissioning	sqft	Existing	0.03	3	\$0.60	0%	0%	\$0.18	0.00	0.00	AEG Research
College	Interior Lighting	Commissioning	sqft	Existing	0.12	3	\$0.60	0%	0%	\$0.18	0.00	0.00	AEG Research
College	Exterior Lighting	Commissioning	sqft	Existing	0.03	3	\$0.60	0%	0%	\$0.18	0.00	0.00	AEG Research
College	Refrigeration	Commissioning	sqft	Existing	0.02	3	\$0.60	0%	0%	\$0.18	0.00	0.00	AEG Research
College	Cooling	Retrocommissioning	sqft	Existing	0.16	3	\$0.38	11%	52%	\$0.11	145.86	191.59	AEG Research
College	Heating	Retrocommissioning	sqft	Existing	0.51	3	\$0.38	11%	52%	\$0.11	128.03	145.53	AEG Research
College	Ventilation	Retrocommissioning	sqft	Existing	0.08	3	\$0.38	11%	52%	\$0.11	77.91	106.51	AEG Research
College	Water Heating	Retrocommissioning	sqft	Existing	0.03	3	\$0.38	11%	52%	\$0.11	12.83	24.80	AEG Research
College	Interior Lighting	Retrocommissioning	sqft	Existing	0.13	3	\$0.38	11%	52%	\$0.11	110.92	181.77	AEG Research
College	Exterior Lighting	Retrocommissioning	sqft	Existing	0.03	3	\$0.38	11%	52%	\$0.11	30.91	51.13	AEG Research
College	Refrigeration	Retrocommissioning	sqft	Existing	0.02	3	\$0.38	11%	52%	\$0.11	18.77	17.92	AEG Research
College	Interior Lighting	Fruit Storage - Lighting Controls	sqft	Existing	0.09	10	\$0.09	0%	0%	\$0.09	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
College	Refrigeration	Fruit Storage Refrigeration Retrofit	sqft	Existing	0.05	10	\$1.09	0%	0%	\$2.82	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
College	Refrigeration	Fruit Storage Refrigeration Tuneup	sqft	Existing	0.01	3	\$0.23	0%	0%	\$5.78	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
College	Refrigeration	Fruit Storage Retrofit - CO2 Scrub	sqft	Existing	0.02	10	\$3.13	0%	0%	\$16.72	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
College	Refrigeration	Fruit Storage Retrofit - Membrane	sqft	Existing	0.00	10	\$0.68	0%	0%	\$18.15	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
College	Cooling	Insulation - Ceiling	sqft roof	New	0.00	45	\$1.28	15%	50%	\$0.68	0.00	0.00	Building Energy Simulation Tool
College	Heating	Insulation - Ceiling	sqft roof	New	0.12	45	\$1.28	15%	50%	\$0.68	7.47	7.56	Building Energy Simulation Tool
College	Ventilation	Insulation - Ceiling	sqft roof	New	0.01	45	\$1.28	15%	50%	\$0.68	4.50	5.02	Building Energy Simulation Tool
College	Cooling	Insulation - Ducting	sqft duct	New	0.32	20	\$0.84	15%	50%	\$0.00	41.10	42.02	Building Energy Simulation Tool

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College	Heating	Insulation - Ducting	sqft duct	New	0.00	20	\$0.84	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
College	Ventilation	Insulation - Ducting	sqft duct	New	0.00	20	\$0.84	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
College	Cooling	Building Shell - Cool Roofs	sqft roof	New	0.11	20	\$0.78	45%	50%	\$1.10	3.97	4.08	Building Energy Simulation Tool
College	Heating	Building Shell - Cool Roofs	sqft roof	New	-0.05	20	\$0.78	45%	50%	\$1.10	-0.47	-0.48	Building Energy Simulation Tool
College	Ventilation	Building Shell - Cool Roofs	sqft roof	New	-0.01	20	\$0.78	45%	50%	\$1.10	-0.29	-0.32	Building Energy Simulation Tool
College	Cooling	Insulation - Wall Cavity	sqft wall	New	-0.02	45	\$0.78	15%	50%	\$1.00	-1.89	-1.94	Building Energy Simulation Tool
College	Heating	Insulation - Wall Cavity	sqft wall	New	0.08	45	\$0.78	15%	50%	\$1.00	1.46	1.46	Building Energy Simulation Tool
College	Ventilation	Insulation - Wall Cavity	sqft wall	New	0.01	45	\$0.78	15%	50%	\$1.00	0.89	0.97	Building Energy Simulation Tool
College	Cooling	HVAC - Duct Repair and Sealing	tonCool	New	15.66	18	\$0.57	15%	35%	\$0.05	8.67	8.92	Building Energy Simulation Tool
College	Heating	HVAC - Duct Repair and Sealing	tonCool	New	-14.43	18	\$0.57	15%	35%	\$0.05	-1.98	-1.99	Building Energy Simulation Tool
College	Ventilation	HVAC - Duct Repair and Sealing	tonCool	New	-1.55	18	\$0.57	15%	35%	\$0.05	-1.20	-1.33	Building Energy Simulation Tool
College	Cooling	Windows - High Efficiency Glazing	sqft window	New	6.26	30	\$35.93	66%	66%	\$0.05	0.00	0.00	7th Power Plan
College	Heating	Windows - High Efficiency Glazing	sqft window	New	43.06	30	\$35.93	66%	66%	\$0.05	0.00	0.00	7th Power Plan
College	Ventilation	Windows - High Efficiency Glazing	sqft window	New	2.68	30	\$35.93	66%	66%	\$0.05	0.00	0.00	7th Power Plan
College	Cooling	Chiller - Chilled Water Reset	ChillCtrl	New	11,343.82	10	\$884.85	15%	75%	\$0.01	14.50	15.42	AEG-BEST
College	Cooling	Chiller - Chilled Water Variable-Flow System	HP cool	New	320.66	15	\$332.55	15%	75%	\$0.09	73.42	77.38	AEG-BEST
College	Cooling	Chiller - Variable Speed Fans	HP fan	New	746.96	15	\$208.36	15%	75%	\$0.03	17.08	17.99	New Jersey TRM
College	Cooling	Water-Cooled Chiller - Condenser Water Reset	ChillCtrl	New	0.00	10	\$884.85	15%	75%	\$0.00	0.00	0.00	AEG-BEST
College	Cooling	HVAC - Economizer	HP cool	New	67.02	10	\$168.42	18%	75%	\$0.27	34.88	38.26	AEG-BEST

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College	Heating	Space Heating - Heat Recovery Ventilator	CFM	New	1.16	14	\$5.08	6%	75%	\$0.47	42.66	44.04	7th Power Plan
College	Ventilation	Ventilation - ECM on VAV Boxes	sqft	New	0.19	18	\$0.25	15%	20%	\$0.07	8.98	9.91	7th Power Plan
College	Ventilation	Ventilation - Variable Speed Control	sqft	New	0.02	15	\$181.39	19%	50%	\$501.07	3.67	4.44	AEG-BEST
College	Ventilation	Ventilation - Demand Controlled	sqft	New	0.01	15	\$0.25	15%	75%	\$1.41	3.48	4.22	7th Power Plan
College	Cooling	Destratification Fans (HVLS)	Strat Fan	New	2,859.10	15	\$7,270.90	15%	25%	\$0.04	10.10	10.64	AEG Research
College	Heating	Destratification Fans (HVLS)	Strat Fan	New	18,240.39	15	\$7,270.90	15%	25%	\$0.04	15.90	16.03	AEG Research
College	Cooling	RTU - Maintenance	tonCool	New	24.48	3	\$35.00	15%	45%	\$0.37	1.09	1.28	AEG Research
College	Cooling	RTU - Advanced Controls	sqft	New	0.08	15	\$0.07	15%	45%	\$0.07	8.27	8.55	7th Power Plan
College	Cooling	RTU - Evaporative Precooler	tonCool	New	49.36	15	\$681.62	15%	75%	\$1.16	47.56	48.99	AEG Research
College	Cooling	Ductless Mini Split Heat Pump	tonCool	New	114.36	15	\$3,359.26	15%	25%	\$0.45	0.78	0.83	7th Power Plan
College	Heating	Ductless Mini Split Heat Pump	tonCool	New	613.25	15	\$3,359.26	15%	25%	\$0.45	13.02	13.33	7th Power Plan
College	Cooling	Thermostat - WiFi/Interactive	sqft	New	0.40	5	\$0.66	30%	40%	\$0.06	3.58	3.99	7th Power Plan
College	Heating	Thermostat - WiFi/Interactive	sqft	New	1.36	5	\$0.66	30%	40%	\$0.06	2.98	3.10	7th Power Plan
College	Ventilation	Thermostat - WiFi/Interactive	sqft	New	0.15	5	\$0.66	30%	40%	\$0.06	1.82	2.30	7th Power Plan
College	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	New	87.73	10	\$8.35	25%	65%	\$0.01	2.63	3.83	Illinois TRM
College	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	New	91.52	10	\$11.64	25%	65%	-\$0.07	1.37	2.00	7th Power Plan
College	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	New	42.14	15	\$36.75	15%	25%	\$0.04	1.28	1.53	Hawaii TRM
College	Water Heating	Water Heater - Pipe Insulation	PipeFeet	New	347.26	15	\$14.88	1%	75%	\$0.00	12.43	16.99	AEG-BEST
College	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	New	60.26	4	\$144.04	25%	65%	-\$0.24	0.80	1.29	7th Power Plan
College	Water Heating	Water Heater - Thermostat Setback	WHunits	New	42.18	2	\$5.00	15%	75%	\$0.02	0.43	0.73	Illinois TRM
College	Water Heating	Water Heater - Solar System	PipeFeet	New	1,208.99	20	\$215.28	1%	30%	\$0.01	17.51	23.77	AEG-BEST

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College	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.32	15	\$0.35	11%	23%	\$0.08	65.59	74.73	7th Power Plan
College	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.44	15	\$0.58	11%	23%	\$0.09	90.12	103.06	7th Power Plan
College	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	New	265.38	15	\$54.41	1%	3%	\$0.01	0.76	0.92	7th Power Plan
College	Interior Lighting	Interior Lighting - Timeclocks and Timers	occ sens	New	0.00	8	\$111.67	7%	15%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
College	Interior Lighting	Interior Lighting - Skylights	1000 sqft	New	0.00	15	\$1,006.35	18%	33%	\$0.00	0.00	0.00	AEG Research
College	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	1000 sqft	New	214.01	16	\$1,807.69	5%	15%	\$0.54	9.35	11.58	7th Power Plan
College	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	New	2,245.23	11	\$30.80	15%	50%	\$0.00	28.18	34.53	Illinois TRM
College	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	ELtg Watts	New	0.30	8	\$0.63	15%	25%	\$0.20	7.01	9.43	7th Power Plan
College	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	New	27.23	8	\$55.10	15%	25%	\$0.19	3.74	5.04	Pacific Gas and Electric Research
College	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	New	33.18	7	\$3,400.00	15%	30%	\$10.50	6.06	8.18	AEG Research
College	Refrigeration	Refrigeration - Anti-Sweat Heater	Fridge Feet	New	7.69	8	\$48.18	4%	25%	\$0.96	0.08	0.09	7th Power Plan
College	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	New	19.86	4	\$10.44	4%	25%	\$0.14	0.09	0.09	Michigan Energy Measures Database
College	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	New	181.70	16	\$165.20	4%	25%	\$0.09	0.51	0.52	7th Power Plan
College	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	New	18.17	15	\$335.85	0%	0%	\$1.95	0.00	0.00	7th Power Plan
College	Refrigeration	Refrigeration - Strip Curtain	Walkin Door	New	13.78	2	\$10.41	4%	25%	\$0.36	0.01	0.01	7th Power Plan
College	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	New	0.29	15	\$45.43	2%	13%	\$16.45	0.74	0.75	Annual Energy Outlook, 2015
College	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	New	6.04	15	\$313.82	2%	13%	\$5.48	1.29	1.32	Annual Energy Outlook, 2015
College	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	New	120.74	10	\$506.05	4%	25%	\$0.55	0.25	0.25	Vermont TRM
College	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	New	5.85	6	\$45.41	0%	0%	\$1.46	0.00	0.00	7th Power Plan

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College	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	New	0.47	8	\$3.72	0%	0%	\$1.21	0.00	0.00	7th Power Plan
College	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	New	113.09	5	\$45.85	0%	0%	\$0.09	0.00	0.00	Illinois TRM
College	Refrigeration	Grocery - ECMs for Display Cases	Fridge Case	New	24.33	16	\$165.20	4%	25%	\$0.70	0.13	0.13	7th Power Plan
College	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	New	1,233.66	5	\$187.94	25%	75%	\$0.03	0.63	0.64	Illinois TRM
College	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	New	1,981.60	18	\$8,526.67	25%	50%	\$0.24	19.27	21.29	7th Power Plan
College	Office Equipment	Office Equipment - Smart Power Strips	Smart Strip	New	26.96	4	\$41.63	10%	50%	\$0.36	2.87	2.62	7th Power Plan
College	Cooling	Lodging - Guest Room Controls	LodgUnit	New	109.33	15	\$260.00	0%	0%	\$10.00	0.00	0.00	AEG-BEST
College	Heating	Lodging - Guest Room Controls	LodgUnit	New	-356.34	15	\$260.00	0%	0%	\$10.00	0.00	0.00	AEG-BEST
College	Office Equipment	Data Center - Best Practice Measures	sqft	New	0.01	5	\$0.00	0%	0%	\$0.02	0.00	0.00	com-datacenters-7p_v5p.xlsx
College	Cooling	Data Center - Commercially Available Measures	sqft	New	0.01	8	\$0.01	0%	0%	\$0.03	0.00	0.00	com-datacenters-7p_v5p.xlsx
College	Ventilation	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.01	0%	0%	\$0.03	0.00	0.00	com-datacenters-7p_v5p.xlsx
College	Interior Lighting	Data Center - Commercially Available Measures	sqft	New	0.02	8	\$0.01	0%	0%	\$0.03	0.00	0.00	com-datacenters-7p_v5p.xlsx
College	Office Equipment	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.01	0%	0%	\$0.03	0.00	0.00	com-datacenters-7p_v5p.xlsx
College	Cooling	Data Center - Cutting Edge Measures	sqft	New	0.03	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
College	Office Equipment	Data Center - Cutting Edge Measures	sqft	New	0.00	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
College	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	New	1,590.68	18	\$4,092.80	0%	5%	\$0.14	2.56	2.83	7th Power Plan
College	Miscellaneous	Pool Pump - Timer	perBldg	New	353.97	10	\$85.22	15%	75%	\$0.03	2.11	2.12	Ontario Power TRM
College	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	New	3,367.74	6	\$35.93	1%	3%	\$0.00	1.26	1.27	7th Power Plan
College	Cooling	Advanced New Construction Designs	sqft	New	0.70	25	\$4.11	10%	30%	\$0.07	115.95	118.73	AEG Research

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College	Heating	Advanced New Construction Designs	sqft	New	2.39	25	\$4.11	10%	30%	\$0.07	97.11	97.40	AEG Research
College	Ventilation	Advanced New Construction Designs	sqft	New	0.26	25	\$4.11	10%	30%	\$0.07	58.48	64.99	AEG Research
College	Water Heating	Advanced New Construction Designs	sqft	New	0.27	25	\$4.11	10%	30%	\$0.07	32.27	37.33	AEG Research
College	Interior Lighting	Advanced New Construction Designs	sqft	New	0.60	25	\$4.11	10%	30%	\$0.07	104.46	114.64	AEG Research
College	Exterior Lighting	Advanced New Construction Designs	sqft	New	0.17	25	\$4.11	10%	30%	\$0.07	28.67	32.26	AEG Research
College	Cooling	Strategic Energy Management	sqft	New	0.10	3	\$0.23	3%	29%	\$0.08	1.96	2.28	AEG Research
College	Heating	Strategic Energy Management	sqft	New	0.35	3	\$0.23	3%	29%	\$0.08	1.65	1.74	AEG Research
College	Ventilation	Strategic Energy Management	sqft	New	0.04	3	\$0.23	3%	29%	\$0.08	1.01	1.31	AEG Research
College	Water Heating	Strategic Energy Management	sqft	New	0.04	3	\$0.23	3%	29%	\$0.08	0.56	0.93	AEG Research
College	Interior Lighting	Strategic Energy Management	sqft	New	0.09	3	\$0.23	3%	29%	\$0.08	1.81	2.56	AEG Research
College	Exterior Lighting	Strategic Energy Management	sqft	New	0.02	3	\$0.23	3%	29%	\$0.08	0.49	0.72	AEG Research
College	Refrigeration	Strategic Energy Management	sqft	New	0.01	3	\$0.23	3%	29%	\$0.08	0.14	0.12	AEG Research
College	Office Equipment	Strategic Energy Management	sqft	New	0.03	3	\$0.23	3%	29%	\$0.08	0.71	0.65	AEG Research
College	Cooling	Commissioning	sqft	New	0.14	3	\$0.55	11%	52%	\$0.17	4.29	4.97	AEG Research
College	Heating	Commissioning	sqft	New	0.49	3	\$0.55	11%	52%	\$0.17	3.60	3.79	AEG Research
College	Ventilation	Commissioning	sqft	New	0.05	3	\$0.55	11%	52%	\$0.17	2.20	2.86	AEG Research
College	Water Heating	Commissioning	sqft	New	0.02	3	\$0.55	11%	52%	\$0.17	0.41	0.68	AEG Research
College	Interior Lighting	Commissioning	sqft	New	0.11	3	\$0.55	11%	52%	\$0.17	3.29	4.65	AEG Research
College	Exterior Lighting	Commissioning	sqft	New	0.03	3	\$0.55	11%	52%	\$0.17	0.89	1.30	AEG Research
College	Refrigeration	Commissioning	sqft	New	0.01	3	\$0.55	11%	52%	\$0.17	0.49	0.42	AEG Research
College	Cooling	Retrocommissioning	sqft	New	0.14	3	\$0.35	0%	0%	\$0.11	0.00	0.00	AEG Research
College	Heating	Retrocommissioning	sqft	New	0.49	3	\$0.35	0%	0%	\$0.11	0.00	0.00	AEG Research

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
College	Ventilation	Retrocommissioning	sqft	New	0.05	3	\$0.35	0%	0%	\$0.11	0.00	0.00	AEG Research
College	Water Heating	Retrocommissioning	sqft	New	0.02	3	\$0.35	0%	0%	\$0.11	0.00	0.00	AEG Research
College	Interior Lighting	Retrocommissioning	sqft	New	0.11	3	\$0.35	0%	0%	\$0.11	0.00	0.00	AEG Research
College	Exterior Lighting	Retrocommissioning	sqft	New	0.03	3	\$0.35	0%	0%	\$0.11	0.00	0.00	AEG Research
College	Refrigeration	Retrocommissioning	sqft	New	0.01	3	\$0.35	0%	0%	\$0.11	0.00	0.00	AEG Research
College	Interior Lighting	Fruit Storage - Lighting Controls	sqft	New	0.08	10	\$0.09	0%	0%	\$0.09	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
College	Refrigeration	Fruit Storage Refrigeration Retrofit	sqft	New	0.04	10	\$1.09	0%	0%	\$3.20	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
College	Refrigeration	Fruit Storage Refrigeration Tuneup	sqft	New	0.01	3	\$0.23	0%	0%	\$6.57	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
College	Refrigeration	Fruit Storage Retrofit - CO2 Scrub	sqft	New	0.02	10	\$3.13	0%	0%	\$19.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
College	Refrigeration	Fruit Storage Retrofit - Membrane	sqft	New	0.00	10	\$0.68	0%	0%	\$20.61	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
School	Cooling	Insulation - Ceiling	sqft roof	Existing	0.01	45	\$1.28	15%	35%	\$0.21	8.89	10.01	Building Energy Simulation Tool
School	Heating	Insulation - Ceiling	sqft roof	Existing	0.41	45	\$1.28	15%	35%	\$0.21	84.34	86.61	Building Energy Simulation Tool
School	Ventilation	Insulation - Ceiling	sqft roof	Existing	0.05	45	\$1.28	15%	35%	\$0.21	62.11	74.81	Building Energy Simulation Tool
School	Cooling	Insulation - Ducting	sqft duct	Existing	0.21	20	\$0.84	15%	35%	\$0.00	90.46	101.86	Building Energy Simulation Tool
School	Heating	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.84	15%	35%	\$0.00	0.00	0.00	Building Energy Simulation Tool
School	Ventilation	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.84	15%	35%	\$0.00	0.00	0.00	Building Energy Simulation Tool
School	Cooling	Building Shell - Cool Roofs	sqft roof	Existing	0.17	20	\$0.78	45%	50%	\$15.41	38.24	40.84	Building Energy Simulation Tool
School	Heating	Building Shell - Cool Roofs	sqft roof	Existing	-0.15	20	\$0.78	45%	50%	\$15.41	-7.94	-8.15	Building Energy Simulation Tool
School	Ventilation	Building Shell - Cool Roofs	sqft roof	Existing	-0.02	20	\$0.78	45%	50%	\$15.41	-5.91	-7.07	Building Energy Simulation Tool
School	Cooling	Insulation - Wall Cavity	sqft wall	Existing	-0.16	45	\$0.78	15%	35%	\$0.15	-43.36	-46.65	Building Energy Simulation Tool

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
School	Heating	Insulation - Wall Cavity	sqft wall	Existing	0.52	45	\$0.78	15%	35%	\$0.15	33.63	34.42	Building Energy Simulation Tool
School	Ventilation	Insulation - Wall Cavity	sqft wall	Existing	0.07	45	\$0.78	15%	35%	\$0.15	25.02	29.87	Building Energy Simulation Tool
School	Cooling	HVAC - Duct Repair and Sealing	tonCool	Existing	10.50	18	\$0.57	15%	50%	\$0.03	65.47	70.11	Building Energy Simulation Tool
School	Heating	HVAC - Duct Repair and Sealing	tonCool	Existing	-8.32	18	\$0.57	15%	50%	\$0.03	-12.07	-12.37	Building Energy Simulation Tool
School	Ventilation	HVAC - Duct Repair and Sealing	tonCool	Existing	-1.05	18	\$0.57	15%	50%	\$0.03	-8.98	-10.73	Building Energy Simulation Tool
School	Cooling	Windows - High Efficiency Glazing	sqft window	Existing	3.97	30	\$35.93	48%	48%	\$0.09	0.00	0.00	7th Power Plan
School	Heating	Windows - High Efficiency Glazing	sqft window	Existing	28.99	30	\$35.93	48%	48%	\$0.09	0.00	0.00	7th Power Plan
School	Ventilation	Windows - High Efficiency Glazing	sqft window	Existing	2.10	30	\$35.93	48%	48%	\$0.09	0.00	0.00	7th Power Plan
School	Cooling	Chiller - Chilled Water Reset	ChillCtrl	Existing	7,132.52	10	\$884.85	15%	75%	\$0.02	139.09	152.74	AEG-BEST
School	Cooling	Chiller - Chilled Water Variable-Flow System	HP cool	Existing	198.12	15	\$332.55	15%	75%	\$0.16	530.72	600.06	AEG-BEST
School	Cooling	Chiller - Variable Speed Fans	HP fan	Existing	465.45	15	\$208.36	15%	75%	\$0.04	125.71	139.55	New Jersey TRM
School	Cooling	Water-Cooled Chiller - Condenser Water Reset	ChillCtrl	Existing	0.00	10	\$884.85	15%	75%	\$0.00	0.00	0.00	AEG-BEST
School	Cooling	HVAC - Economizer	HP cool	Existing	41.56	10	\$168.42	18%	75%	\$0.46	321.30	386.38	AEG-BEST
School	Heating	Space Heating - Heat Recovery Ventilator	CFM	Existing	0.92	14	\$5.08	3%	75%	\$0.62	350.89	369.47	7th Power Plan
School	Ventilation	Ventilation - ECM on VAV Boxes	sqft	Existing	0.15	18	\$0.25	15%	20%	\$0.14	44.89	53.76	7th Power Plan
School	Ventilation	Ventilation - Variable Speed Control	sqft	Existing	0.02	15	\$181.39	13%	50%	\$925.99	38.32	52.82	AEG-BEST
School	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.01	15	\$0.25	15%	75%	\$2.61	31.59	42.38	7th Power Plan
School	Cooling	Destratification Fans (HVLS)	Strat Fan	Existing	1,806.91	15	\$7,270.90	15%	15%	\$0.06	0.00	0.00	AEG Research
School	Heating	Destratification Fans (HVLS)	Strat Fan	Existing	12,200.87	15	\$7,270.90	15%	15%	\$0.06	0.00	0.00	AEG Research
School	Cooling	RTU - Maintenance	tonCool	Existing	15.20	3	\$35.00	15%	45%	\$0.62	42.58	55.36	AEG Research
School	Cooling	RTU - Advanced Controls	sqft	Existing	0.11	15	\$0.07	15%	45%	\$0.06	72.36	78.34	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
School	Cooling	RTU - Evaporative Precooler	tonCool	Existing	30.75	15	\$681.62	15%	75%	\$1.94	153.68	172.22	AEG Research
School	Cooling	Ductless Mini Split Heat Pump	tonCool	Existing	75.69	15	\$3,359.26	15%	25%	\$0.68	4.38	5.44	7th Power Plan
School	Heating	Ductless Mini Split Heat Pump	tonCool	Existing	415.38	15	\$3,359.26	15%	25%	\$0.68	63.47	67.12	7th Power Plan
School	Cooling	Thermostat - WiFi/Interactive	sqft	Existing	0.25	5	\$0.66	30%	40%	\$0.10	104.30	120.66	7th Power Plan
School	Heating	Thermostat - WiFi/Interactive	sqft	Existing	0.90	5	\$0.66	30%	40%	\$0.10	91.57	96.97	7th Power Plan
School	Ventilation	Thermostat - WiFi/Interactive	sqft	Existing	0.12	5	\$0.66	30%	40%	\$0.10	70.20	86.34	7th Power Plan
School	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	Existing	67.72	10	\$8.35	25%	65%	\$0.01	31.48	59.01	Illinois TRM
School	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	Existing	70.11	10	\$11.64	25%	65%	-\$0.13	16.22	30.70	7th Power Plan
School	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	Existing	57.67	15	\$36.75	15%	25%	\$0.04	5.93	9.27	Hawaii TRM
School	Water Heating	Water Heater - Pipe Insulation	PipeFeet	Existing	278.00	15	\$14.88	16%	75%	\$0.00	81.18	139.38	AEG-BEST
School	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	Existing	46.25	4	\$144.04	25%	65%	-\$0.43	20.89	39.24	7th Power Plan
School	Water Heating	Water Heater - Thermostat Setback	WHunits	Existing	57.69	2	\$5.00	15%	75%	\$0.02	38.68	71.79	Illinois TRM
School	Water Heating	Water Heater - Solar System	PipeFeet	Existing	956.78	20	\$215.28	1%	30%	\$0.01	135.28	237.55	AEG-BEST
School	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.24	15	\$0.35	3%	23%	\$0.12	345.41	443.77	7th Power Plan
School	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.33	15	\$0.58	3%	23%	\$0.14	465.44	611.25	7th Power Plan
School	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	Existing	210.75	15	\$54.41	1%	3%	\$0.02	9.76	15.45	7th Power Plan
School	Interior Lighting	Interior Lighting - Timeclocks and Timers	occ sens	Existing	0.00	8	\$111.67	7%	15%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
School	Interior Lighting	Interior Lighting - Skylights	1000 sqft	Existing	0.00	15	\$1,006.35	15%	30%	\$0.00	0.00	0.00	AEG Research
School	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	1000 sqft	Existing	176.98	16	\$1,807.69	5%	15%	\$0.77	98.30	156.68	7th Power Plan

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School	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	Existing	1,856.05	11	\$30.80	15%	50%	\$0.00	384.17	552.96	Illinois TRM
School	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	ELtg Watts	Existing	0.33	8	\$0.63	15%	25%	\$0.22	132.11	212.38	7th Power Plan
School	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	Existing	31.92	8	\$55.10	15%	25%	\$0.20	72.08	114.10	Pacific Gas and Electric Research
School	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	Existing	36.90	7	\$3,400.00	15%	30%	\$11.08	121.13	204.64	AEG Research
School	Refrigeration	Refrigeration - Anti-Sweat Heater	Fridge Feet	Existing	12.87	8	\$48.18	4%	25%	\$0.57	6.73	9.91	7th Power Plan
School	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	Existing	27.86	4	\$10.44	4%	25%	\$0.10	13.59	17.27	Michigan Energy Measures Database
School	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	Existing	264.76	16	\$165.20	4%	25%	\$0.07	20.14	25.24	7th Power Plan
School	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	Existing	23.54	15	\$335.85	0%	0%	\$1.48	0.00	0.00	7th Power Plan
School	Refrigeration	Refrigeration - Strip Curtain	Walkin Door	Existing	18.87	2	\$10.41	4%	25%	\$0.26	5.14	6.49	7th Power Plan
School	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	Existing	0.35	15	\$45.43	2%	13%	\$12.47	31.18	38.38	Annual Energy Outlook, 2015
School	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	Existing	7.82	15	\$313.82	2%	13%	\$4.15	58.40	68.64	Annual Energy Outlook, 2015
School	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	Existing	171.82	10	\$506.05	4%	25%	\$0.38	12.95	16.62	Vermont TRM
School	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	Existing	7.67	6	\$45.41	0%	0%	\$1.09	0.00	0.00	7th Power Plan
School	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	Existing	0.62	8	\$3.72	0%	0%	\$0.91	0.00	0.00	7th Power Plan
School	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	Existing	145.31	5	\$45.85	0%	0%	\$0.07	0.00	0.00	Illinois TRM
School	Refrigeration	Grocery - ECMs for Display Cases	Fridge Case	Existing	32.10	16	\$165.20	4%	25%	\$0.52	5.90	6.86	7th Power Plan
School	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	Existing	1,261.47	5	\$187.94	25%	75%	\$0.03	79.91	83.29	Illinois TRM
School	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	Existing	1,556.97	18	\$8,526.67	25%	50%	\$0.44	94.48	114.74	7th Power Plan
School	Office Equipment	Office Equipment - Smart Power Strips	Smart Strip	Existing	21.36	4	\$41.63	10%	50%	\$0.46	127.55	120.58	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
School	Cooling	Lodging - Guest Room Controls	LodgUnit	Existing	70.14	15	\$260.00	0%	0%	\$10.00	0.00	0.00	AEG-BEST
School	Heating	Lodging - Guest Room Controls	LodgUnit	Existing	-234.76	15	\$260.00	0%	0%	\$10.00	0.00	0.00	AEG-BEST
School	Office Equipment	Data Center - Best Practice Measures	sqft	Existing	0.02	5	\$0.00	0%	0%	\$0.02	0.00	0.00	com-datacenters-7p_v5p.xlsx
School	Cooling	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.01	0%	0%	\$0.04	0.00	0.00	com-datacenters-7p_v5p.xlsx
School	Ventilation	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.01	0%	0%	\$0.04	0.00	0.00	com-datacenters-7p_v5p.xlsx
School	Interior Lighting	Data Center - Commercially Available Measures	sqft	Existing	0.02	8	\$0.01	0%	0%	\$0.04	0.00	0.00	com-datacenters-7p_v5p.xlsx
School	Office Equipment	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.01	0%	0%	\$0.04	0.00	0.00	com-datacenters-7p_v5p.xlsx
School	Cooling	Data Center - Cutting Edge Measures	sqft	Existing	0.02	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
School	Office Equipment	Data Center - Cutting Edge Measures	sqft	Existing	0.00	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
School	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	Existing	1,248.76	18	\$4,092.80	0%	0%	\$0.26	0.00	0.00	7th Power Plan
School	Miscellaneous	Pool Pump - Timer	perBldg	Existing	488.18	10	\$85.22	15%	75%	\$0.02	3.71	3.72	Ontario Power TRM
School	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	Existing	2,415.55	6	\$35.93	1%	3%	\$0.00	37.47	37.48	7th Power Plan
School	Cooling	Advanced New Construction Designs	sqft	Existing	0.43	25	\$4.11	0%	0%	\$0.10	0.00	0.00	AEG Research
School	Heating	Advanced New Construction Designs	sqft	Existing	1.60	25	\$4.11	0%	0%	\$0.10	0.00	0.00	AEG Research
School	Ventilation	Advanced New Construction Designs	sqft	Existing	0.20	25	\$4.11	0%	0%	\$0.10	0.00	0.00	AEG Research
School	Water Heating	Advanced New Construction Designs	sqft	Existing	0.21	25	\$4.11	0%	0%	\$0.10	0.00	0.00	AEG Research
School	Interior Lighting	Advanced New Construction Designs	sqft	Existing	0.48	25	\$4.11	0%	0%	\$0.10	0.00	0.00	AEG Research
School	Exterior Lighting	Advanced New Construction Designs	sqft	Existing	0.16	25	\$4.11	0%	0%	\$0.10	0.00	0.00	AEG Research
School	Cooling	Strategic Energy Management	sqft	Existing	0.06	3	\$0.16	2%	22%	\$0.09	56.28	72.65	AEG Research

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
School	Heating	Strategic Energy Management	sqft	Existing	0.23	3	\$0.16	2%	22%	\$0.09	50.49	56.33	AEG Research
School	Ventilation	Strategic Energy Management	sqft	Existing	0.03	3	\$0.16	2%	22%	\$0.09	38.87	52.39	AEG Research
School	Water Heating	Strategic Energy Management	sqft	Existing	0.03	3	\$0.16	2%	22%	\$0.09	17.83	33.73	AEG Research
School	Interior Lighting	Strategic Energy Management	sqft	Existing	0.07	3	\$0.16	2%	22%	\$0.09	79.69	133.94	AEG Research
School	Exterior Lighting	Strategic Energy Management	sqft	Existing	0.02	3	\$0.16	2%	22%	\$0.09	24.80	41.06	AEG Research
School	Refrigeration	Strategic Energy Management	sqft	Existing	0.02	3	\$0.16	2%	22%	\$0.09	24.72	26.62	AEG Research
School	Office Equipment	Strategic Energy Management	sqft	Existing	0.03	3	\$0.16	2%	22%	\$0.09	38.03	36.61	AEG Research
School	Cooling	Commissioning	sqft	Existing	0.08	3	\$0.37	0%	0%	\$0.17	0.00	0.00	AEG Research
School	Heating	Commissioning	sqft	Existing	0.31	3	\$0.37	0%	0%	\$0.17	0.00	0.00	AEG Research
School	Ventilation	Commissioning	sqft	Existing	0.04	3	\$0.37	0%	0%	\$0.17	0.00	0.00	AEG Research
School	Water Heating	Commissioning	sqft	Existing	0.01	3	\$0.37	0%	0%	\$0.17	0.00	0.00	AEG Research
School	Interior Lighting	Commissioning	sqft	Existing	0.08	3	\$0.37	0%	0%	\$0.17	0.00	0.00	AEG Research
School	Exterior Lighting	Commissioning	sqft	Existing	0.03	3	\$0.37	0%	0%	\$0.17	0.00	0.00	AEG Research
School	Refrigeration	Commissioning	sqft	Existing	0.04	3	\$0.37	0%	0%	\$0.17	0.00	0.00	AEG Research
School	Cooling	Retrocommissioning	sqft	Existing	0.09	3	\$0.23	13%	56%	\$0.11	165.93	215.42	AEG Research
School	Heating	Retrocommissioning	sqft	Existing	0.32	3	\$0.23	13%	56%	\$0.11	148.86	167.00	AEG Research
School	Ventilation	Retrocommissioning	sqft	Existing	0.04	3	\$0.23	13%	56%	\$0.11	114.62	155.32	AEG Research
School	Water Heating	Retrocommissioning	sqft	Existing	0.01	3	\$0.23	13%	56%	\$0.11	17.53	33.34	AEG Research
School	Interior Lighting	Retrocommissioning	sqft	Existing	0.08	3	\$0.23	13%	56%	\$0.11	195.79	330.98	AEG Research
School	Exterior Lighting	Retrocommissioning	sqft	Existing	0.03	3	\$0.23	13%	56%	\$0.11	60.92	101.46	AEG Research
School	Refrigeration	Retrocommissioning	sqft	Existing	0.04	3	\$0.23	13%	56%	\$0.11	121.47	131.54	AEG Research
School	Interior Lighting	Fruit Storage - Lighting Controls	sqft	Existing	0.06	10	\$0.09	0%	0%	\$0.14	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
School	Refrigeration	Fruit Storage Refrigeration Retrofit	sqft	Existing	0.13	10	\$1.09	0%	0%	\$1.06	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
School	Refrigeration	Fruit Storage Refrigeration Tuneup	sqft	Existing	0.03	3	\$0.23	0%	0%	\$2.17	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
School	Refrigeration	Fruit Storage Retrofit - CO2 Scrub	sqft	Existing	0.06	10	\$3.13	0%	0%	\$6.27	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
School	Refrigeration	Fruit Storage Retrofit - Membrane	sqft	Existing	0.01	10	\$0.68	0%	0%	\$6.80	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
School	Cooling	Insulation - Ceiling	sqft roof	New	0.00	45	\$1.28	15%	50%	\$1.13	0.00	0.00	Building Energy Simulation Tool
School	Heating	Insulation - Ceiling	sqft roof	New	0.07	45	\$1.28	15%	50%	\$1.13	7.44	7.52	Building Energy Simulation Tool
School	Ventilation	Insulation - Ceiling	sqft roof	New	0.01	45	\$1.28	15%	50%	\$1.13	5.74	6.38	Building Energy Simulation Tool
School	Cooling	Insulation - Ducting	sqft duct	New	0.18	20	\$0.84	15%	50%	\$0.00	40.11	40.97	Building Energy Simulation Tool
School	Heating	Insulation - Ducting	sqft duct	New	0.00	20	\$0.84	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
School	Ventilation	Insulation - Ducting	sqft duct	New	0.00	20	\$0.84	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
School	Cooling	Building Shell - Cool Roofs	sqft roof	New	0.06	20	\$0.78	45%	50%	\$2.26	3.87	3.98	Building Energy Simulation Tool
School	Heating	Building Shell - Cool Roofs	sqft roof	New	-0.03	20	\$0.78	45%	50%	\$2.26	-0.47	-0.47	Building Energy Simulation Tool
School	Ventilation	Building Shell - Cool Roofs	sqft roof	New	0.00	20	\$0.78	45%	50%	\$2.26	-0.36	-0.40	Building Energy Simulation Tool
School	Cooling	Insulation - Wall Cavity	sqft wall	New	-0.01	45	\$0.78	15%	50%	\$1.60	-1.84	-1.89	Building Energy Simulation Tool
School	Heating	Insulation - Wall Cavity	sqft wall	New	0.05	45	\$0.78	15%	50%	\$1.60	1.43	1.44	Building Energy Simulation Tool
School	Ventilation	Insulation - Wall Cavity	sqft wall	New	0.00	45	\$0.78	15%	50%	\$1.60	1.12	1.23	Building Energy Simulation Tool
School	Cooling	HVAC - Duct Repair and Sealing	tonCool	New	7.72	18	\$0.57	15%	35%	\$10.00	7.72	7.97	Building Energy Simulation Tool
School	Heating	HVAC - Duct Repair and Sealing	tonCool	New	-8.34	18	\$0.57	15%	35%	\$10.00	-1.86	-1.88	Building Energy Simulation Tool
School	Ventilation	HVAC - Duct Repair and Sealing	tonCool	New	-0.81	18	\$0.57	15%	35%	\$10.00	-1.46	-1.62	Building Energy Simulation Tool

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School	Cooling	Windows - High Efficiency Glazing	sqft window	New	3.39	30	\$35.93	66%	66%	\$0.09	0.00	0.00	7th Power Plan
School	Heating	Windows - High Efficiency Glazing	sqft window	New	26.25	30	\$35.93	66%	66%	\$0.09	0.00	0.00	7th Power Plan
School	Ventilation	Windows - High Efficiency Glazing	sqft window	New	1.44	30	\$35.93	66%	66%	\$0.09	0.00	0.00	7th Power Plan
School	Cooling	Chiller - Chilled Water Reset	ChillCtrl	New	6,138.94	10	\$884.85	15%	75%	\$0.02	13.96	14.79	AEG-BEST
School	Cooling	Chiller - Chilled Water Variable-Flow System	HP cool	New	173.85	15	\$332.55	15%	75%	\$0.17	70.57	74.27	AEG-BEST
School	Cooling	Chiller - Variable Speed Fans	HP fan	New	404.27	15	\$208.36	15%	75%	\$0.05	16.40	17.24	New Jersey TRM
School	Cooling	Water-Cooled Chiller - Condenser Water Reset	ChillCtrl	New	0.00	10	\$884.85	15%	75%	\$0.00	0.00	0.00	AEG-BEST
School	Cooling	HVAC - Economizer	HP cool	New	36.52	10	\$168.42	18%	75%	\$0.49	33.88	36.83	AEG-BEST
School	Heating	Space Heating - Heat Recovery Ventilator	CFM	New	0.83	14	\$5.08	6%	75%	\$0.66	41.82	43.01	7th Power Plan
School	Ventilation	Ventilation - ECM on VAV Boxes	sqft	New	0.10	18	\$0.25	15%	20%	\$0.14	11.38	12.53	7th Power Plan
School	Ventilation	Ventilation - Variable Speed Control	sqft	New	0.01	15	\$181.39	19%	50%	\$916.66	4.61	5.54	AEG-BEST
School	Ventilation	Ventilation - Demand Controlled	sqft	New	0.01	15	\$0.25	15%	75%	\$2.59	4.37	5.26	7th Power Plan
School	Cooling	Destratification Fans (HVLS)	Strat Fan	New	1,542.24	15	\$7,270.90	15%	15%	\$0.06	0.00	0.00	AEG Research
School	Heating	Destratification Fans (HVLS)	Strat Fan	New	11,048.39	15	\$7,270.90	15%	15%	\$0.06	0.00	0.00	AEG Research
School	Cooling	RTU - Maintenance	tonCool	New	13.33	3	\$35.00	15%	45%	\$0.69	1.00	1.16	AEG Research
School	Cooling	RTU - Advanced Controls	sqft	New	0.09	15	\$0.07	15%	45%	\$0.07	16.27	16.81	7th Power Plan
School	Cooling	RTU - Evaporative Precooler	tonCool	New	26.91	15	\$681.62	15%	75%	\$2.14	46.92	48.17	AEG Research
School	Cooling	Ductless Mini Split Heat Pump	tonCool	New	62.34	15	\$3,359.26	15%	25%	\$0.73	0.77	0.81	7th Power Plan
School	Heating	Ductless Mini Split Heat Pump	tonCool	New	390.27	15	\$3,359.26	15%	25%	\$0.73	11.29	11.52	7th Power Plan
School	Cooling	Thermostat - WiFi/Interactive	sqft	New	0.22	5	\$0.66	30%	40%	\$0.11	3.55	3.91	7th Power Plan
School	Heating	Thermostat - WiFi/Interactive	sqft	New	0.84	5	\$0.66	30%	40%	\$0.11	2.99	3.09	7th Power Plan

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School	Ventilation	Thermostat - WiFi/Interactive	sqft	New	0.08	5	\$0.66	30%	40%	\$0.11	2.34	2.93	7th Power Plan
School	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	New	47.80	10	\$8.35	25%	65%	\$0.01	2.99	4.31	Illinois TRM
School	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	New	49.88	10	\$11.64	25%	65%	-\$0.13	1.56	2.25	7th Power Plan
School	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	New	41.19	15	\$36.75	15%	25%	\$0.04	1.51	1.78	Hawaii TRM
School	Water Heating	Water Heater - Pipe Insulation	PipeFeet	New	189.13	15	\$14.88	1%	75%	\$0.00	14.31	19.38	AEG-BEST
School	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	New	32.99	4	\$144.04	25%	65%	-\$0.43	0.94	1.48	7th Power Plan
School	Water Heating	Water Heater - Thermostat Setback	WHunits	New	41.23	2	\$5.00	15%	75%	\$0.02	0.49	0.82	Illinois TRM
School	Water Heating	Water Heater - Solar System	PipeFeet	New	658.59	20	\$215.28	1%	30%	\$0.01	20.18	27.12	AEG-BEST
School	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.20	15	\$0.35	11%	23%	\$0.12	98.92	112.45	7th Power Plan
School	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.28	15	\$0.58	11%	23%	\$0.14	135.97	155.12	7th Power Plan
School	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	New	175.85	15	\$54.41	1%	3%	\$0.02	1.13	1.40	7th Power Plan
School	Interior Lighting	Interior Lighting - Timeclocks and Timers	occ sens	New	0.00	8	\$111.67	7%	15%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
School	Interior Lighting	Interior Lighting - Skylights	1000 sqft	New	0.00	15	\$1,006.35	18%	33%	\$0.00	0.00	0.00	AEG Research
School	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	1000 sqft	New	146.63	16	\$1,807.69	5%	15%	\$0.78	14.88	18.21	7th Power Plan
School	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	New	1,531.28	11	\$30.80	15%	50%	\$0.00	44.54	54.24	Illinois TRM
School	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	ELtg Watts	New	0.26	8	\$0.63	15%	25%	\$0.22	11.99	16.01	7th Power Plan
School	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fxt	New	24.78	8	\$55.10	15%	25%	\$0.21	6.40	8.57	Pacific Gas and Electric Research
School	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fxt	New	30.22	7	\$3,400.00	15%	30%	\$11.32	10.35	13.88	AEG Research
School	Refrigeration	Refrigeration - Anti-Sweat Heater	Fridge Feet	New	9.17	8	\$48.18	4%	25%	\$0.81	0.53	0.56	7th Power Plan

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School	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	New	22.21	4	\$10.44	4%	25%	\$0.12	0.51	0.50	Michigan Energy Measures Database
School	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	New	213.34	16	\$165.20	4%	25%	\$0.08	2.75	2.78	7th Power Plan
School	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	New	21.94	15	\$335.85	0%	0%	\$1.62	0.00	0.00	7th Power Plan
School	Refrigeration	Refrigeration - Strip Curtain	Walkin Door	New	16.58	2	\$10.41	4%	25%	\$0.30	0.06	0.06	7th Power Plan
School	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	New	0.35	15	\$45.43	2%	13%	\$13.62	4.71	4.76	Annual Energy Outlook, 2015
School	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	New	7.29	15	\$313.82	2%	13%	\$4.54	8.20	8.32	Annual Energy Outlook, 2015
School	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	New	141.78	10	\$506.05	4%	25%	\$0.47	1.37	1.38	Vermont TRM
School	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	New	7.04	6	\$45.41	0%	0%	\$1.22	0.00	0.00	7th Power Plan
School	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	New	0.57	8	\$3.72	0%	0%	\$1.01	0.00	0.00	7th Power Plan
School	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	New	136.13	5	\$45.85	0%	0%	\$0.07	0.00	0.00	Illinois TRM
School	Refrigeration	Grocery - ECMs for Display Cases	Fridge Case	New	29.26	16	\$165.20	4%	25%	\$0.58	0.83	0.84	7th Power Plan
School	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	New	1,232.86	5	\$187.94	25%	75%	\$0.03	4.17	4.22	Illinois TRM
School	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	New	1,053.37	18	\$8,526.67	25%	50%	\$0.44	23.89	26.54	7th Power Plan
School	Office Equipment	Office Equipment - Smart Power Strips	Smart Strip	New	20.55	4	\$41.63	10%	50%	\$0.47	5.06	4.55	7th Power Plan
School	Cooling	Lodging - Guest Room Controls	LodgUnit	New	59.62	15	\$260.00	0%	0%	\$10.00	0.00	0.00	AEG-BEST
School	Heating	Lodging - Guest Room Controls	LodgUnit	New	-226.99	15	\$260.00	0%	0%	\$10.00	0.00	0.00	AEG-BEST
School	Office Equipment	Data Center - Best Practice Measures	sqft	New	0.02	5	\$0.00	0%	0%	\$0.02	0.00	0.00	com-datacenters-7p_v5p.xlsx
School	Cooling	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.01	0%	0%	\$0.04	0.00	0.00	com-datacenters-7p_v5p.xlsx
School	Ventilation	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.01	0%	0%	\$0.04	0.00	0.00	com-datacenters-7p_v5p.xlsx

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
School	Interior Lighting	Data Center - Commercially Available Measures	sqft	New	0.02	8	\$0.01	0%	0%	\$0.04	0.00	0.00	com-datacenters-7p_v5p.xlsx
School	Office Equipment	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.01	0%	0%	\$0.04	0.00	0.00	com-datacenters-7p_v5p.xlsx
School	Cooling	Data Center - Cutting Edge Measures	sqft	New	0.02	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
School	Office Equipment	Data Center - Cutting Edge Measures	sqft	New	0.00	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
School	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	New	856.27	18	\$4,092.80	0%	0%	\$0.26	0.00	0.00	7th Power Plan
School	Miscellaneous	Pool Pump - Timer	perBldg	New	488.56	10	\$85.22	15%	75%	\$0.02	0.45	0.45	Ontario Power TRM
School	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	New	2,414.15	6	\$35.93	1%	3%	\$0.00	2.12	2.12	7th Power Plan
School	Cooling	Advanced New Construction Designs	sqft	New	0.38	25	\$4.11	10%	25%	\$0.11	85.02	87.01	AEG Research
School	Heating	Advanced New Construction Designs	sqft	New	1.46	25	\$4.11	10%	25%	\$0.11	72.04	72.42	AEG Research
School	Ventilation	Advanced New Construction Designs	sqft	New	0.14	25	\$4.11	10%	25%	\$0.11	56.16	62.13	AEG Research
School	Water Heating	Advanced New Construction Designs	sqft	New	0.15	25	\$4.11	10%	25%	\$0.11	28.35	32.61	AEG Research
School	Interior Lighting	Advanced New Construction Designs	sqft	New	0.40	25	\$4.11	10%	25%	\$0.11	119.77	131.48	AEG Research
School	Exterior Lighting	Advanced New Construction Designs	sqft	New	0.12	25	\$4.11	10%	25%	\$0.11	37.09	41.97	AEG Research
School	Cooling	Strategic Energy Management	sqft	New	0.06	3	\$0.14	2%	22%	\$0.08	1.48	1.69	AEG Research
School	Heating	Strategic Energy Management	sqft	New	0.22	3	\$0.14	2%	22%	\$0.08	1.26	1.31	AEG Research
School	Ventilation	Strategic Energy Management	sqft	New	0.02	3	\$0.14	2%	22%	\$0.08	0.98	1.26	AEG Research
School	Water Heating	Strategic Energy Management	sqft	New	0.02	3	\$0.14	2%	22%	\$0.08	0.50	0.82	AEG Research
School	Interior Lighting	Strategic Energy Management	sqft	New	0.06	3	\$0.14	2%	22%	\$0.08	2.12	3.14	AEG Research
School	Exterior Lighting	Strategic Energy Management	sqft	New	0.02	3	\$0.14	2%	22%	\$0.08	0.65	0.94	AEG Research

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School	Refrigeration	Strategic Energy Management	sqft	New	0.02	3	\$0.14	2%	22%	\$0.08	0.62	0.58	AEG Research
School	Office Equipment	Strategic Energy Management	sqft	New	0.03	3	\$0.14	2%	22%	\$0.08	0.97	0.87	AEG Research
School	Cooling	Commissioning	sqft	New	0.08	3	\$0.34	13%	56%	\$0.16	4.39	5.03	AEG Research
School	Heating	Commissioning	sqft	New	0.30	3	\$0.34	13%	56%	\$0.16	3.74	3.90	AEG Research
School	Ventilation	Commissioning	sqft	New	0.03	3	\$0.34	13%	56%	\$0.16	2.93	3.76	AEG Research
School	Water Heating	Commissioning	sqft	New	0.01	3	\$0.34	13%	56%	\$0.16	0.50	0.81	AEG Research
School	Interior Lighting	Commissioning	sqft	New	0.07	3	\$0.34	13%	56%	\$0.16	5.27	7.77	AEG Research
School	Exterior Lighting	Commissioning	sqft	New	0.02	3	\$0.34	13%	56%	\$0.16	1.62	2.32	AEG Research
School	Refrigeration	Commissioning	sqft	New	0.04	3	\$0.34	13%	56%	\$0.16	3.04	2.88	AEG Research
School	Cooling	Retrocommissioning	sqft	New	0.08	3	\$0.21	0%	0%	\$0.10	0.00	0.00	AEG Research
School	Heating	Retrocommissioning	sqft	New	0.30	3	\$0.21	0%	0%	\$0.10	0.00	0.00	AEG Research
School	Ventilation	Retrocommissioning	sqft	New	0.03	3	\$0.21	0%	0%	\$0.10	0.00	0.00	AEG Research
School	Water Heating	Retrocommissioning	sqft	New	0.01	3	\$0.21	0%	0%	\$0.10	0.00	0.00	AEG Research
School	Interior Lighting	Retrocommissioning	sqft	New	0.07	3	\$0.21	0%	0%	\$0.10	0.00	0.00	AEG Research
School	Exterior Lighting	Retrocommissioning	sqft	New	0.02	3	\$0.21	0%	0%	\$0.10	0.00	0.00	AEG Research
School	Refrigeration	Retrocommissioning	sqft	New	0.04	3	\$0.21	0%	0%	\$0.10	0.00	0.00	AEG Research
School	Interior Lighting	Fruit Storage - Lighting Controls	sqft	New	0.05	10	\$0.09	0%	0%	\$0.14	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
School	Refrigeration	Fruit Storage Refrigeration Retrofit	sqft	New	0.12	10	\$1.09	0%	0%	\$1.18	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
School	Refrigeration	Fruit Storage Refrigeration Tuneup	sqft	New	0.03	3	\$0.23	0%	0%	\$2.42	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
School	Refrigeration	Fruit Storage Retrofit - CO2 Scrub	sqft	New	0.06	10	\$3.13	0%	0%	\$6.99	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
School	Refrigeration	Fruit Storage Retrofit - Membrane	sqft	New	0.01	10	\$0.68	0%	0%	\$7.58	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Lodging	Cooling	Insulation - Ceiling	sqft roof	Existing	0.00	45	\$1.28	15%	35%	\$0.32	0.00	0.00	Building Energy Simulation Tool

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Lodging	Heating	Insulation - Ceiling	sqft roof	Existing	0.24	45	\$1.28	15%	35%	\$0.32	58.28	58.35	Building Energy Simulation Tool
Lodging	Ventilation	Insulation - Ceiling	sqft roof	Existing	0.07	45	\$1.28	15%	35%	\$0.32	21.74	24.10	Building Energy Simulation Tool
Lodging	Cooling	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.84	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Lodging	Heating	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.84	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Lodging	Ventilation	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.84	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Lodging	Cooling	Building Shell - Cool Roofs	sqft roof	Existing	0.14	20	\$0.78	45%	50%	\$10.00	8.63	10.22	Building Energy Simulation Tool
Lodging	Heating	Building Shell - Cool Roofs	sqft roof	Existing	-0.13	20	\$0.78	45%	50%	\$10.00	-7.50	-8.34	Building Energy Simulation Tool
Lodging	Ventilation	Building Shell - Cool Roofs	sqft roof	Existing	-0.04	20	\$0.78	45%	50%	\$10.00	-3.18	-3.73	Building Energy Simulation Tool
Lodging	Cooling	Insulation - Wall Cavity	sqft wall	Existing	0.00	45	\$0.78	15%	35%	\$0.42	-0.36	-0.39	Building Energy Simulation Tool
Lodging	Heating	Insulation - Wall Cavity	sqft wall	Existing	0.12	45	\$0.78	15%	35%	\$0.42	10.97	10.86	Building Energy Simulation Tool
Lodging	Ventilation	Insulation - Wall Cavity	sqft wall	Existing	0.03	45	\$0.78	15%	35%	\$0.42	4.01	4.42	Building Energy Simulation Tool
Lodging	Cooling	HVAC - Duct Repair and Sealing	tonCool	Existing	0.00	18	\$0.57	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Lodging	Heating	HVAC - Duct Repair and Sealing	tonCool	Existing	0.00	18	\$0.57	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Lodging	Ventilation	HVAC - Duct Repair and Sealing	tonCool	Existing	0.00	18	\$0.57	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Lodging	Cooling	Windows - High Efficiency Glazing	sqft window	Existing	1.91	30	\$35.93	48%	48%	\$0.26	0.00	0.00	7th Power Plan
Lodging	Heating	Windows - High Efficiency Glazing	sqft window	Existing	8.14	30	\$35.93	48%	48%	\$0.26	0.00	0.00	7th Power Plan
Lodging	Ventilation	Windows - High Efficiency Glazing	sqft window	Existing	1.37	30	\$35.93	48%	48%	\$0.26	0.00	0.00	7th Power Plan
Lodging	Cooling	Chiller - Chilled Water Reset	ChillCtrl	Existing	3,352.79	10	\$884.85	15%	75%	\$0.03	5.30	5.98	AEG-BEST
Lodging	Cooling	Chiller - Chilled Water Variable-Flow System	HP cool	Existing	69.91	15	\$332.55	15%	75%	\$0.46	15.28	17.50	AEG-BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Lodging	Cooling	Chiller - Variable Speed Fans	HP fan	Existing	174.18	15	\$208.36	15%	75%	\$0.12	3.82	4.33	New Jersey TRM
Lodging	Cooling	Water-Cooled Chiller - Condenser Water Reset	ChillCtrl	Existing	5,970.60	10	\$884.85	15%	75%	\$0.02	7.37	8.36	AEG-BEST
Lodging	Cooling	HVAC - Economizer	HP cool	Existing	45.86	10	\$168.42	18%	75%	\$0.44	37.42	42.17	AEG-BEST
Lodging	Heating	Space Heating - Heat Recovery Ventilator	CFM	Existing	1.22	14	\$5.08	3%	75%	\$0.47	226.06	228.74	7th Power Plan
Lodging	Ventilation	Ventilation - ECM on VAV Boxes	sqft	Existing	0.20	18	\$0.25	15%	20%	\$0.12	14.84	16.36	7th Power Plan
Lodging	Ventilation	Ventilation - Variable Speed Control	sqft	Existing	0.06	15	\$181.39	13%	50%	\$282.08	34.28	42.45	AEG-BEST
Lodging	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.01	15	\$0.25	15%	75%	\$2.19	10.32	12.43	7th Power Plan
Lodging	Cooling	Destratification Fans (HVLS)	Strat Fan	Existing	1,746.72	15	\$7,270.90	15%	30%	\$0.09	32.07	36.48	AEG Research
Lodging	Heating	Destratification Fans (HVLS)	Strat Fan	Existing	7,040.65	15	\$7,270.90	15%	30%	\$0.09	118.03	116.17	AEG Research
Lodging	Cooling	RTU - Maintenance	tonCool	Existing	26.68	3	\$35.00	15%	45%	\$0.36	6.47	8.08	AEG Research
Lodging	Cooling	RTU - Advanced Controls	sqft	Existing	0.13	15	\$0.07	15%	45%	\$0.05	10.75	11.48	7th Power Plan
Lodging	Cooling	RTU - Evaporative Precooler	tonCool	Existing	57.44	15	\$681.62	15%	75%	\$1.13	25.98	27.63	AEG Research
Lodging	Cooling	Ductless Mini Split Heat Pump	tonCool	Existing	137.39	15	\$3,359.26	15%	75%	\$0.85	158.07	186.45	7th Power Plan
Lodging	Heating	Ductless Mini Split Heat Pump	tonCool	Existing	254.63	15	\$3,359.26	15%	75%	\$0.85	421.96	442.48	7th Power Plan
Lodging	Cooling	Thermostat - WiFi/Interactive	sqft	Existing	0.26	5	\$0.66	30%	40%	\$0.15	33.18	36.94	7th Power Plan
Lodging	Heating	Thermostat - WiFi/Interactive	sqft	Existing	0.51	5	\$0.66	30%	40%	\$0.15	59.90	61.70	7th Power Plan
Lodging	Ventilation	Thermostat - WiFi/Interactive	sqft	Existing	0.16	5	\$0.66	30%	40%	\$0.15	23.22	26.26	7th Power Plan
Lodging	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	Existing	325.95	10	\$8.35	25%	65%	\$0.00	22.28	40.98	Illinois TRM
Lodging	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	Existing	337.50	10	\$11.64	25%	65%	-\$0.03	11.49	21.32	7th Power Plan
Lodging	Water Heating	Water Heater - High Efficiency Circulation Pump	WHUnits	Existing	58.34	15	\$36.75	15%	25%	\$0.04	4.26	6.54	Hawaii TRM
Lodging	Water Heating	Water Heater - Pipe Insulation	PipeFeet	Existing	1,336.90	15	\$14.88	16%	75%	\$0.00	57.34	97.01	AEG-BEST

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Lodging	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	Existing	222.70	4	\$144.04	25%	65%	-\$0.09	14.84	27.32	7th Power Plan
Lodging	Water Heating	Water Heater - Thermostat Setback	WHUnits	Existing	58.37	2	\$5.00	15%	75%	\$0.02	27.47	49.98	Illinois TRM
Lodging	Water Heating	Water Heater - Solar System	PipeFeet	Existing	4,603.32	20	\$215.28	1%	30%	\$0.00	95.71	165.38	AEG-BEST
Lodging	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.20	15	\$0.35	3%	23%	\$0.16	75.46	87.11	7th Power Plan
Lodging	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.27	15	\$0.58	3%	23%	\$0.19	102.82	120.47	7th Power Plan
Lodging	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	Existing	393.88	15	\$54.41	1%	3%	\$0.01	2.86	4.06	7th Power Plan
Lodging	Interior Lighting	Interior Lighting - Timeclocks and Timers	occ sens	Existing	0.00	8	\$111.67	7%	15%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Lodging	Interior Lighting	Interior Lighting - Skylights	1000 sqft	Existing	0.00	15	\$1,006.35	15%	25%	\$0.00	0.00	0.00	AEG Research
Lodging	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	1000 sqft	Existing	60.11	16	\$1,807.69	5%	15%	\$2.55	9.44	11.84	7th Power Plan
Lodging	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	Existing	612.04	11	\$30.80	15%	50%	\$0.01	34.91	41.16	Illinois TRM
Lodging	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	ELtg Watts	Existing	4.42	8	\$0.63	15%	25%	\$0.02	75.69	119.07	7th Power Plan
Lodging	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	Existing	137.55	8	\$55.10	15%	25%	\$0.04	38.35	62.02	Pacific Gas and Electric Research
Lodging	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	Existing	164.66	7	\$3,400.00	15%	30%	\$2.42	67.72	113.43	AEG Research
Lodging	Refrigeration	Refrigeration - Anti-Sweat Heater	Fridge Feet	Existing	45.01	8	\$48.18	0%	0%	\$0.16	0.00	0.00	7th Power Plan
Lodging	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	Existing	64.05	4	\$10.44	0%	0%	\$0.04	0.00	0.00	Michigan Energy Measures Database
Lodging	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	Existing	565.64	16	\$165.20	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Lodging	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	Existing	69.81	15	\$335.85	0%	0%	\$0.51	0.00	0.00	7th Power Plan
Lodging	Refrigeration	Refrigeration - Strip Curtain	Walkin Door	Existing	62.86	2	\$10.41	0%	0%	\$0.08	0.00	0.00	7th Power Plan
Lodging	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBtuh	Existing	1.12	15	\$45.43	0%	0%	\$4.26	0.00	0.00	Annual Energy Outlook, 2015

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Lodging	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	Existing	23.24	15	\$313.82	0%	0%	\$1.42	0.00	0.00	Annual Energy Outlook, 2015
Lodging	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	Existing	369.29	10	\$506.05	0%	0%	\$0.18	0.00	0.00	Vermont TRM
Lodging	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	Existing	26.95	6	\$45.41	0%	0%	\$0.32	0.00	0.00	7th Power Plan
Lodging	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	Existing	2.17	8	\$3.72	0%	0%	\$0.26	0.00	0.00	7th Power Plan
Lodging	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	Existing	517.76	5	\$45.85	0%	0%	\$0.02	0.00	0.00	Illinois TRM
Lodging	Refrigeration	Grocery - ECMs for Display Cases	Fridge Case	Existing	111.67	16	\$165.20	0%	0%	\$0.15	0.00	0.00	7th Power Plan
Lodging	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	Existing	1,251.96	5	\$187.94	25%	75%	\$0.03	36.28	37.86	Illinois TRM
Lodging	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	Existing	2,061.50	18	\$8,526.67	25%	50%	\$0.37	31.23	34.90	7th Power Plan
Lodging	Office Equipment	Office Equipment - Smart Power Strips	Smart Strip	Existing	7.44	4	\$41.63	10%	50%	\$1.31	11.15	10.23	7th Power Plan
Lodging	Cooling	Lodging - Guest Room Controls	LodgUnit	Existing	100.03	15	\$260.00	15%	75%	\$24.00	86.66	95.40	AEG-BEST
Lodging	Heating	Lodging - Guest Room Controls	LodgUnit	Existing	-110.33	15	\$260.00	15%	75%	\$24.00	-135.61	-136.00	AEG-BEST
Lodging	Office Equipment	Data Center - Best Practice Measures	sqft	Existing	0.01	5	\$0.00	0%	0%	\$0.02	0.00	0.00	com-datacenters-7p_v5p.xlsx
Lodging	Cooling	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.01	0%	0%	\$0.04	0.00	0.00	com-datacenters-7p_v5p.xlsx
Lodging	Ventilation	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.01	0%	0%	\$0.04	0.00	0.00	com-datacenters-7p_v5p.xlsx
Lodging	Interior Lighting	Data Center - Commercially Available Measures	sqft	Existing	0.02	8	\$0.01	0%	0%	\$0.04	0.00	0.00	com-datacenters-7p_v5p.xlsx
Lodging	Office Equipment	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.01	0%	0%	\$0.04	0.00	0.00	com-datacenters-7p_v5p.xlsx
Lodging	Cooling	Data Center - Cutting Edge Measures	sqft	Existing	0.02	6	\$0.00	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Lodging	Office Equipment	Data Center - Cutting Edge Measures	sqft	Existing	0.00	6	\$0.00	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Lodging	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	Existing	2,778.67	18	\$4,092.80	0%	0%	\$0.13	0.00	0.00	7th Power Plan

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Lodging	Miscellaneous	Pool Pump - Timer	perBldg	Existing	352.95	10	\$85.22	15%	75%	\$0.03	5.06	5.08	Ontario Power TRM
Lodging	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	Existing	5,304.51	6	\$35.93	1%	3%	\$0.00	12.28	12.30	7th Power Plan
Lodging	Cooling	Advanced New Construction Designs	sqft	Existing	0.44	25	\$4.11	0%	0%	\$0.10	0.00	0.00	AEG Research
Lodging	Heating	Advanced New Construction Designs	sqft	Existing	0.90	25	\$4.11	0%	0%	\$0.10	0.00	0.00	AEG Research
Lodging	Ventilation	Advanced New Construction Designs	sqft	Existing	0.26	25	\$4.11	0%	0%	\$0.10	0.00	0.00	AEG Research
Lodging	Water Heating	Advanced New Construction Designs	sqft	Existing	0.60	25	\$4.11	0%	0%	\$0.10	0.00	0.00	AEG Research
Lodging	Interior Lighting	Advanced New Construction Designs	sqft	Existing	0.54	25	\$4.11	0%	0%	\$0.10	0.00	0.00	AEG Research
Lodging	Exterior Lighting	Advanced New Construction Designs	sqft	Existing	0.33	25	\$4.11	0%	0%	\$0.10	0.00	0.00	AEG Research
Lodging	Cooling	Strategic Energy Management	sqft	Existing	0.06	3	\$0.17	0%	0%	\$0.09	0.00	0.00	AEG Research
Lodging	Heating	Strategic Energy Management	sqft	Existing	0.12	3	\$0.17	0%	0%	\$0.09	0.00	0.00	AEG Research
Lodging	Ventilation	Strategic Energy Management	sqft	Existing	0.04	3	\$0.17	0%	0%	\$0.09	0.00	0.00	AEG Research
Lodging	Water Heating	Strategic Energy Management	sqft	Existing	0.09	3	\$0.17	0%	0%	\$0.09	0.00	0.00	AEG Research
Lodging	Interior Lighting	Strategic Energy Management	sqft	Existing	0.08	3	\$0.17	0%	0%	\$0.09	0.00	0.00	AEG Research
Lodging	Exterior Lighting	Strategic Energy Management	sqft	Existing	0.05	3	\$0.17	0%	0%	\$0.09	0.00	0.00	AEG Research
Lodging	Refrigeration	Strategic Energy Management	sqft	Existing	0.03	3	\$0.17	0%	0%	\$0.09	0.00	0.00	AEG Research
Lodging	Office Equipment	Strategic Energy Management	sqft	Existing	0.01	3	\$0.17	0%	0%	\$0.09	0.00	0.00	AEG Research
Lodging	Cooling	Commissioning	sqft	Existing	0.08	3	\$0.35	0%	0%	\$0.17	0.00	0.00	AEG Research
Lodging	Heating	Commissioning	sqft	Existing	0.16	3	\$0.35	0%	0%	\$0.17	0.00	0.00	AEG Research
Lodging	Ventilation	Commissioning	sqft	Existing	0.05	3	\$0.35	0%	0%	\$0.17	0.00	0.00	AEG Research
Lodging	Water Heating	Commissioning	sqft	Existing	0.04	3	\$0.35	0%	0%	\$0.17	0.00	0.00	AEG Research
Lodging	Interior Lighting	Commissioning	sqft	Existing	0.09	3	\$0.35	0%	0%	\$0.17	0.00	0.00	AEG Research

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Lodging	Exterior Lighting	Commissioning	sqft	Existing	0.05	3	\$0.35	0%	0%	\$0.17	0.00	0.00	AEG Research
Lodging	Refrigeration	Commissioning	sqft	Existing	0.06	3	\$0.35	0%	0%	\$0.17	0.00	0.00	AEG Research
Lodging	Cooling	Retrocommissioning	sqft	Existing	0.09	3	\$0.22	25%	90%	\$0.11	75.50	95.48	AEG Research
Lodging	Heating	Retrocommissioning	sqft	Existing	0.17	3	\$0.22	25%	90%	\$0.11	131.11	151.43	AEG Research
Lodging	Ventilation	Retrocommissioning	sqft	Existing	0.06	3	\$0.22	25%	90%	\$0.11	57.17	69.12	AEG Research
Lodging	Water Heating	Retrocommissioning	sqft	Existing	0.04	3	\$0.22	25%	90%	\$0.11	19.02	35.22	AEG Research
Lodging	Interior Lighting	Retrocommissioning	sqft	Existing	0.10	3	\$0.22	25%	90%	\$0.11	90.82	132.17	AEG Research
Lodging	Exterior Lighting	Retrocommissioning	sqft	Existing	0.06	3	\$0.22	25%	90%	\$0.11	52.06	85.43	AEG Research
Lodging	Refrigeration	Retrocommissioning	sqft	Existing	0.06	3	\$0.22	25%	90%	\$0.11	70.64	71.96	AEG Research
Lodging	Interior Lighting	Fruit Storage - Lighting Controls	sqft	Existing	0.07	10	\$0.09	0%	0%	\$0.14	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Lodging	Refrigeration	Fruit Storage Refrigeration Retrofit	sqft	Existing	0.20	10	\$1.09	0%	0%	\$0.72	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Lodging	Refrigeration	Fruit Storage Refrigeration Tuneup	sqft	Existing	0.05	3	\$0.23	0%	0%	\$1.48	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Lodging	Refrigeration	Fruit Storage Retrofit - CO2 Scrub	sqft	Existing	0.09	10	\$3.13	0%	0%	\$4.28	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Lodging	Refrigeration	Fruit Storage Retrofit - Membrane	sqft	Existing	0.02	10	\$0.68	0%	0%	\$4.65	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Lodging	Cooling	Insulation - Ceiling	sqft roof	New	0.00	45	\$1.28	15%	50%	\$1.48	0.00	0.00	Building Energy Simulation Tool
Lodging	Heating	Insulation - Ceiling	sqft roof	New	0.05	45	\$1.28	15%	50%	\$1.48	4.80	4.82	Building Energy Simulation Tool
Lodging	Ventilation	Insulation - Ceiling	sqft roof	New	0.01	45	\$1.28	15%	50%	\$1.48	1.79	1.87	Building Energy Simulation Tool
Lodging	Cooling	Insulation - Ducting	sqft duct	New	0.00	20	\$0.84	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Lodging	Heating	Insulation - Ducting	sqft duct	New	0.00	20	\$0.84	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Lodging	Ventilation	Insulation - Ducting	sqft duct	New	0.00	20	\$0.84	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Lodging	Cooling	Building Shell - Cool Roofs	sqft roof	New	0.05	20	\$0.78	45%	50%	\$10.00	0.75	0.76	Building Energy Simulation Tool

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Lodging	Heating	Building Shell - Cool Roofs	sqft roof	New	-0.06	20	\$0.78	45%	50%	\$10.00	-0.76	-0.76	Building Energy Simulation Tool
Lodging	Ventilation	Building Shell - Cool Roofs	sqft roof	New	-0.01	20	\$0.78	45%	50%	\$10.00	-0.29	-0.31	Building Energy Simulation Tool
Lodging	Cooling	Insulation - Wall Cavity	sqft wall	New	0.00	45	\$0.78	15%	50%	\$4.94	0.00	0.00	Building Energy Simulation Tool
Lodging	Heating	Insulation - Wall Cavity	sqft wall	New	0.01	45	\$0.78	15%	50%	\$4.94	0.33	0.33	Building Energy Simulation Tool
Lodging	Ventilation	Insulation - Wall Cavity	sqft wall	New	0.00	45	\$0.78	15%	50%	\$4.94	0.13	0.13	Building Energy Simulation Tool
Lodging	Cooling	HVAC - Duct Repair and Sealing	tonCool	New	0.00	18	\$0.57	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Lodging	Heating	HVAC - Duct Repair and Sealing	tonCool	New	0.00	18	\$0.57	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Lodging	Ventilation	HVAC - Duct Repair and Sealing	tonCool	New	0.00	18	\$0.57	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Lodging	Cooling	Windows - High Efficiency Glazing	sqft window	New	1.65	30	\$35.93	66%	66%	\$0.29	0.00	0.00	7th Power Plan
Lodging	Heating	Windows - High Efficiency Glazing	sqft window	New	7.39	30	\$35.93	66%	66%	\$0.29	0.00	0.00	7th Power Plan
Lodging	Ventilation	Windows - High Efficiency Glazing	sqft window	New	1.08	30	\$35.93	66%	66%	\$0.29	0.00	0.00	7th Power Plan
Lodging	Cooling	Chiller - Chilled Water Reset	ChillCtrl	New	2,830.02	10	\$884.85	15%	75%	\$0.04	0.44	0.46	AEG-BEST
Lodging	Cooling	Chiller - Chilled Water Variable-Flow System	HP cool	New	58.91	15	\$332.55	15%	75%	\$0.52	1.61	1.69	AEG-BEST
Lodging	Cooling	Chiller - Variable Speed Fans	HP fan	New	147.63	15	\$208.36	15%	75%	\$0.13	0.41	0.42	New Jersey TRM
Lodging	Cooling	Water-Cooled Chiller - Condenser Water Reset	ChillCtrl	New	5,005.40	10	\$884.85	15%	75%	\$0.02	0.61	0.63	AEG-BEST
Lodging	Cooling	HVAC - Economizer	HP cool	New	43.45	10	\$168.42	18%	75%	\$0.44	3.43	3.62	AEG-BEST
Lodging	Heating	Space Heating - Heat Recovery Ventilator	CFM	New	1.11	14	\$5.08	6%	75%	\$0.50	21.88	22.27	7th Power Plan
Lodging	Ventilation	Ventilation - ECM on VAV Boxes	sqft	New	0.15	18	\$0.25	15%	20%	\$0.13	2.94	3.04	7th Power Plan
Lodging	Ventilation	Ventilation - Variable Speed Control	sqft	New	0.05	15	\$181.39	19%	50%	\$319.48	3.16	3.43	AEG-BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Lodging	Ventilation	Ventilation - Demand Controlled	sqft	New	0.01	15	\$0.25	15%	75%	\$2.48	1.09	1.19	7th Power Plan
Lodging	Cooling	Destratification Fans (HVLS)	Strat Fan	New	1,518.06	15	\$7,270.90	15%	30%	\$0.10	3.51	3.62	AEG Research
Lodging	Heating	Destratification Fans (HVLS)	Strat Fan	New	6,334.51	15	\$7,270.90	15%	30%	\$0.10	12.15	12.18	AEG Research
Lodging	Cooling	RTU - Maintenance	tonCool	New	27.22	3	\$35.00	15%	45%	\$0.36	0.13	0.14	AEG Research
Lodging	Cooling	RTU - Advanced Controls	sqft	New	0.12	15	\$0.07	15%	45%	\$0.05	2.37	2.41	7th Power Plan
Lodging	Cooling	RTU - Evaporative Precooler	tonCool	New	56.34	15	\$681.62	15%	75%	\$1.10	7.10	7.22	AEG Research
Lodging	Cooling	Ductless Mini Split Heat Pump	tonCool	New	112.02	15	\$3,359.26	15%	75%	\$0.94	22.11	23.08	7th Power Plan
Lodging	Heating	Ductless Mini Split Heat Pump	tonCool	New	242.17	15	\$3,359.26	15%	75%	\$0.94	62.67	63.42	7th Power Plan
Lodging	Cooling	Thermostat - WiFi/Interactive	sqft	New	0.22	5	\$0.66	30%	40%	\$0.16	0.92	0.98	7th Power Plan
Lodging	Heating	Thermostat - WiFi/Interactive	sqft	New	0.48	5	\$0.66	30%	40%	\$0.16	1.63	1.67	7th Power Plan
Lodging	Ventilation	Thermostat - WiFi/Interactive	sqft	New	0.12	5	\$0.66	30%	40%	\$0.16	0.61	0.67	7th Power Plan
Lodging	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	New	215.92	10	\$8.35	25%	65%	\$0.00	1.70	2.39	Illinois TRM
Lodging	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	New	225.32	10	\$11.64	25%	65%	-\$0.03	0.89	1.25	7th Power Plan
Lodging	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	New	39.11	15	\$36.75	15%	25%	\$0.04	0.91	1.06	Hawaii TRM
Lodging	Water Heating	Water Heater - Pipe Insulation	PipeFeet	New	853.66	15	\$14.88	1%	75%	\$0.00	8.31	11.03	AEG-BEST
Lodging	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	New	148.99	4	\$144.04	25%	65%	-\$0.09	0.55	0.85	7th Power Plan
Lodging	Water Heating	Water Heater - Thermostat Setback	WHunits	New	39.15	2	\$5.00	15%	75%	\$0.02	0.29	0.47	Illinois TRM
Lodging	Water Heating	Water Heater - Solar System	PipeFeet	New	2,973.93	20	\$215.28	1%	30%	\$0.00	11.73	15.46	AEG-BEST
Lodging	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.18	15	\$0.35	11%	23%	\$0.17	17.90	18.98	7th Power Plan
Lodging	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.24	15	\$0.58	11%	23%	\$0.20	24.73	26.28	7th Power Plan
Lodging	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	New	357.08	15	\$54.41	1%	3%	\$0.01	0.27	0.31	7th Power Plan

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Lodging	Interior Lighting	Interior Lighting - Timeclocks and Timers	occ sens	New	0.00	8	\$111.67	7%	15%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Lodging	Interior Lighting	Interior Lighting - Skylights	1000 sqft	New	0.00	15	\$1,006.35	18%	25%	\$0.00	0.00	0.00	AEG Research
Lodging	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	1000 sqft	New	55.04	16	\$1,807.69	5%	15%	\$2.58	1.16	1.24	7th Power Plan
Lodging	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	New	564.58	11	\$30.80	15%	50%	\$0.01	3.43	3.60	Illinois TRM
Lodging	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	ELtg Watts	New	2.85	8	\$0.63	15%	25%	\$0.02	4.96	6.83	7th Power Plan
Lodging	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	New	90.61	8	\$55.10	15%	25%	\$0.05	2.62	3.58	Pacific Gas and Electric Research
Lodging	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	New	111.13	7	\$3,400.00	15%	30%	\$2.52	4.20	5.94	AEG Research
Lodging	Refrigeration	Refrigeration - Anti-Sweat Heater	Fridge Feet	New	31.12	8	\$48.18	0%	0%	\$0.24	0.00	0.00	7th Power Plan
Lodging	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	New	49.76	4	\$10.44	0%	0%	\$0.05	0.00	0.00	Michigan Energy Measures Database
Lodging	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	New	471.61	16	\$165.20	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Lodging	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	New	64.79	15	\$335.85	0%	0%	\$0.55	0.00	0.00	7th Power Plan
Lodging	Refrigeration	Refrigeration - Strip Curtain	Walkin Door	New	57.20	2	\$10.41	0%	0%	\$0.09	0.00	0.00	7th Power Plan
Lodging	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	New	1.04	15	\$45.43	0%	0%	\$4.65	0.00	0.00	Annual Energy Outlook, 2015
Lodging	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	New	21.57	15	\$313.82	0%	0%	\$1.55	0.00	0.00	Annual Energy Outlook, 2015
Lodging	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	New	314.20	10	\$506.05	0%	0%	\$0.21	0.00	0.00	Vermont TRM
Lodging	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	New	24.43	6	\$45.41	0%	0%	\$0.35	0.00	0.00	7th Power Plan
Lodging	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	New	1.97	8	\$3.72	0%	0%	\$0.29	0.00	0.00	7th Power Plan
Lodging	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	New	475.43	5	\$45.85	0%	0%	\$0.02	0.00	0.00	Illinois TRM
Lodging	Refrigeration	Grocery - ECMs for Display Cases	Fridge Case	New	101.21	16	\$165.20	0%	0%	\$0.17	0.00	0.00	7th Power Plan

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Lodging	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	New	1,239.43	5	\$187.94	25%	75%	\$0.03	1.60	1.62	Illinois TRM
Lodging	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	New	1,606.44	18	\$8,526.67	25%	50%	\$0.42	6.17	6.43	7th Power Plan
Lodging	Office Equipment	Office Equipment - Smart Power Strips	Smart Strip	New	7.04	4	\$41.63	10%	50%	\$1.36	0.36	0.32	7th Power Plan
Lodging	Cooling	Lodging - Guest Room Controls	LodgUnit	New	72.47	15	\$260.00	15%	75%	\$10.00	10.45	10.87	AEG-BEST
Lodging	Heating	Lodging - Guest Room Controls	LodgUnit	New	-93.39	15	\$260.00	15%	75%	\$10.00	-17.68	-17.81	AEG-BEST
Lodging	Office Equipment	Data Center - Best Practice Measures	sqft	New	0.01	5	\$0.00	0%	0%	\$0.02	0.00	0.00	com-datacenters-7p_v5p.xlsx
Lodging	Cooling	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.01	0%	0%	\$0.04	0.00	0.00	com-datacenters-7p_v5p.xlsx
Lodging	Ventilation	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.01	0%	0%	\$0.04	0.00	0.00	com-datacenters-7p_v5p.xlsx
Lodging	Interior Lighting	Data Center - Commercially Available Measures	sqft	New	0.02	8	\$0.01	0%	0%	\$0.04	0.00	0.00	com-datacenters-7p_v5p.xlsx
Lodging	Office Equipment	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.01	0%	0%	\$0.04	0.00	0.00	com-datacenters-7p_v5p.xlsx
Lodging	Cooling	Data Center - Cutting Edge Measures	sqft	New	0.02	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Lodging	Office Equipment	Data Center - Cutting Edge Measures	sqft	New	0.00	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Lodging	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	New	2,176.96	18	\$4,092.80	0%	0%	\$0.15	0.00	0.00	7th Power Plan
Lodging	Miscellaneous	Pool Pump - Timer	perBldg	New	352.07	10	\$85.22	15%	75%	\$0.03	0.53	0.53	Ontario Power TRM
Lodging	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	New	5,284.60	6	\$35.93	1%	3%	\$0.00	0.60	0.60	7th Power Plan
Lodging	Cooling	Advanced New Construction Designs	sqft	New	0.39	25	\$4.11	10%	25%	\$0.10	21.79	22.05	AEG Research
Lodging	Heating	Advanced New Construction Designs	sqft	New	0.83	25	\$4.11	10%	25%	\$0.10	38.81	38.78	AEG Research
Lodging	Ventilation	Advanced New Construction Designs	sqft	New	0.21	25	\$4.11	10%	25%	\$0.10	14.40	14.94	AEG Research
Lodging	Water Heating	Advanced New Construction Designs	sqft	New	0.40	25	\$4.11	10%	25%	\$0.10	16.99	19.34	AEG Research

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Lodging	Interior Lighting	Advanced New Construction Designs	sqft	New	0.49	25	\$4.11	10%	25%	\$0.10	29.82	30.93	AEG Research
Lodging	Exterior Lighting	Advanced New Construction Designs	sqft	New	0.22	25	\$4.11	10%	25%	\$0.10	15.22	17.25	AEG Research
Lodging	Cooling	Strategic Energy Management	sqft	New	0.06	3	\$0.16	0%	0%	\$0.09	0.00	0.00	AEG Research
Lodging	Heating	Strategic Energy Management	sqft	New	0.12	3	\$0.16	0%	0%	\$0.09	0.00	0.00	AEG Research
Lodging	Ventilation	Strategic Energy Management	sqft	New	0.03	3	\$0.16	0%	0%	\$0.09	0.00	0.00	AEG Research
Lodging	Water Heating	Strategic Energy Management	sqft	New	0.06	3	\$0.16	0%	0%	\$0.09	0.00	0.00	AEG Research
Lodging	Interior Lighting	Strategic Energy Management	sqft	New	0.08	3	\$0.16	0%	0%	\$0.09	0.00	0.00	AEG Research
Lodging	Exterior Lighting	Strategic Energy Management	sqft	New	0.03	3	\$0.16	0%	0%	\$0.09	0.00	0.00	AEG Research
Lodging	Refrigeration	Strategic Energy Management	sqft	New	0.03	3	\$0.16	0%	0%	\$0.09	0.00	0.00	AEG Research
Lodging	Office Equipment	Strategic Energy Management	sqft	New	0.01	3	\$0.16	0%	0%	\$0.09	0.00	0.00	AEG Research
Lodging	Cooling	Commissioning	sqft	New	0.08	3	\$0.32	25%	90%	\$0.16	1.65	1.83	AEG Research
Lodging	Heating	Commissioning	sqft	New	0.16	3	\$0.32	25%	90%	\$0.16	2.89	3.07	AEG Research
Lodging	Ventilation	Commissioning	sqft	New	0.04	3	\$0.32	25%	90%	\$0.16	1.12	1.25	AEG Research
Lodging	Water Heating	Commissioning	sqft	New	0.03	3	\$0.32	25%	90%	\$0.16	0.45	0.71	AEG Research
Lodging	Interior Lighting	Commissioning	sqft	New	0.09	3	\$0.32	25%	90%	\$0.16	1.96	2.72	AEG Research
Lodging	Exterior Lighting	Commissioning	sqft	New	0.04	3	\$0.32	25%	90%	\$0.16	0.99	1.51	AEG Research
Lodging	Refrigeration	Commissioning	sqft	New	0.06	3	\$0.32	25%	90%	\$0.16	1.42	1.30	AEG Research
Lodging	Cooling	Retrocommissioning	sqft	New	0.08	3	\$0.20	0%	0%	\$0.10	0.00	0.00	AEG Research
Lodging	Heating	Retrocommissioning	sqft	New	0.16	3	\$0.20	0%	0%	\$0.10	0.00	0.00	AEG Research
Lodging	Ventilation	Retrocommissioning	sqft	New	0.04	3	\$0.20	0%	0%	\$0.10	0.00	0.00	AEG Research
Lodging	Water Heating	Retrocommissioning	sqft	New	0.03	3	\$0.20	0%	0%	\$0.10	0.00	0.00	AEG Research
Lodging	Interior Lighting	Retrocommissioning	sqft	New	0.09	3	\$0.20	0%	0%	\$0.10	0.00	0.00	AEG Research

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Lodging	Exterior Lighting	Retrocommissioning	sqft	New	0.04	3	\$0.20	0%	0%	\$0.10	0.00	0.00	AEG Research
Lodging	Refrigeration	Retrocommissioning	sqft	New	0.06	3	\$0.20	0%	0%	\$0.10	0.00	0.00	AEG Research
Lodging	Interior Lighting	Fruit Storage - Lighting Controls	sqft	New	0.06	10	\$0.09	0%	0%	\$0.14	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Lodging	Refrigeration	Fruit Storage Refrigeration Retrofit	sqft	New	0.18	10	\$1.09	0%	0%	\$0.81	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Lodging	Refrigeration	Fruit Storage Refrigeration Tuneup	sqft	New	0.05	3	\$0.23	0%	0%	\$1.65	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Lodging	Refrigeration	Fruit Storage Retrofit - CO2 Scrub	sqft	New	0.09	10	\$3.13	0%	0%	\$4.78	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Lodging	Refrigeration	Fruit Storage Retrofit - Membrane	sqft	New	0.02	10	\$0.68	0%	0%	\$5.19	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse	Cooling	Insulation - Ceiling	sqft roof	Existing	0.13	45	\$1.28	15%	35%	\$0.14	70.34	74.27	Building Energy Simulation Tool
Warehouse	Heating	Insulation - Ceiling	sqft roof	Existing	0.49	45	\$1.28	15%	35%	\$0.14	235.05	255.19	Building Energy Simulation Tool
Warehouse	Ventilation	Insulation - Ceiling	sqft roof	Existing	0.01	45	\$1.28	15%	35%	\$0.14	44.28	53.42	Building Energy Simulation Tool
Warehouse	Cooling	Insulation - Ducting	sqft duct	Existing	0.04	20	\$0.84	15%	35%	\$1.02	23.73	26.93	Building Energy Simulation Tool
Warehouse	Heating	Insulation - Ducting	sqft duct	Existing	0.02	20	\$0.84	15%	35%	\$1.02	9.45	10.53	Building Energy Simulation Tool
Warehouse	Ventilation	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.84	15%	35%	\$1.02	1.76	2.20	Building Energy Simulation Tool
Warehouse	Cooling	Building Shell - Cool Roofs	sqft roof	Existing	0.15	20	\$0.78	45%	50%	\$10.00	19.27	22.32	Building Energy Simulation Tool
Warehouse	Heating	Building Shell - Cool Roofs	sqft roof	Existing	-0.30	20	\$0.78	45%	50%	\$10.00	-35.58	-40.32	Building Energy Simulation Tool
Warehouse	Ventilation	Building Shell - Cool Roofs	sqft roof	Existing	-0.01	20	\$0.78	45%	50%	\$10.00	-6.56	-8.37	Building Energy Simulation Tool
Warehouse	Cooling	Insulation - Wall Cavity	sqft wall	Existing	0.01	45	\$0.78	15%	35%	\$0.02	1.16	1.19	Building Energy Simulation Tool
Warehouse	Heating	Insulation - Wall Cavity	sqft wall	Existing	4.02	45	\$0.78	15%	35%	\$0.02	386.62	387.60	Building Energy Simulation Tool
Warehouse	Ventilation	Insulation - Wall Cavity	sqft wall	Existing	0.11	45	\$0.78	15%	35%	\$0.02	60.26	71.87	Building Energy Simulation Tool

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Warehouse	Cooling	HVAC - Duct Repair and Sealing	tonCool	Existing	8.32	18	\$0.57	15%	25%	\$0.00	4.77	4.89	Building Energy Simulation Tool
Warehouse	Heating	HVAC - Duct Repair and Sealing	tonCool	Existing	26.84	18	\$0.57	15%	25%	\$0.00	13.63	13.66	Building Energy Simulation Tool
Warehouse	Ventilation	HVAC - Duct Repair and Sealing	tonCool	Existing	0.71	18	\$0.57	15%	25%	\$0.00	2.12	2.53	Building Energy Simulation Tool
Warehouse	Cooling	Windows - High Efficiency Glazing	sqft window	Existing	3.29	30	\$35.93	48%	48%	\$0.09	0.00	0.00	7th Power Plan
Warehouse	Heating	Windows - High Efficiency Glazing	sqft window	Existing	26.82	30	\$35.93	48%	48%	\$0.09	0.00	0.00	7th Power Plan
Warehouse	Ventilation	Windows - High Efficiency Glazing	sqft window	Existing	0.48	30	\$35.93	48%	48%	\$0.09	0.00	0.00	7th Power Plan
Warehouse	Cooling	Chiller - Chilled Water Reset	ChillCtrl	Existing	0.00	10	\$884.85	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Warehouse	Cooling	Chiller - Chilled Water Variable-Flow System	HP cool	Existing	0.00	15	\$332.55	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Warehouse	Cooling	Chiller - Variable Speed Fans	HP fan	Existing	0.00	15	\$208.36	15%	75%	\$0.00	0.00	0.00	New Jersey TRM
Warehouse	Cooling	Water-Cooled Chiller - Condenser Water Reset	ChillCtrl	Existing	0.00	10	\$884.85	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Warehouse	Cooling	HVAC - Economizer	HP cool	Existing	83.73	10	\$168.42	18%	75%	\$0.25	205.26	225.49	AEG-BEST
Warehouse	Heating	Space Heating - Heat Recovery Ventilator	CFM	Existing	9.54	14	\$5.08	3%	75%	\$0.06	1,128.04	1,149.88	7th Power Plan
Warehouse	Ventilation	Ventilation - ECM on VAV Boxes	sqft	Existing	0.04	18	\$0.25	15%	20%	\$0.49	29.47	35.85	7th Power Plan
Warehouse	Ventilation	Ventilation - Variable Speed Control	sqft	Existing	0.00	15	\$181.39	13%	50%	\$3,251.98	25.31	35.21	AEG-BEST
Warehouse	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.25	15%	75%	\$9.18	20.02	27.78	7th Power Plan
Warehouse	Cooling	Destratification Fans (HVLS)	Strat Fan	Existing	1,932.54	15	\$7,270.90	15%	75%	\$0.04	310.06	322.59	AEG Research
Warehouse	Heating	Destratification Fans (HVLS)	Strat Fan	Existing	15,208.28	15	\$7,270.90	15%	75%	\$0.04	2,118.08	2,236.83	AEG Research
Warehouse	Cooling	RTU - Maintenance	tonCool	Existing	38.28	3	\$35.00	15%	45%	\$0.27	57.60	69.76	AEG Research
Warehouse	Cooling	RTU - Advanced Controls	sqft	Existing	0.06	15	\$0.07	15%	45%	\$0.11	46.13	48.23	7th Power Plan
Warehouse	Cooling	RTU - Evaporative Precooler	tonCool	Existing	79.16	15	\$681.62	15%	75%	\$0.82	218.39	230.84	AEG Research
Warehouse	Cooling	Ductless Mini Split Heat Pump	tonCool	Existing	194.79	15	\$3,359.26	15%	25%	\$0.34	6.26	7.11	7th Power Plan

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Warehouse	Heating	Ductless Mini Split Heat Pump	tonCool	Existing	722.36	15	\$3,359.26	15%	25%	\$0.34	277.46	310.97	7th Power Plan
Warehouse	Cooling	Thermostat - WiFi/Interactive	sqft	Existing	0.26	5	\$0.66	30%	40%	\$0.09	69.55	77.82	7th Power Plan
Warehouse	Heating	Thermostat - WiFi/Interactive	sqft	Existing	1.06	5	\$0.66	30%	40%	\$0.09	251.83	277.91	7th Power Plan
Warehouse	Ventilation	Thermostat - WiFi/Interactive	sqft	Existing	0.03	5	\$0.66	30%	40%	\$0.09	47.83	58.52	7th Power Plan
Warehouse	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	Existing	45.29	10	\$8.35	25%	65%	\$0.01	16.60	30.91	Illinois TRM
Warehouse	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	Existing	46.89	10	\$11.64	25%	65%	-\$0.21	8.56	16.08	7th Power Plan
Warehouse	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	Existing	57.50	15	\$36.75	15%	75%	\$0.04	18.86	29.23	Hawaii TRM
Warehouse	Water Heating	Water Heater - Pipe Insulation	PipeFeet	Existing	185.87	15	\$14.88	16%	75%	\$0.01	42.77	72.96	AEG-BEST
Warehouse	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	Existing	30.71	4	\$144.04	25%	65%	-\$0.66	10.86	20.47	7th Power Plan
Warehouse	Water Heating	Water Heater - Thermostat Setback	WHunits	Existing	57.12	2	\$5.00	15%	75%	\$0.02	20.11	37.46	Illinois TRM
Warehouse	Water Heating	Water Heater - Solar System	PipeFeet	Existing	639.96	20	\$215.28	1%	30%	\$0.02	71.32	124.39	AEG-BEST
Warehouse	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.22	15	\$0.35	3%	23%	\$0.14	784.16	944.51	7th Power Plan
Warehouse	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.30	15	\$0.58	3%	23%	\$0.16	1,056.24	1,300.22	7th Power Plan
Warehouse	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	Existing	611.63	15	\$54.41	1%	3%	\$0.01	21.82	30.17	7th Power Plan
Warehouse	Interior Lighting	Interior Lighting - Timeclocks and Timers	occ sens	Existing	0.00	8	\$111.67	7%	15%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Warehouse	Interior Lighting	Interior Lighting - Skylights	1000 sqft	Existing	0.00	15	\$1,006.35	15%	30%	\$0.00	0.00	0.00	AEG Research
Warehouse	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	1000 sqft	Existing	34.69	16	\$1,807.69	5%	15%	\$4.15	48.35	71.11	7th Power Plan
Warehouse	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	Existing	355.75	11	\$30.80	15%	50%	\$0.01	183.00	247.85	Illinois TRM
Warehouse	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	ELtg Watts	Existing	0.87	8	\$0.63	15%	25%	\$0.09	201.68	307.29	7th Power Plan

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Warehouse	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	Existing	71.31	8	\$55.10	15%	25%	\$0.09	102.05	160.06	Pacific Gas and Electric Research
Warehouse	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	Existing	85.15	7	\$3,400.00	15%	30%	\$4.84	179.52	292.43	AEG Research
Warehouse	Refrigeration	Refrigeration - Anti-Sweat Heater	Fridge Feet	Existing	96.72	8	\$48.18	0%	0%	\$0.08	0.00	0.00	7th Power Plan
Warehouse	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	Existing	188.54	4	\$10.44	0%	0%	\$0.01	0.00	0.00	Michigan Energy Measures Database
Warehouse	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	Existing	1,605.45	16	\$165.20	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Warehouse	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	Existing	141.67	15	\$335.85	0%	0%	\$0.25	0.00	0.00	7th Power Plan
Warehouse	Refrigeration	Refrigeration - Strip Curtain	Walkin Door	Existing	133.95	2	\$10.41	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Warehouse	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	Existing	2.28	15	\$45.43	0%	0%	\$2.13	0.00	0.00	Annual Energy Outlook, 2015
Warehouse	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	Existing	47.17	15	\$313.82	0%	0%	\$0.71	0.00	0.00	Annual Energy Outlook, 2015
Warehouse	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	Existing	1,078.33	10	\$506.05	0%	0%	\$0.06	0.00	0.00	Vermont TRM
Warehouse	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	Existing	58.53	6	\$45.41	0%	0%	\$0.15	0.00	0.00	7th Power Plan
Warehouse	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	Existing	4.72	8	\$3.72	0%	0%	\$0.12	0.00	0.00	7th Power Plan
Warehouse	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	Existing	1,108.33	5	\$45.85	0%	0%	\$0.01	0.00	0.00	Illinois TRM
Warehouse	Refrigeration	Grocery - ECMs for Display Cases	Fridge Case	Existing	245.51	16	\$165.20	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Warehouse	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	Existing	1,230.49	5	\$187.94	25%	75%	\$0.03	41.41	43.18	Illinois TRM
Warehouse	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	Existing	424.30	18	\$8,526.67	25%	50%	\$1.55	61.88	76.44	7th Power Plan
Warehouse	Office Equipment	Office Equipment - Smart Power Strips	Smart Strip	Existing	8.91	4	\$41.63	10%	50%	\$1.09	133.74	118.88	7th Power Plan
Warehouse	Cooling	Lodging - Guest Room Controls	LodgUnit	Existing	86.99	15	\$260.00	0%	0%	\$10.00	0.00	0.00	AEG-BEST
Warehouse	Heating	Lodging - Guest Room Controls	LodgUnit	Existing	-200.35	15	\$260.00	0%	0%	\$10.00	0.00	0.00	AEG-BEST

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Warehouse	Office Equipment	Data Center - Best Practice Measures	sqft	Existing	0.02	5	\$0.00	0%	0%	\$0.02	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse	Cooling	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.01	0%	0%	\$0.04	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse	Ventilation	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.01	0%	0%	\$0.04	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse	Interior Lighting	Data Center - Commercially Available Measures	sqft	Existing	0.02	8	\$0.01	0%	0%	\$0.04	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse	Office Equipment	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.01	0%	0%	\$0.04	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse	Cooling	Data Center - Cutting Edge Measures	sqft	Existing	0.02	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse	Office Equipment	Data Center - Cutting Edge Measures	sqft	Existing	0.00	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	Existing	1,150.45	18	\$4,092.80	0%	0%	\$0.28	0.00	0.00	7th Power Plan
Warehouse	Miscellaneous	Pool Pump - Timer	perBldg	Existing	0.00	10	\$85.22	15%	75%	\$0.00	0.00	0.00	Ontario Power TRM
Warehouse	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	Existing	5,562.60	6	\$35.93	1%	3%	\$0.00	0.00	62.15	7th Power Plan
Warehouse	Cooling	Advanced New Construction Designs	sqft	Existing	0.46	25	\$4.11	0%	0%	\$0.11	0.00	0.00	AEG Research
Warehouse	Heating	Advanced New Construction Designs	sqft	Existing	1.80	25	\$4.11	0%	0%	\$0.11	0.00	0.00	AEG Research
Warehouse	Ventilation	Advanced New Construction Designs	sqft	Existing	0.06	25	\$4.11	0%	0%	\$0.11	0.00	0.00	AEG Research
Warehouse	Water Heating	Advanced New Construction Designs	sqft	Existing	0.04	25	\$4.11	0%	0%	\$0.11	0.00	0.00	AEG Research
Warehouse	Interior Lighting	Advanced New Construction Designs	sqft	Existing	0.41	25	\$4.11	0%	0%	\$0.11	0.00	0.00	AEG Research
Warehouse	Exterior Lighting	Advanced New Construction Designs	sqft	Existing	0.09	25	\$4.11	0%	0%	\$0.11	0.00	0.00	AEG Research
Warehouse	Cooling	Strategic Energy Management	sqft	Existing	0.07	3	\$0.14	3%	11%	\$0.08	15.15	18.39	AEG Research
Warehouse	Heating	Strategic Energy Management	sqft	Existing	0.27	3	\$0.14	3%	11%	\$0.08	55.95	66.10	AEG Research
Warehouse	Ventilation	Strategic Energy Management	sqft	Existing	0.01	3	\$0.14	3%	11%	\$0.08	10.39	14.05	AEG Research

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Warehouse	Water Heating	Strategic Energy Management	sqft	Existing	0.01	3	\$0.14	3%	11%	\$0.08	3.71	7.04	AEG Research
Warehouse	Interior Lighting	Strategic Energy Management	sqft	Existing	0.06	3	\$0.14	3%	11%	\$0.08	71.24	105.64	AEG Research
Warehouse	Exterior Lighting	Strategic Energy Management	sqft	Existing	0.01	3	\$0.14	3%	11%	\$0.08	14.77	23.51	AEG Research
Warehouse	Refrigeration	Strategic Energy Management	sqft	Existing	0.01	3	\$0.14	3%	11%	\$0.08	11.53	8.44	AEG Research
Warehouse	Office Equipment	Strategic Energy Management	sqft	Existing	0.01	3	\$0.14	3%	11%	\$0.08	16.53	14.66	AEG Research
Warehouse	Cooling	Commissioning	sqft	Existing	0.09	3	\$0.36	0%	0%	\$0.17	0.00	0.00	AEG Research
Warehouse	Heating	Commissioning	sqft	Existing	0.36	3	\$0.36	0%	0%	\$0.17	0.00	0.00	AEG Research
Warehouse	Ventilation	Commissioning	sqft	Existing	0.01	3	\$0.36	0%	0%	\$0.17	0.00	0.00	AEG Research
Warehouse	Water Heating	Commissioning	sqft	Existing	0.00	3	\$0.36	0%	0%	\$0.17	0.00	0.00	AEG Research
Warehouse	Interior Lighting	Commissioning	sqft	Existing	0.07	3	\$0.36	0%	0%	\$0.17	0.00	0.00	AEG Research
Warehouse	Exterior Lighting	Commissioning	sqft	Existing	0.02	3	\$0.36	0%	0%	\$0.17	0.00	0.00	AEG Research
Warehouse	Refrigeration	Commissioning	sqft	Existing	0.02	3	\$0.36	0%	0%	\$0.17	0.00	0.00	AEG Research
Warehouse	Cooling	Retrocommissioning	sqft	Existing	0.09	3	\$0.23	9%	71%	\$0.11	162.00	197.01	AEG Research
Warehouse	Heating	Retrocommissioning	sqft	Existing	0.38	3	\$0.23	9%	71%	\$0.11	598.11	708.17	AEG Research
Warehouse	Ventilation	Retrocommissioning	sqft	Existing	0.01	3	\$0.23	9%	71%	\$0.11	111.09	150.50	AEG Research
Warehouse	Water Heating	Retrocommissioning	sqft	Existing	0.00	3	\$0.23	9%	71%	\$0.11	13.22	25.14	AEG Research
Warehouse	Interior Lighting	Retrocommissioning	sqft	Existing	0.07	3	\$0.23	9%	71%	\$0.11	634.67	943.16	AEG Research
Warehouse	Exterior Lighting	Retrocommissioning	sqft	Existing	0.02	3	\$0.23	9%	71%	\$0.11	131.54	209.94	AEG Research
Warehouse	Refrigeration	Retrocommissioning	sqft	Existing	0.02	3	\$0.23	9%	71%	\$0.11	205.42	150.62	AEG Research
Warehouse	Interior Lighting	Fruit Storage - Lighting Controls	sqft	Existing	0.05	10	\$0.09	0%	0%	\$0.17	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse	Refrigeration	Fruit Storage Refrigeration Retrofit	sqft	Existing	0.05	10	\$1.09	0%	0%	\$2.85	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse	Refrigeration	Fruit Storage Refrigeration Tuneup	sqft	Existing	0.01	3	\$0.23	0%	0%	\$5.84	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx

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Warehouse	Refrigeration	Fruit Storage Retrofit - CO2 Scrub	sqft	Existing	0.02	10	\$3.13	0%	0%	\$16.90	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse	Refrigeration	Fruit Storage Retrofit - Membrane	sqft	Existing	0.00	10	\$0.68	0%	0%	\$18.33	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse	Cooling	Insulation - Ceiling	sqft roof	New	0.00	45	\$1.28	15%	50%	\$0.19	0.00	0.00	Building Energy Simulation Tool
Warehouse	Heating	Insulation - Ceiling	sqft roof	New	0.50	45	\$1.28	15%	50%	\$0.19	115.39	114.56	Building Energy Simulation Tool
Warehouse	Ventilation	Insulation - Ceiling	sqft roof	New	0.01	45	\$1.28	15%	50%	\$0.19	16.76	18.40	Building Energy Simulation Tool
Warehouse	Cooling	Insulation - Ducting	sqft duct	New	0.07	20	\$0.84	15%	25%	\$0.71	5.37	5.42	Building Energy Simulation Tool
Warehouse	Heating	Insulation - Ducting	sqft duct	New	0.03	20	\$0.84	15%	25%	\$0.71	1.84	1.83	Building Energy Simulation Tool
Warehouse	Ventilation	Insulation - Ducting	sqft duct	New	0.00	20	\$0.84	15%	25%	\$0.71	0.26	0.29	Building Energy Simulation Tool
Warehouse	Cooling	Building Shell - Cool Roofs	sqft roof	New	0.15	20	\$0.78	45%	50%	\$10.00	5.68	5.73	Building Energy Simulation Tool
Warehouse	Heating	Building Shell - Cool Roofs	sqft roof	New	-0.33	20	\$0.78	45%	50%	\$10.00	-10.67	-10.64	Building Energy Simulation Tool
Warehouse	Ventilation	Building Shell - Cool Roofs	sqft roof	New	-0.01	20	\$0.78	45%	50%	\$10.00	-1.53	-1.70	Building Energy Simulation Tool
Warehouse	Cooling	Insulation - Wall Cavity	sqft wall	New	-0.01	45	\$0.78	15%	50%	\$0.12	-0.43	-0.44	Building Energy Simulation Tool
Warehouse	Heating	Insulation - Wall Cavity	sqft wall	New	0.54	45	\$0.78	15%	50%	\$0.12	23.07	23.08	Building Energy Simulation Tool
Warehouse	Ventilation	Insulation - Wall Cavity	sqft wall	New	0.01	45	\$0.78	15%	50%	\$0.12	3.21	3.52	Building Energy Simulation Tool
Warehouse	Cooling	HVAC - Duct Repair and Sealing	tonCool	New	14.41	18	\$0.57	15%	25%	\$0.00	2.08	2.09	Building Energy Simulation Tool
Warehouse	Heating	HVAC - Duct Repair and Sealing	tonCool	New	21.23	18	\$0.57	15%	25%	\$0.00	2.65	2.66	Building Energy Simulation Tool
Warehouse	Ventilation	HVAC - Duct Repair and Sealing	tonCool	New	0.35	18	\$0.57	15%	25%	\$0.00	0.37	0.41	Building Energy Simulation Tool
Warehouse	Cooling	Windows - High Efficiency Glazing	sqft window	New	3.15	30	\$35.93	66%	66%	\$0.09	0.00	0.00	7th Power Plan
Warehouse	Heating	Windows - High Efficiency Glazing	sqft window	New	27.56	30	\$35.93	66%	66%	\$0.09	0.00	0.00	7th Power Plan

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Warehouse	Ventilation	Windows - High Efficiency Glazing	sqft window	New	0.28	30	\$35.93	66%	66%	\$0.09	0.00	0.00	7th Power Plan
Warehouse	Cooling	Chiller - Chilled Water Reset	ChillCtrl	New	0.00	10	\$884.85	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Warehouse	Cooling	Chiller - Chilled Water Variable-Flow System	HP cool	New	0.00	15	\$332.55	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Warehouse	Cooling	Chiller - Variable Speed Fans	HP fan	New	0.00	15	\$208.36	15%	75%	\$0.00	0.00	0.00	New Jersey TRM
Warehouse	Cooling	Water-Cooled Chiller - Condenser Water Reset	ChillCtrl	New	0.00	10	\$884.85	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Warehouse	Cooling	HVAC - Economizer	HP cool	New	81.87	10	\$168.42	18%	75%	\$0.26	21.38	21.84	AEG-BEST
Warehouse	Heating	Space Heating - Heat Recovery Ventilator	CFM	New	9.01	14	\$5.08	6%	75%	\$0.06	130.00	130.33	7th Power Plan
Warehouse	Ventilation	Ventilation - ECM on VAV Boxes	sqft	New	0.02	18	\$0.25	15%	20%	\$0.57	6.11	6.78	7th Power Plan
Warehouse	Ventilation	Ventilation - Variable Speed Control	sqft	New	0.00	15	\$181.39	19%	50%	\$3,789.91	2.51	3.00	AEG-BEST
Warehouse	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.25	15%	75%	\$10.70	2.38	2.84	7th Power Plan
Warehouse	Cooling	Destratification Fans (HVLS)	Strat Fan	New	1,786.69	15	\$7,270.90	15%	75%	\$0.05	38.35	38.81	AEG Research
Warehouse	Heating	Destratification Fans (HVLS)	Strat Fan	New	14,813.58	15	\$7,270.90	15%	75%	\$0.05	276.24	276.15	AEG Research
Warehouse	Cooling	RTU - Maintenance	tonCool	New	38.79	3	\$35.00	15%	45%	\$0.28	1.35	1.45	AEG Research
Warehouse	Cooling	RTU - Advanced Controls	sqft	New	0.06	15	\$0.07	15%	45%	\$0.11	11.02	11.05	7th Power Plan
Warehouse	Cooling	RTU - Evaporative Precooler	tonCool	New	79.14	15	\$681.62	15%	75%	\$0.86	67.24	67.20	AEG Research
Warehouse	Cooling	Ductless Mini Split Heat Pump	tonCool	New	170.15	15	\$3,359.26	15%	25%	\$0.37	1.02	1.03	7th Power Plan
Warehouse	Heating	Ductless Mini Split Heat Pump	tonCool	New	744.80	15	\$3,359.26	15%	25%	\$0.37	52.34	52.47	7th Power Plan
Warehouse	Cooling	Thermostat - WiFi/Interactive	sqft	New	0.26	5	\$0.66	30%	40%	\$0.10	2.37	2.49	7th Power Plan
Warehouse	Heating	Thermostat - WiFi/Interactive	sqft	New	1.10	5	\$0.66	30%	40%	\$0.10	8.90	9.10	7th Power Plan
Warehouse	Ventilation	Thermostat - WiFi/Interactive	sqft	New	0.02	5	\$0.66	30%	40%	\$0.10	1.29	1.60	7th Power Plan
Warehouse	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	New	31.82	10	\$8.35	25%	65%	\$0.01	1.50	2.14	Illinois TRM

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Warehouse	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	New	33.20	10	\$11.64	25%	65%	-\$0.20	0.78	1.11	7th Power Plan
Warehouse	Water Heating	Water Heater - High Efficiency Circulation Pump	WHUnits	New	40.88	15	\$36.75	15%	75%	\$0.04	4.61	5.42	Hawaii TRM
Warehouse	Water Heating	Water Heater - Pipe Insulation	PipeFeet	New	125.85	15	\$14.88	1%	75%	\$0.01	7.21	9.68	AEG-BEST
Warehouse	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	New	22.06	4	\$144.04	25%	65%	-\$0.64	0.48	0.74	7th Power Plan
Warehouse	Water Heating	Water Heater - Thermostat Setback	WHUnits	New	40.74	2	\$5.00	15%	75%	\$0.02	0.25	0.41	Illinois TRM
Warehouse	Water Heating	Water Heater - Solar System	PipeFeet	New	438.43	20	\$215.28	1%	30%	\$0.02	10.17	13.56	AEG-BEST
Warehouse	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.18	15	\$0.35	11%	23%	\$0.14	208.20	229.05	7th Power Plan
Warehouse	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.25	15	\$0.58	11%	23%	\$0.17	285.90	315.73	7th Power Plan
Warehouse	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	New	500.80	15	\$54.41	1%	3%	\$0.01	2.23	2.61	7th Power Plan
Warehouse	Interior Lighting	Interior Lighting - Timeclocks and Timers	occ sens	New	0.00	8	\$111.67	7%	15%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Warehouse	Interior Lighting	Interior Lighting - Skylights	1000 sqft	New	0.00	15	\$1,006.35	18%	33%	\$0.00	0.00	0.00	AEG Research
Warehouse	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	1000 sqft	New	27.95	16	\$1,807.69	5%	15%	\$4.36	6.42	7.63	7th Power Plan
Warehouse	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	New	287.27	11	\$30.80	15%	50%	\$0.01	18.86	22.59	Illinois TRM
Warehouse	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	ELtg Watts	New	0.58	8	\$0.63	15%	25%	\$0.09	14.87	20.51	7th Power Plan
Warehouse	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	New	48.65	8	\$55.10	15%	25%	\$0.09	7.85	10.77	Pacific Gas and Electric Research
Warehouse	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	New	59.82	7	\$3,400.00	15%	30%	\$4.91	12.68	17.64	AEG Research
Warehouse	Refrigeration	Refrigeration - Anti-Sweat Heater	Fridge Feet	New	68.95	8	\$48.18	0%	0%	\$0.11	0.00	0.00	7th Power Plan
Warehouse	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	New	164.91	4	\$10.44	0%	0%	\$0.02	0.00	0.00	Michigan Energy Measures Database
Warehouse	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	New	1,457.83	16	\$165.20	0%	0%	\$0.01	0.00	0.00	7th Power Plan

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Warehouse	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	New	133.85	15	\$335.85	0%	0%	\$0.27	0.00	0.00	7th Power Plan
Warehouse	Refrigeration	Refrigeration - Strip Curtain	Walkin Door	New	125.08	2	\$10.41	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Warehouse	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	New	2.15	15	\$45.43	0%	0%	\$2.27	0.00	0.00	Annual Energy Outlook, 2015
Warehouse	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	New	44.57	15	\$313.82	0%	0%	\$0.76	0.00	0.00	Annual Energy Outlook, 2015
Warehouse	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	New	979.19	10	\$506.05	0%	0%	\$0.07	0.00	0.00	Vermont TRM
Warehouse	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	New	53.40	6	\$45.41	0%	0%	\$0.16	0.00	0.00	7th Power Plan
Warehouse	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	New	4.30	8	\$3.72	0%	0%	\$0.14	0.00	0.00	7th Power Plan
Warehouse	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	New	1,032.89	5	\$45.85	0%	0%	\$0.01	0.00	0.00	Illinois TRM
Warehouse	Refrigeration	Grocery - ECMs for Display Cases	Fridge Case	New	222.01	16	\$165.20	0%	0%	\$0.08	0.00	0.00	7th Power Plan
Warehouse	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	New	1,162.56	5	\$187.94	25%	75%	\$0.04	1.70	1.74	Illinois TRM
Warehouse	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	New	251.16	18	\$8,526.67	25%	50%	\$1.81	13.11	14.55	7th Power Plan
Warehouse	Office Equipment	Office Equipment - Smart Power Strips	Smart Strip	New	8.42	4	\$41.63	10%	50%	\$1.14	4.81	4.25	7th Power Plan
Warehouse	Cooling	Lodging - Guest Room Controls	LodgUnit	New	80.11	15	\$260.00	0%	0%	\$10.00	0.00	0.00	AEG-BEST
Warehouse	Heating	Lodging - Guest Room Controls	LodgUnit	New	-215.23	15	\$260.00	0%	0%	\$10.00	0.00	0.00	AEG-BEST
Warehouse	Office Equipment	Data Center - Best Practice Measures	sqft	New	0.02	5	\$0.00	0%	0%	\$0.02	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse	Cooling	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.01	0%	0%	\$0.03	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse	Ventilation	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.01	0%	0%	\$0.03	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse	Interior Lighting	Data Center - Commercially Available Measures	sqft	New	0.01	8	\$0.01	0%	0%	\$0.03	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse	Office Equipment	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.01	0%	0%	\$0.03	0.00	0.00	com-datacenters-7p_v5p.xlsx

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Warehouse	Cooling	Data Center - Cutting Edge Measures	sqft	New	0.02	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse	Office Equipment	Data Center - Cutting Edge Measures	sqft	New	0.00	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	New	678.41	18	\$4,092.80	0%	0%	\$0.33	0.00	0.00	7th Power Plan
Warehouse	Miscellaneous	Pool Pump - Timer	perBldg	New	0.00	10	\$85.22	15%	75%	\$0.00	0.00	0.00	Ontario Power TRM
Warehouse	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	New	5,562.60	6	\$35.93	1%	3%	\$0.00	0.00	3.35	7th Power Plan
Warehouse	Cooling	Advanced New Construction Designs	sqft	New	0.45	25	\$4.11	10%	15%	\$0.12	19.11	19.13	AEG Research
Warehouse	Heating	Advanced New Construction Designs	sqft	New	1.87	25	\$4.11	10%	15%	\$0.12	69.50	69.06	AEG Research
Warehouse	Ventilation	Advanced New Construction Designs	sqft	New	0.03	25	\$4.11	10%	15%	\$0.12	10.10	11.21	AEG Research
Warehouse	Water Heating	Advanced New Construction Designs	sqft	New	0.03	25	\$4.11	10%	15%	\$0.12	4.78	5.48	AEG Research
Warehouse	Interior Lighting	Advanced New Construction Designs	sqft	New	0.34	25	\$4.11	10%	15%	\$0.12	79.08	84.29	AEG Research
Warehouse	Exterior Lighting	Advanced New Construction Designs	sqft	New	0.06	25	\$4.11	10%	15%	\$0.12	14.90	16.90	AEG Research
Warehouse	Cooling	Strategic Energy Management	sqft	New	0.07	3	\$0.13	3%	11%	\$0.08	0.40	0.42	AEG Research
Warehouse	Heating	Strategic Energy Management	sqft	New	0.28	3	\$0.13	3%	11%	\$0.08	1.49	1.55	AEG Research
Warehouse	Ventilation	Strategic Energy Management	sqft	New	0.00	3	\$0.13	3%	11%	\$0.08	0.21	0.27	AEG Research
Warehouse	Water Heating	Strategic Energy Management	sqft	New	0.00	3	\$0.13	3%	11%	\$0.08	0.10	0.16	AEG Research
Warehouse	Interior Lighting	Strategic Energy Management	sqft	New	0.05	3	\$0.13	3%	11%	\$0.08	1.71	2.27	AEG Research
Warehouse	Exterior Lighting	Strategic Energy Management	sqft	New	0.01	3	\$0.13	3%	11%	\$0.08	0.32	0.48	AEG Research
Warehouse	Refrigeration	Strategic Energy Management	sqft	New	0.01	3	\$0.13	3%	11%	\$0.08	0.24	0.15	AEG Research
Warehouse	Office Equipment	Strategic Energy Management	sqft	New	0.01	3	\$0.13	3%	11%	\$0.08	0.37	0.33	AEG Research
Warehouse	Cooling	Commissioning	sqft	New	0.09	3	\$0.34	9%	71%	\$0.17	4.25	4.53	AEG Research

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Warehouse	Heating	Commissioning	sqft	New	0.39	3	\$0.34	9%	71%	\$0.17	15.98	16.59	AEG Research
Warehouse	Ventilation	Commissioning	sqft	New	0.01	3	\$0.34	9%	71%	\$0.17	2.30	2.93	AEG Research
Warehouse	Water Heating	Commissioning	sqft	New	0.00	3	\$0.34	9%	71%	\$0.17	0.37	0.59	AEG Research
Warehouse	Interior Lighting	Commissioning	sqft	New	0.06	3	\$0.34	9%	71%	\$0.17	15.25	20.29	AEG Research
Warehouse	Exterior Lighting	Commissioning	sqft	New	0.01	3	\$0.34	9%	71%	\$0.17	2.87	4.33	AEG Research
Warehouse	Refrigeration	Commissioning	sqft	New	0.01	3	\$0.34	9%	71%	\$0.17	4.24	2.77	AEG Research
Warehouse	Cooling	Retrocommissioning	sqft	New	0.09	3	\$0.21	0%	0%	\$0.11	0.00	0.00	AEG Research
Warehouse	Heating	Retrocommissioning	sqft	New	0.39	3	\$0.21	0%	0%	\$0.11	0.00	0.00	AEG Research
Warehouse	Ventilation	Retrocommissioning	sqft	New	0.01	3	\$0.21	0%	0%	\$0.11	0.00	0.00	AEG Research
Warehouse	Water Heating	Retrocommissioning	sqft	New	0.00	3	\$0.21	0%	0%	\$0.11	0.00	0.00	AEG Research
Warehouse	Interior Lighting	Retrocommissioning	sqft	New	0.06	3	\$0.21	0%	0%	\$0.11	0.00	0.00	AEG Research
Warehouse	Exterior Lighting	Retrocommissioning	sqft	New	0.01	3	\$0.21	0%	0%	\$0.11	0.00	0.00	AEG Research
Warehouse	Refrigeration	Retrocommissioning	sqft	New	0.01	3	\$0.21	0%	0%	\$0.11	0.00	0.00	AEG Research
Warehouse	Interior Lighting	Fruit Storage - Lighting Controls	sqft	New	0.04	10	\$0.09	0%	0%	\$0.17	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse	Refrigeration	Fruit Storage Refrigeration Retrofit	sqft	New	0.04	10	\$1.09	0%	0%	\$3.36	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse	Refrigeration	Fruit Storage Refrigeration Tuneup	sqft	New	0.01	3	\$0.23	0%	0%	\$6.88	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse	Refrigeration	Fruit Storage Retrofit - CO2 Scrub	sqft	New	0.02	10	\$3.13	0%	0%	\$19.91	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse	Refrigeration	Fruit Storage Retrofit - Membrane	sqft	New	0.00	10	\$0.68	0%	0%	\$21.60	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse, Controlled Atm.	Cooling	Insulation - Ceiling	sqft roof	Existing	0.09	45	\$1.28	15%	35%	\$0.18	75.10	80.89	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Heating	Insulation - Ceiling	sqft roof	Existing	0.40	45	\$1.28	15%	35%	\$0.18	110.86	115.08	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Ventilation	Insulation - Ceiling	sqft roof	Existing	0.04	45	\$1.28	15%	35%	\$0.18	83.54	103.66	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Cooling	Insulation - Ducting	sqft duct	Existing	0.03	20	\$0.84	15%	50%	\$1.40	43.58	50.51	Building Energy Simulation Tool

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Warehouse, Controlled Atm.	Heating	Insulation - Ducting	sqft duct	Existing	0.02	20	\$0.84	15%	50%	\$1.40	7.81	8.31	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Ventilation	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.84	15%	50%	\$1.40	5.86	7.49	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Cooling	Building Shell - Cool Roofs	sqft roof	Existing	0.10	20	\$0.78	45%	50%	\$10.00	20.99	24.50	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Heating	Building Shell - Cool Roofs	sqft roof	Existing	-0.26	20	\$0.78	45%	50%	\$10.00	-17.50	-18.66	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Ventilation	Building Shell - Cool Roofs	sqft roof	Existing	-0.02	20	\$0.78	45%	50%	\$10.00	-13.02	-16.74	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Cooling	Insulation - Wall Cavity	sqft wall	Existing	0.01	45	\$0.78	15%	35%	\$0.02	1.19	1.26	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Heating	Insulation - Wall Cavity	sqft wall	Existing	2.97	45	\$0.78	15%	35%	\$0.02	160.49	161.21	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Ventilation	Insulation - Wall Cavity	sqft wall	Existing	0.27	45	\$0.78	15%	35%	\$0.02	114.86	140.08	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Cooling	HVAC - Duct Repair and Sealing	tonCool	Existing	5.53	18	\$0.57	15%	50%	\$0.00	17.12	18.18	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Heating	HVAC - Duct Repair and Sealing	tonCool	Existing	19.86	18	\$0.57	15%	50%	\$0.00	19.83	19.90	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Ventilation	HVAC - Duct Repair and Sealing	tonCool	Existing	1.79	18	\$0.57	15%	50%	\$0.00	14.19	17.29	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Cooling	Windows - High Efficiency Glazing	sqft window	Existing	2.26	30	\$35.93	48%	48%	\$0.11	0.00	0.00	7th Power Plan
Warehouse, Controlled Atm.	Heating	Windows - High Efficiency Glazing	sqft window	Existing	21.91	30	\$35.93	48%	48%	\$0.11	0.00	0.00	7th Power Plan
Warehouse, Controlled Atm.	Ventilation	Windows - High Efficiency Glazing	sqft window	Existing	1.19	30	\$35.93	48%	48%	\$0.11	0.00	0.00	7th Power Plan
Warehouse, Controlled Atm.	Cooling	Chiller - Chilled Water Reset	ChillCtrl	Existing	2,875.47	10	\$884.85	15%	75%	\$0.04	37.47	41.36	AEG-BEST
Warehouse, Controlled Atm.	Cooling	Chiller - Chilled Water Variable-Flow System	HP cool	Existing	112.83	15	\$332.55	15%	75%	\$0.29	202.29	227.94	AEG-BEST
Warehouse, Controlled Atm.	Cooling	Chiller - Variable Speed Fans	HP fan	Existing	423.32	15	\$208.36	15%	75%	\$0.05	76.97	84.22	New Jersey TRM
Warehouse, Controlled Atm.	Cooling	Water-Cooled Chiller - Condenser Water Reset	ChillCtrl	Existing	13,433.94	10	\$884.85	15%	75%	\$0.01	17.38	19.32	AEG-BEST
Warehouse, Controlled Atm.	Cooling	HVAC - Economizer	HP cool	Existing	55.60	10	\$168.42	18%	75%	\$0.36	216.05	249.04	AEG-BEST

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Warehouse, Controlled Atm.	Heating	Space Heating - Heat Recovery Ventilator	CFM	Existing	7.05	14	\$5.08	3%	75%	\$0.08	468.26	478.69	7th Power Plan
Warehouse, Controlled Atm.	Ventilation	Ventilation - ECM on VAV Boxes	sqft	Existing	0.10	18	\$0.25	15%	20%	\$0.19	57.03	70.36	7th Power Plan
Warehouse, Controlled Atm.	Ventilation	Ventilation - Variable Speed Control	sqft	Existing	0.01	15	\$181.39	13%	50%	\$1,252.62	50.26	70.26	AEG-BEST
Warehouse, Controlled Atm.	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.01	15	\$0.25	15%	75%	\$3.54	39.90	55.53	7th Power Plan
Warehouse, Controlled Atm.	Cooling	Destratification Fans (HVLS)	Strat Fan	Existing	1,256.34	15	\$7,270.90	15%	15%	\$0.06	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Heating	Destratification Fans (HVLS)	Strat Fan	Existing	11,239.49	15	\$7,270.90	15%	15%	\$0.06	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Cooling	RTU - Maintenance	tonCool	Existing	26.86	3	\$35.00	15%	45%	\$0.37	36.76	45.94	AEG Research
Warehouse, Controlled Atm.	Cooling	RTU - Advanced Controls	sqft	Existing	0.05	15	\$0.07	15%	45%	\$0.15	30.00	32.17	7th Power Plan
Warehouse, Controlled Atm.	Cooling	RTU - Evaporative Precooler	tonCool	Existing	55.01	15	\$681.62	15%	75%	\$1.14	136.60	148.89	AEG Research
Warehouse, Controlled Atm.	Cooling	Ductless Mini Split Heat Pump	tonCool	Existing	135.35	15	\$3,359.26	15%	25%	\$0.46	3.59	4.26	7th Power Plan
Warehouse, Controlled Atm.	Heating	Ductless Mini Split Heat Pump	tonCool	Existing	593.09	15	\$3,359.26	15%	25%	\$0.46	124.73	131.90	7th Power Plan
Warehouse, Controlled Atm.	Cooling	Thermostat - WiFi/Interactive	sqft	Existing	0.17	5	\$0.66	30%	40%	\$0.12	72.59	83.11	7th Power Plan
Warehouse, Controlled Atm.	Heating	Thermostat - WiFi/Interactive	sqft	Existing	0.86	5	\$0.66	30%	40%	\$0.12	118.88	125.34	7th Power Plan
Warehouse, Controlled Atm.	Ventilation	Thermostat - WiFi/Interactive	sqft	Existing	0.08	5	\$0.66	30%	40%	\$0.12	89.15	112.98	7th Power Plan
Warehouse, Controlled Atm.	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	Existing	66.41	10	\$8.35	25%	65%	\$0.01	22.50	41.91	Illinois TRM
Warehouse, Controlled Atm.	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	Existing	68.76	10	\$11.64	25%	65%	-\$0.14	11.60	21.81	7th Power Plan
Warehouse, Controlled Atm.	Water Heating	Water Heater - High Efficiency Circulation Pump	WHUnits	Existing	57.50	15	\$36.75	15%	75%	\$0.04	25.57	39.62	Hawaii TRM
Warehouse, Controlled Atm.	Water Heating	Water Heater - Pipe Insulation	PipeFeet	Existing	272.55	15	\$14.88	16%	75%	\$0.00	57.98	98.91	AEG-BEST
Warehouse, Controlled Atm.	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	Existing	45.04	4	\$144.04	25%	65%	-\$0.45	14.72	27.76	7th Power Plan

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Warehouse, Controlled Atm.	Water Heating	Water Heater - Thermostat Setback	WHunits	Existing	57.12	2	\$5.00	15%	75%	\$0.02	27.26	50.78	Illinois TRM
Warehouse, Controlled Atm.	Water Heating	Water Heater - Solar System	PipeFeet	Existing	938.40	20	\$215.28	1%	30%	\$0.01	96.70	168.64	AEG-BEST
Warehouse, Controlled Atm.	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.20	15	\$0.35	13%	38%	\$0.14	679.58	873.72	7th Power Plan
Warehouse, Controlled Atm.	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.27	15	\$0.58	13%	38%	\$0.16	905.64	1,197.82	7th Power Plan
Warehouse, Controlled Atm.	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	Existing	563.39	15	\$54.41	1%	3%	\$0.01	14.88	22.53	7th Power Plan
Warehouse, Controlled Atm.	Interior Lighting	Interior Lighting - Timeclocks and Timers	occ sens	Existing	0.00	8	\$111.67	7%	15%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Warehouse, Controlled Atm.	Interior Lighting	Interior Lighting - Skylights	1000 sqft	Existing	0.00	15	\$1,006.35	15%	30%	\$0.00	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	1000 sqft	Existing	30.67	16	\$1,807.69	5%	15%	\$4.15	30.90	51.66	7th Power Plan
Warehouse, Controlled Atm.	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	Existing	321.82	11	\$30.80	15%	50%	\$0.01	122.32	182.18	Illinois TRM
Warehouse, Controlled Atm.	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	ELtg Watts	Existing	1.75	8	\$0.63	15%	25%	\$0.04	157.42	234.22	7th Power Plan
Warehouse, Controlled Atm.	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	Existing	72.95	8	\$55.10	15%	25%	\$0.09	79.65	121.99	Pacific Gas and Electric Research
Warehouse, Controlled Atm.	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	Existing	89.28	7	\$3,400.00	15%	30%	\$4.86	145.04	226.03	AEG Research
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Anti-Sweat Heater	Fridge Feet	Existing	570.76	8	\$48.18	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	Existing	15,113.75	4	\$10.44	0%	0%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	Existing	102,160.92	16	\$165.20	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	Existing	3,173.15	15	\$335.85	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Strip Curtain	Walkin Door	Existing	1,787.05	2	\$10.41	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBtuh	Existing	44.30	15	\$45.43	0%	0%	\$0.10	0.00	0.00	Annual Energy Outlook, 2015
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	Existing	1,056.56	15	\$313.82	0%	0%	\$0.03	0.00	0.00	Annual Energy Outlook, 2015

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Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	Existing	68,618.73	10	\$506.05	0%	0%	\$0.00	0.00	0.00	Vermont TRM
Warehouse, Controlled Atm.	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	Existing	301.19	6	\$45.41	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Warehouse, Controlled Atm.	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	Existing	27.85	8	\$3.72	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Warehouse, Controlled Atm.	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	Existing	6,465.08	5	\$45.85	0%	0%	\$0.00	0.00	0.00	Illinois TRM
Warehouse, Controlled Atm.	Refrigeration	Grocery - ECMs for Display Cases	Fridge Case	Existing	1,432.09	16	\$165.20	5%	25%	\$0.01	24.13	27.14	7th Power Plan
Warehouse, Controlled Atm.	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	Existing	1,080.13	5	\$187.94	25%	75%	\$0.03	1,056.46	1,226.12	Illinois TRM
Warehouse, Controlled Atm.	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	Existing	1,078.02	18	\$8,526.67	25%	50%	\$0.60	119.96	150.12	7th Power Plan
Warehouse, Controlled Atm.	Office Equipment	Office Equipment - Smart Power Strips	Smart Strip	Existing	6.45	4	\$41.63	10%	50%	\$1.59	73.03	62.46	7th Power Plan
Warehouse, Controlled Atm.	Cooling	Lodging - Guest Room Controls	LodgUnit	Existing	62.99	15	\$260.00	0%	0%	\$10.00	0.00	0.00	AEG-BEST
Warehouse, Controlled Atm.	Heating	Lodging - Guest Room Controls	LodgUnit	Existing	-170.02	15	\$260.00	0%	0%	\$10.00	0.00	0.00	AEG-BEST
Warehouse, Controlled Atm.	Office Equipment	Data Center - Best Practice Measures	sqft	Existing	0.01	5	\$0.00	0%	0%	\$0.02	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse, Controlled Atm.	Cooling	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.01	0%	0%	\$0.03	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse, Controlled Atm.	Ventilation	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.01	0%	0%	\$0.03	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse, Controlled Atm.	Interior Lighting	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.01	0%	0%	\$0.03	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse, Controlled Atm.	Office Equipment	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.01	0%	0%	\$0.03	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse, Controlled Atm.	Cooling	Data Center - Cutting Edge Measures	sqft	Existing	0.01	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse, Controlled Atm.	Office Equipment	Data Center - Cutting Edge Measures	sqft	Existing	0.00	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse, Controlled Atm.	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	Existing	2,920.00	18	\$4,092.80	0%	0%	\$0.11	0.00	0.00	7th Power Plan
Warehouse, Controlled Atm.	Miscellaneous	Pool Pump - Timer	perBldg	Existing	0.00	10	\$85.22	15%	75%	\$0.00	0.00	0.00	Ontario Power TRM

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Warehouse, Controlled Atm.	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	Existing	22,884.75	6	\$35.93	1%	3%	\$0.00	0.00	193.84	7th Power Plan
Warehouse, Controlled Atm.	Cooling	Advanced New Construction Designs	sqft	Existing	0.31	25	\$4.11	0%	0%	\$0.13	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Heating	Advanced New Construction Designs	sqft	Existing	1.47	25	\$4.11	0%	0%	\$0.13	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Ventilation	Advanced New Construction Designs	sqft	Existing	0.14	25	\$4.11	0%	0%	\$0.13	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Water Heating	Advanced New Construction Designs	sqft	Existing	0.06	25	\$4.11	0%	0%	\$0.13	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Interior Lighting	Advanced New Construction Designs	sqft	Existing	0.37	25	\$4.11	0%	0%	\$0.13	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Exterior Lighting	Advanced New Construction Designs	sqft	Existing	0.09	25	\$4.11	0%	0%	\$0.13	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Cooling	Strategic Energy Management	sqft	Existing	0.04	3	\$0.28	3%	11%	\$0.08	15.83	19.81	AEG Research
Warehouse, Controlled Atm.	Heating	Strategic Energy Management	sqft	Existing	0.22	3	\$0.28	3%	11%	\$0.08	26.40	29.02	AEG Research
Warehouse, Controlled Atm.	Ventilation	Strategic Energy Management	sqft	Existing	0.02	3	\$0.28	3%	11%	\$0.08	19.65	27.46	AEG Research
Warehouse, Controlled Atm.	Water Heating	Strategic Energy Management	sqft	Existing	0.01	3	\$0.28	3%	11%	\$0.08	5.03	9.54	AEG Research
Warehouse, Controlled Atm.	Interior Lighting	Strategic Energy Management	sqft	Existing	0.06	3	\$0.28	3%	11%	\$0.08	46.45	77.74	AEG Research
Warehouse, Controlled Atm.	Exterior Lighting	Strategic Energy Management	sqft	Existing	0.01	3	\$0.28	3%	11%	\$0.08	11.53	17.92	AEG Research
Warehouse, Controlled Atm.	Refrigeration	Strategic Energy Management	sqft	Existing	0.58	3	\$0.28	3%	11%	\$0.08	572.64	627.12	AEG Research
Warehouse, Controlled Atm.	Office Equipment	Strategic Energy Management	sqft	Existing	0.01	3	\$0.28	3%	11%	\$0.08	9.02	7.70	AEG Research
Warehouse, Controlled Atm.	Cooling	Commissioning	sqft	Existing	0.06	3	\$0.30	0%	0%	\$0.05	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Heating	Commissioning	sqft	Existing	0.31	3	\$0.30	0%	0%	\$0.05	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Ventilation	Commissioning	sqft	Existing	0.03	3	\$0.30	0%	0%	\$0.05	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Water Heating	Commissioning	sqft	Existing	0.00	3	\$0.30	0%	0%	\$0.05	0.00	0.00	AEG Research

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Warehouse, Controlled Atm.	Interior Lighting	Commissioning	sqft	Existing	0.07	3	\$0.30	0%	0%	\$0.05	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Exterior Lighting	Commissioning	sqft	Existing	0.02	3	\$0.30	0%	0%	\$0.05	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Refrigeration	Commissioning	sqft	Existing	1.34	3	\$0.30	0%	0%	\$0.05	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Cooling	Retrocommissioning	sqft	Existing	0.06	3	\$0.19	0%	0%	\$0.03	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Heating	Retrocommissioning	sqft	Existing	0.31	3	\$0.19	0%	0%	\$0.03	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Ventilation	Retrocommissioning	sqft	Existing	0.03	3	\$0.19	0%	0%	\$0.03	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Water Heating	Retrocommissioning	sqft	Existing	0.00	3	\$0.19	0%	0%	\$0.03	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Interior Lighting	Retrocommissioning	sqft	Existing	0.07	3	\$0.19	0%	0%	\$0.03	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Exterior Lighting	Retrocommissioning	sqft	Existing	0.02	3	\$0.19	0%	0%	\$0.03	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Refrigeration	Retrocommissioning	sqft	Existing	1.34	3	\$0.19	0%	0%	\$0.03	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Interior Lighting	Fruit Storage - Lighting Controls	sqft	Existing	0.05	10	\$0.09	25%	75%	\$0.17	239.66	395.99	Controlled Atmosphere Measure Inputs.xlsx
Warehouse, Controlled Atm.	Refrigeration	Fruit Storage Refrigeration Retrofit	sqft	Existing	5.12	10	\$1.09	22%	70%	\$0.03	32,440.76	30,412.33	Controlled Atmosphere Measure Inputs.xlsx
Warehouse, Controlled Atm.	Refrigeration	Fruit Storage Refrigeration Tuneup	sqft	Existing	1.12	3	\$0.23	15%	77%	\$0.06	8,557.15	9,078.49	Controlled Atmosphere Measure Inputs.xlsx
Warehouse, Controlled Atm.	Refrigeration	Fruit Storage Retrofit - CO2 Scrub	sqft	Existing	2.15	10	\$3.13	12%	25%	\$0.17	3,503.83	3,656.08	Controlled Atmosphere Measure Inputs.xlsx
Warehouse, Controlled Atm.	Refrigeration	Fruit Storage Retrofit - Membrane	sqft	Existing	0.42	10	\$0.68	2%	25%	\$0.19	1,213.41	1,281.79	Controlled Atmosphere Measure Inputs.xlsx
Warehouse, Controlled Atm.	Cooling	Insulation - Ceiling	sqft roof	New	0.00	45	\$1.28	15%	50%	\$0.24	0.00	0.00	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Heating	Insulation - Ceiling	sqft roof	New	0.39	45	\$1.28	15%	50%	\$0.24	49.42	49.36	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Ventilation	Insulation - Ceiling	sqft roof	New	0.02	45	\$1.28	15%	50%	\$0.24	31.75	35.18	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Cooling	Insulation - Ducting	sqft duct	New	0.04	20	\$0.84	15%	50%	\$1.01	18.23	18.62	Building Energy Simulation Tool

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Warehouse, Controlled Atm.	Heating	Insulation - Ducting	sqft duct	New	0.02	20	\$0.84	15%	50%	\$1.01	2.76	2.77	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Ventilation	Insulation - Ducting	sqft duct	New	0.00	20	\$0.84	15%	50%	\$1.01	1.75	1.97	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Cooling	Building Shell - Cool Roofs	sqft roof	New	0.09	20	\$0.78	45%	50%	\$10.00	5.49	5.62	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Heating	Building Shell - Cool Roofs	sqft roof	New	-0.25	20	\$0.78	45%	50%	\$10.00	-4.58	-4.60	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Ventilation	Building Shell - Cool Roofs	sqft roof	New	-0.01	20	\$0.78	45%	50%	\$10.00	-2.91	-3.26	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Cooling	Insulation - Wall Cavity	sqft wall	New	-0.01	45	\$0.78	15%	50%	\$0.14	-0.42	-0.42	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Heating	Insulation - Wall Cavity	sqft wall	New	0.40	45	\$0.78	15%	50%	\$0.14	9.60	9.61	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Ventilation	Insulation - Wall Cavity	sqft wall	New	0.02	45	\$0.78	15%	50%	\$0.14	6.08	6.73	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Cooling	HVAC - Duct Repair and Sealing	tonCool	New	8.61	18	\$0.57	15%	50%	\$0.00	7.00	7.14	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Heating	HVAC - Duct Repair and Sealing	tonCool	New	15.70	18	\$0.57	15%	50%	\$0.00	3.86	3.87	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Ventilation	HVAC - Duct Repair and Sealing	tonCool	New	0.85	18	\$0.57	15%	50%	\$0.00	2.45	2.72	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Cooling	Windows - High Efficiency Glazing	sqft window	New	1.90	30	\$35.93	66%	66%	\$0.12	0.00	0.00	7th Power Plan
Warehouse, Controlled Atm.	Heating	Windows - High Efficiency Glazing	sqft window	New	21.17	30	\$35.93	66%	66%	\$0.12	0.00	0.00	7th Power Plan
Warehouse, Controlled Atm.	Ventilation	Windows - High Efficiency Glazing	sqft window	New	0.67	30	\$35.93	66%	66%	\$0.12	0.00	0.00	7th Power Plan
Warehouse, Controlled Atm.	Cooling	Chiller - Chilled Water Reset	ChillCtrl	New	2,248.49	10	\$884.85	15%	75%	\$0.05	3.21	3.36	AEG-BEST
Warehouse, Controlled Atm.	Cooling	Chiller - Chilled Water Variable-Flow System	HP cool	New	89.44	15	\$332.55	15%	75%	\$0.34	22.70	23.65	AEG-BEST
Warehouse, Controlled Atm.	Cooling	Chiller - Variable Speed Fans	HP fan	New	328.55	15	\$208.36	15%	75%	\$0.06	8.33	8.68	New Jersey TRM
Warehouse, Controlled Atm.	Cooling	Water-Cooled Chiller - Condenser Water Reset	ChillCtrl	New	10,377.43	10	\$884.85	15%	75%	\$0.01	1.48	1.55	AEG-BEST
Warehouse, Controlled Atm.	Cooling	HVAC - Economizer	HP cool	New	48.35	10	\$168.42	18%	75%	\$0.40	20.85	21.97	AEG-BEST

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Warehouse, Controlled Atm.	Heating	Space Heating - Heat Recovery Ventilator	CFM	New	6.66	14	\$5.08	6%	75%	\$0.09	54.06	54.24	7th Power Plan
Warehouse, Controlled Atm.	Ventilation	Ventilation - ECM on VAV Boxes	sqft	New	0.06	18	\$0.25	15%	20%	\$0.22	11.72	13.08	7th Power Plan
Warehouse, Controlled Atm.	Ventilation	Ventilation - Variable Speed Control	sqft	New	0.01	15	\$181.39	19%	50%	\$1,473.48	4.79	5.83	AEG-BEST
Warehouse, Controlled Atm.	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.25	15%	75%	\$4.16	4.53	5.51	7th Power Plan
Warehouse, Controlled Atm.	Cooling	Destratification Fans (HVLS)	Strat Fan	New	1,058.07	15	\$7,270.90	15%	15%	\$0.06	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Heating	Destratification Fans (HVLS)	Strat Fan	New	10,949.59	15	\$7,270.90	15%	15%	\$0.06	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Cooling	RTU - Maintenance	tonCool	New	25.49	3	\$35.00	15%	45%	\$0.38	0.84	0.93	AEG Research
Warehouse, Controlled Atm.	Cooling	RTU - Advanced Controls	sqft	New	0.04	15	\$0.07	15%	45%	\$0.15	6.80	6.98	7th Power Plan
Warehouse, Controlled Atm.	Cooling	RTU - Evaporative Precooler	tonCool	New	51.69	15	\$681.62	15%	75%	\$1.19	41.16	41.81	AEG Research
Warehouse, Controlled Atm.	Cooling	Ductless Mini Split Heat Pump	tonCool	New	111.11	15	\$3,359.26	15%	25%	\$0.50	0.57	0.59	7th Power Plan
Warehouse, Controlled Atm.	Heating	Ductless Mini Split Heat Pump	tonCool	New	575.35	15	\$3,359.26	15%	25%	\$0.50	21.35	21.59	7th Power Plan
Warehouse, Controlled Atm.	Cooling	Thermostat - WiFi/Interactive	sqft	New	0.15	5	\$0.66	30%	40%	\$0.13	2.30	2.48	7th Power Plan
Warehouse, Controlled Atm.	Heating	Thermostat - WiFi/Interactive	sqft	New	0.84	5	\$0.66	30%	40%	\$0.13	3.81	3.90	7th Power Plan
Warehouse, Controlled Atm.	Ventilation	Thermostat - WiFi/Interactive	sqft	New	0.05	5	\$0.66	30%	40%	\$0.13	2.43	3.07	7th Power Plan
Warehouse, Controlled Atm.	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	New	46.34	10	\$8.35	25%	65%	\$0.01	2.02	2.89	Illinois TRM
Warehouse, Controlled Atm.	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	New	48.35	10	\$11.64	25%	65%	-\$0.13	1.05	1.51	7th Power Plan
Warehouse, Controlled Atm.	Water Heating	Water Heater - High Efficiency Circulation Pump	WHUnits	New	40.60	15	\$36.75	15%	75%	\$0.04	6.23	7.33	Hawaii TRM
Warehouse, Controlled Atm.	Water Heating	Water Heater - Pipe Insulation	PipeFeet	New	183.25	15	\$14.88	1%	75%	\$0.00	9.72	13.09	AEG-BEST
Warehouse, Controlled Atm.	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	New	32.13	4	\$144.04	25%	65%	-\$0.43	0.65	1.00	7th Power Plan

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Warehouse, Controlled Atm.	Water Heating	Water Heater - Thermostat Setback	WHunits	New	40.46	2	\$5.00	15%	75%	\$0.02	0.33	0.55	Illinois TRM
Warehouse, Controlled Atm.	Water Heating	Water Heater - Solar System	PipeFeet	New	638.40	20	\$215.28	1%	30%	\$0.01	13.72	18.33	AEG-BEST
Warehouse, Controlled Atm.	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.14	15	\$0.35	13%	38%	\$0.14	286.24	329.78	7th Power Plan
Warehouse, Controlled Atm.	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.19	15	\$0.58	13%	38%	\$0.17	384.67	446.52	7th Power Plan
Warehouse, Controlled Atm.	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	New	394.71	15	\$54.41	1%	3%	\$0.01	1.46	1.81	7th Power Plan
Warehouse, Controlled Atm.	Interior Lighting	Interior Lighting - Timeclocks and Timers	occ sens	New	0.00	8	\$111.67	7%	15%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Warehouse, Controlled Atm.	Interior Lighting	Interior Lighting - Skylights	1000 sqft	New	0.00	15	\$1,006.35	18%	33%	\$0.00	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	1000 sqft	New	20.84	16	\$1,807.69	5%	15%	\$4.22	4.04	5.02	7th Power Plan
Warehouse, Controlled Atm.	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	New	226.89	11	\$30.80	15%	50%	\$0.01	12.54	15.58	Illinois TRM
Warehouse, Controlled Atm.	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	ELtg Watts	New	1.28	8	\$0.63	15%	25%	\$0.05	12.11	15.97	7th Power Plan
Warehouse, Controlled Atm.	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	New	54.74	8	\$55.10	15%	25%	\$0.09	6.39	8.38	Pacific Gas and Electric Research
Warehouse, Controlled Atm.	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	New	67.66	7	\$3,400.00	15%	30%	\$5.12	10.35	13.79	AEG Research
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Anti-Sweat Heater	Fridge Feet	New	402.55	8	\$48.18	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	New	14,572.10	4	\$10.44	0%	0%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	New	97,675.11	16	\$165.20	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	New	3,088.89	15	\$335.85	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Strip Curtain	Walkin Door	New	1,710.97	2	\$10.41	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBtuh	New	47.21	15	\$45.43	0%	0%	\$0.10	0.00	0.00	Annual Energy Outlook, 2015
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	New	1,028.50	15	\$313.82	0%	0%	\$0.03	0.00	0.00	Annual Energy Outlook, 2015

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Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	New	65,605.74	10	\$506.05	0%	0%	\$0.00	0.00	0.00	Vermont TRM
Warehouse, Controlled Atm.	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	New	296.82	6	\$45.41	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Warehouse, Controlled Atm.	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	New	25.12	8	\$3.72	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Warehouse, Controlled Atm.	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	New	6,009.56	5	\$45.85	0%	0%	\$0.00	0.00	0.00	Illinois TRM
Warehouse, Controlled Atm.	Refrigeration	Grocery - ECMs for Display Cases	Fridge Case	New	1,291.69	16	\$165.20	5%	25%	\$0.01	3.05	3.08	7th Power Plan
Warehouse, Controlled Atm.	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	New	1,153.87	5	\$187.94	25%	75%	\$0.03	60.82	60.71	Illinois TRM
Warehouse, Controlled Atm.	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	New	608.48	18	\$8,526.67	25%	50%	\$0.70	24.97	27.98	7th Power Plan
Warehouse, Controlled Atm.	Office Equipment	Office Equipment - Smart Power Strips	Smart Strip	New	6.07	4	\$41.63	10%	50%	\$1.68	2.59	2.20	7th Power Plan
Warehouse, Controlled Atm.	Cooling	Lodging - Guest Room Controls	LodgUnit	New	52.83	15	\$260.00	0%	0%	\$10.00	0.00	0.00	AEG-BEST
Warehouse, Controlled Atm.	Heating	Lodging - Guest Room Controls	LodgUnit	New	-167.30	15	\$260.00	0%	0%	\$10.00	0.00	0.00	AEG-BEST
Warehouse, Controlled Atm.	Office Equipment	Data Center - Best Practice Measures	sqft	New	0.01	5	\$0.00	0%	0%	\$0.02	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse, Controlled Atm.	Cooling	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.01	0%	0%	\$0.03	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse, Controlled Atm.	Ventilation	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.01	0%	0%	\$0.03	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse, Controlled Atm.	Interior Lighting	Data Center - Commercially Available Measures	sqft	New	0.01	8	\$0.01	0%	0%	\$0.03	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse, Controlled Atm.	Office Equipment	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.01	0%	0%	\$0.03	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse, Controlled Atm.	Cooling	Data Center - Cutting Edge Measures	sqft	New	0.01	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse, Controlled Atm.	Office Equipment	Data Center - Cutting Edge Measures	sqft	New	0.00	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse, Controlled Atm.	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	New	1,651.46	18	\$4,092.80	0%	0%	\$0.13	0.00	0.00	7th Power Plan
Warehouse, Controlled Atm.	Miscellaneous	Pool Pump - Timer	perBldg	New	0.00	10	\$85.22	15%	75%	\$0.00	0.00	0.00	Ontario Power TRM

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Warehouse, Controlled Atm.	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	New	22,940.09	6	\$35.93	1%	3%	\$0.00	0.00	10.48	7th Power Plan
Warehouse, Controlled Atm.	Cooling	Advanced New Construction Designs	sqft	New	0.27	25	\$4.11	10%	15%	\$0.14	18.35	18.66	AEG Research
Warehouse, Controlled Atm.	Heating	Advanced New Construction Designs	sqft	New	1.43	25	\$4.11	10%	15%	\$0.14	29.77	29.83	AEG Research
Warehouse, Controlled Atm.	Ventilation	Advanced New Construction Designs	sqft	New	0.08	25	\$4.11	10%	15%	\$0.14	19.03	21.36	AEG Research
Warehouse, Controlled Atm.	Water Heating	Advanced New Construction Designs	sqft	New	0.04	25	\$4.11	10%	15%	\$0.14	6.45	7.40	AEG Research
Warehouse, Controlled Atm.	Interior Lighting	Advanced New Construction Designs	sqft	New	0.25	25	\$4.11	10%	15%	\$0.14	49.12	53.85	AEG Research
Warehouse, Controlled Atm.	Exterior Lighting	Advanced New Construction Designs	sqft	New	0.07	25	\$4.11	10%	15%	\$0.14	12.13	13.34	AEG Research
Warehouse, Controlled Atm.	Cooling	Strategic Energy Management	sqft	New	0.04	3	\$0.25	3%	11%	\$0.08	0.38	0.42	AEG Research
Warehouse, Controlled Atm.	Heating	Strategic Energy Management	sqft	New	0.22	3	\$0.25	3%	11%	\$0.08	0.64	0.66	AEG Research
Warehouse, Controlled Atm.	Ventilation	Strategic Energy Management	sqft	New	0.01	3	\$0.25	3%	11%	\$0.08	0.41	0.53	AEG Research
Warehouse, Controlled Atm.	Water Heating	Strategic Energy Management	sqft	New	0.01	3	\$0.25	3%	11%	\$0.08	0.14	0.22	AEG Research
Warehouse, Controlled Atm.	Interior Lighting	Strategic Energy Management	sqft	New	0.04	3	\$0.25	3%	11%	\$0.08	1.06	1.55	AEG Research
Warehouse, Controlled Atm.	Exterior Lighting	Strategic Energy Management	sqft	New	0.01	3	\$0.25	3%	11%	\$0.08	0.26	0.38	AEG Research
Warehouse, Controlled Atm.	Refrigeration	Strategic Energy Management	sqft	New	0.64	3	\$0.25	3%	11%	\$0.08	16.70	13.88	AEG Research
Warehouse, Controlled Atm.	Office Equipment	Strategic Energy Management	sqft	New	0.01	3	\$0.25	3%	11%	\$0.08	0.20	0.17	AEG Research
Warehouse, Controlled Atm.	Cooling	Commissioning	sqft	New	0.06	3	\$0.27	0%	0%	\$0.04	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Heating	Commissioning	sqft	New	0.30	3	\$0.27	0%	0%	\$0.04	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Ventilation	Commissioning	sqft	New	0.02	3	\$0.27	0%	0%	\$0.04	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Water Heating	Commissioning	sqft	New	0.00	3	\$0.27	0%	0%	\$0.04	0.00	0.00	AEG Research

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Warehouse, Controlled Atm.	Interior Lighting	Commissioning	sqft	New	0.05	3	\$0.27	0%	0%	\$0.04	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Exterior Lighting	Commissioning	sqft	New	0.01	3	\$0.27	0%	0%	\$0.04	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Refrigeration	Commissioning	sqft	New	1.48	3	\$0.27	0%	0%	\$0.04	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Cooling	Retrocommissioning	sqft	New	0.06	3	\$0.17	0%	0%	\$0.03	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Heating	Retrocommissioning	sqft	New	0.30	3	\$0.17	0%	0%	\$0.03	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Ventilation	Retrocommissioning	sqft	New	0.02	3	\$0.17	0%	0%	\$0.03	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Water Heating	Retrocommissioning	sqft	New	0.00	3	\$0.17	0%	0%	\$0.03	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Interior Lighting	Retrocommissioning	sqft	New	0.05	3	\$0.17	0%	0%	\$0.03	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Exterior Lighting	Retrocommissioning	sqft	New	0.01	3	\$0.17	0%	0%	\$0.03	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Refrigeration	Retrocommissioning	sqft	New	1.48	3	\$0.17	0%	0%	\$0.03	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Interior Lighting	Fruit Storage - Lighting Controls	sqft	New	0.03	10	\$0.09	25%	75%	\$0.17	23.42	30.30	Controlled Atmosphere Measure Inputs.xlsx
Warehouse, Controlled Atm.	Refrigeration	Fruit Storage Refrigeration Retrofit	sqft	New	4.88	10	\$1.09	22%	70%	\$0.03	3,253.77	2,932.17	Controlled Atmosphere Measure Inputs.xlsx
Warehouse, Controlled Atm.	Refrigeration	Fruit Storage Refrigeration Tuneup	sqft	New	1.19	3	\$0.23	15%	77%	\$0.06	236.71	197.91	Controlled Atmosphere Measure Inputs.xlsx
Warehouse, Controlled Atm.	Refrigeration	Fruit Storage Retrofit - CO2 Scrub	sqft	New	2.25	10	\$3.13	12%	25%	\$0.18	409.61	363.44	Controlled Atmosphere Measure Inputs.xlsx
Warehouse, Controlled Atm.	Refrigeration	Fruit Storage Retrofit - Membrane	sqft	New	0.45	10	\$0.68	2%	25%	\$0.19	144.35	127.85	Controlled Atmosphere Measure Inputs.xlsx
Data Center	Cooling	Insulation - Ceiling	sqft roof	Existing	2.47	45	\$1.28	15%	35%	\$0.02	2.99	3.21	Building Energy Simulation Tool
Data Center	Heating	Insulation - Ceiling	sqft roof	Existing	0.23	45	\$1.28	15%	35%	\$0.02	0.14	0.14	Building Energy Simulation Tool
Data Center	Ventilation	Insulation - Ceiling	sqft roof	Existing	1.41	45	\$1.28	15%	35%	\$0.02	1.73	2.17	Building Energy Simulation Tool
Data Center	Cooling	Insulation - Ducting	sqft duct	Existing	0.89	20	\$0.84	15%	35%	\$0.07	1.05	1.18	Building Energy Simulation Tool

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Data Center	Heating	Insulation - Ducting	sqft duct	Existing	0.01	20	\$0.84	15%	35%	\$0.07	0.01	0.01	Building Energy Simulation Tool
Data Center	Ventilation	Insulation - Ducting	sqft duct	Existing	0.06	20	\$0.84	15%	35%	\$0.07	0.07	0.09	Building Energy Simulation Tool
Data Center	Cooling	Building Shell - Cool Roofs	sqft roof	Existing	3.38	20	\$0.78	45%	50%	\$0.03	1.04	1.09	Building Energy Simulation Tool
Data Center	Heating	Building Shell - Cool Roofs	sqft roof	Existing	-0.16	20	\$0.78	45%	50%	\$0.03	-0.02	-0.02	Building Energy Simulation Tool
Data Center	Ventilation	Building Shell - Cool Roofs	sqft roof	Existing	-0.96	20	\$0.78	45%	50%	\$0.03	-0.30	-0.37	Building Energy Simulation Tool
Data Center	Cooling	Insulation - Wall Cavity	sqft wall	Existing	0.20	45	\$0.78	15%	35%	\$0.00	0.05	0.05	Building Energy Simulation Tool
Data Center	Heating	Insulation - Wall Cavity	sqft wall	Existing	1.65	45	\$0.78	15%	35%	\$0.00	0.19	0.19	Building Energy Simulation Tool
Data Center	Ventilation	Insulation - Wall Cavity	sqft wall	Existing	10.16	45	\$0.78	15%	35%	\$0.00	2.43	2.96	Building Energy Simulation Tool
Data Center	Cooling	HVAC - Duct Repair and Sealing	tonCool	Existing	31.55	18	\$0.57	15%	50%	\$0.00	0.67	0.72	Building Energy Simulation Tool
Data Center	Heating	HVAC - Duct Repair and Sealing	tonCool	Existing	2.22	18	\$0.57	15%	50%	\$0.00	0.02	0.02	Building Energy Simulation Tool
Data Center	Ventilation	HVAC - Duct Repair and Sealing	tonCool	Existing	13.60	18	\$0.57	15%	50%	\$0.00	0.30	0.37	Building Energy Simulation Tool
Data Center	Cooling	Windows - High Efficiency Glazing	sqft window	Existing	64.44	30	\$35.93	48%	48%	\$0.02	0.00	0.00	7th Power Plan
Data Center	Heating	Windows - High Efficiency Glazing	sqft window	Existing	12.72	30	\$35.93	48%	48%	\$0.02	0.00	0.00	7th Power Plan
Data Center	Ventilation	Windows - High Efficiency Glazing	sqft window	Existing	44.36	30	\$35.93	48%	48%	\$0.02	0.00	0.00	7th Power Plan
Data Center	Cooling	Chiller - Chilled Water Reset	ChillCtrl	Existing	17,850.17	10	\$884.85	15%	75%	\$0.01	0.93	1.03	AEG-BEST
Data Center	Cooling	Chiller - Chilled Water Variable-Flow System	HP cool	Existing	704.08	15	\$332.55	15%	75%	\$0.05	5.04	5.67	AEG-BEST
Data Center	Cooling	Chiller - Variable Speed Fans	HP fan	Existing	2,616.07	15	\$208.36	15%	75%	\$0.01	1.89	2.09	New Jersey TRM
Data Center	Cooling	Water-Cooled Chiller - Condenser Water Reset	ChillCtrl	Existing	84,987.97	10	\$884.85	15%	75%	\$0.00	1.68	1.85	AEG-BEST
Data Center	Cooling	HVAC - Economizer	HP cool	Existing	335.70	10	\$168.42	18%	75%	\$0.06	9.10	10.34	AEG-BEST

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Data Center	Heating	Space Heating - Heat Recovery Ventilator	CFM	Existing	0.07	14	\$5.08	3%	75%	\$7.16	0.51	0.56	7th Power Plan
Data Center	Ventilation	Ventilation - ECM on VAV Boxes	sqft	Existing	3.87	18	\$0.25	15%	20%	\$0.00	1.21	1.49	7th Power Plan
Data Center	Ventilation	Ventilation - Variable Speed Control	sqft	Existing	0.43	15	\$181.39	13%	50%	\$33.04	1.02	1.46	AEG-BEST
Data Center	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.22	15	\$0.25	15%	75%	\$0.09	0.86	1.18	7th Power Plan
Data Center	Cooling	Destratification Fans (HVLS)	Strat Fan	Existing	35,730.12	15	\$7,270.90	15%	15%	\$0.02	0.00	0.00	AEG Research
Data Center	Heating	Destratification Fans (HVLS)	Strat Fan	Existing	6,527.44	15	\$7,270.90	15%	15%	\$0.02	0.00	0.00	AEG Research
Data Center	Cooling	RTU - Maintenance	tonCool	Existing	154.98	3	\$35.00	15%	45%	\$0.06	1.44	1.78	AEG Research
Data Center	Cooling	RTU - Advanced Controls	sqft	Existing	1.31	15	\$0.07	15%	45%	\$0.01	1.19	1.26	7th Power Plan
Data Center	Cooling	RTU - Evaporative Precooler	tonCool	Existing	314.48	15	\$681.62	15%	75%	\$0.20	5.28	5.78	AEG Research
Data Center	Cooling	Ductless Mini Split Heat Pump	tonCool	Existing	757.20	15	\$3,359.26	15%	25%	\$0.37	0.12	0.14	7th Power Plan
Data Center	Heating	Ductless Mini Split Heat Pump	tonCool	Existing	75.13	15	\$3,359.26	15%	25%	\$0.37	0.11	0.12	7th Power Plan
Data Center	Cooling	Thermostat - WiFi/Interactive	sqft	Existing	5.11	5	\$0.66	30%	40%	\$0.01	3.03	3.37	7th Power Plan
Data Center	Heating	Thermostat - WiFi/Interactive	sqft	Existing	0.51	5	\$0.66	30%	40%	\$0.01	0.15	0.16	7th Power Plan
Data Center	Ventilation	Thermostat - WiFi/Interactive	sqft	Existing	3.08	5	\$0.66	30%	40%	\$0.01	1.87	2.38	7th Power Plan
Data Center	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	Existing	112.95	10	\$8.35	25%	65%	\$0.01	0.01	0.03	Illinois TRM
Data Center	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	Existing	116.94	10	\$11.64	25%	65%	-\$0.08	0.01	0.01	7th Power Plan
Data Center	Water Heating	Water Heater - High Efficiency Circulation Pump	WHUnits	Existing	57.50	15	\$36.75	15%	75%	\$0.04	0.02	0.03	Hawaii TRM
Data Center	Water Heating	Water Heater - Pipe Insulation	PipeFeet	Existing	463.52	15	\$14.88	16%	75%	\$0.00	0.04	0.06	AEG-BEST
Data Center	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	Existing	76.60	4	\$144.04	25%	65%	-\$0.27	0.01	0.02	7th Power Plan
Data Center	Water Heating	Water Heater - Thermostat Setback	WHUnits	Existing	57.12	2	\$5.00	15%	75%	\$0.02	0.02	0.03	Illinois TRM
Data Center	Water Heating	Water Heater - Solar System	PipeFeet	Existing	1,595.92	20	\$215.28	1%	30%	\$0.01	0.06	0.11	AEG-BEST

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Data Center	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.67	15	\$0.35	3%	23%	\$0.04	0.97	1.25	7th Power Plan
Data Center	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.92	15	\$0.58	3%	23%	\$0.05	1.31	1.72	7th Power Plan
Data Center	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	Existing	1,999.90	15	\$54.41	1%	3%	\$0.00	0.03	0.04	7th Power Plan
Data Center	Interior Lighting	Interior Lighting - Timeclocks and Timers	occ sens	Existing	0.00	8	\$111.67	7%	15%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Data Center	Interior Lighting	Interior Lighting - Skylights	1000 sqft	Existing	0.00	15	\$1,006.35	15%	25%	\$0.00	0.00	0.00	AEG Research
Data Center	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	1000 sqft	Existing	441.33	16	\$1,807.69	5%	15%	\$0.30	0.25	0.40	7th Power Plan
Data Center	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	Existing	4,604.25	11	\$30.80	15%	50%	\$0.00	0.96	1.41	Illinois TRM
Data Center	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	ELtg Watts	Existing	1.91	8	\$0.63	15%	25%	\$0.04	0.26	0.39	7th Power Plan
Data Center	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	Existing	66.85	8	\$55.10	15%	25%	\$0.10	0.13	0.21	Pacific Gas and Electric Research
Data Center	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	Existing	80.01	7	\$3,400.00	15%	30%	\$5.28	0.23	0.38	AEG Research
Data Center	Refrigeration	Refrigeration - Anti-Sweat Heater	Fridge Feet	Existing	19.37	8	\$48.18	0%	0%	\$0.39	0.00	0.00	7th Power Plan
Data Center	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	Existing	42.59	4	\$10.44	0%	0%	\$0.06	0.00	0.00	Michigan Energy Measures Database
Data Center	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	Existing	298.99	16	\$165.20	0%	0%	\$0.06	0.00	0.00	7th Power Plan
Data Center	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	Existing	27.32	15	\$335.85	0%	0%	\$1.32	0.00	0.00	7th Power Plan
Data Center	Refrigeration	Refrigeration - Strip Curtain	WalkIn Door	Existing	35.06	2	\$10.41	0%	0%	\$0.14	0.00	0.00	7th Power Plan
Data Center	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	Existing	0.41	15	\$45.43	0%	0%	\$11.10	0.00	0.00	Annual Energy Outlook, 2015
Data Center	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	Existing	9.10	15	\$313.82	0%	0%	\$3.70	0.00	0.00	Annual Energy Outlook, 2015
Data Center	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	Existing	198.97	10	\$506.05	0%	0%	\$0.34	0.00	0.00	Vermont TRM
Data Center	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	Existing	12.00	6	\$45.41	0%	0%	\$0.72	0.00	0.00	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Data Center	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	Existing	0.97	8	\$3.72	0%	0%	\$0.60	0.00	0.00	7th Power Plan
Data Center	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	Existing	225.16	5	\$45.85	0%	0%	\$0.04	0.00	0.00	Illinois TRM
Data Center	Refrigeration	Grocery - ECMs for Display Cases	Fridge Case	Existing	49.72	16	\$165.20	0%	0%	\$0.34	0.00	0.00	7th Power Plan
Data Center	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	Existing	1,228.81	5	\$187.94	25%	75%	\$0.03	0.00	0.00	Illinois TRM
Data Center	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	Existing	41,239.21	18	\$8,526.67	25%	50%	\$0.02	2.58	3.19	7th Power Plan
Data Center	Office Equipment	Office Equipment - Smart Power Strips	Smart Strip	Existing	3,167.02	4	\$41.63	10%	50%	\$0.00	21.16	16.19	7th Power Plan
Data Center	Cooling	Lodging - Guest Room Controls	LodgUnit	Existing	2,079.76	15	\$260.00	0%	0%	\$0.01	0.00	0.00	AEG-BEST
Data Center	Heating	Lodging - Guest Room Controls	LodgUnit	Existing	-113.93	15	\$260.00	0%	0%	\$0.01	0.00	0.00	AEG-BEST
Data Center	Office Equipment	Data Center - Best Practice Measures	sqft	Existing	12.95	5	\$0.98	20%	75%	\$0.02	61.13	62.84	com-datacenters-7p_v5p.xlsx
Data Center	Cooling	Data Center - Commercially Available Measures	sqft	Existing	0.08	8	\$0.74	10%	35%	\$0.03	0.12	0.14	com-datacenters-7p_v5p.xlsx
Data Center	Ventilation	Data Center - Commercially Available Measures	sqft	Existing	0.05	8	\$0.74	10%	35%	\$0.03	0.07	0.10	com-datacenters-7p_v5p.xlsx
Data Center	Interior Lighting	Data Center - Commercially Available Measures	sqft	Existing	0.05	8	\$0.74	10%	35%	\$0.03	0.07	0.11	com-datacenters-7p_v5p.xlsx
Data Center	Office Equipment	Data Center - Commercially Available Measures	sqft	Existing	2.84	8	\$0.74	10%	35%	\$0.03	5.99	6.44	com-datacenters-7p_v5p.xlsx
Data Center	Cooling	Data Center - Cutting Edge Measures	sqft	Existing	0.39	6	\$0.04	10%	15%	\$0.00	0.12	0.14	com-datacenters-7p_v5p.xlsx
Data Center	Office Equipment	Data Center - Cutting Edge Measures	sqft	Existing	1.04	6	\$0.04	10%	15%	\$0.00	0.45	0.46	com-datacenters-7p_v5p.xlsx
Data Center	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	Existing	112,148.24	18	\$4,092.80	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Data Center	Miscellaneous	Pool Pump - Timer	perBldg	Existing	0.00	10	\$85.22	15%	75%	\$0.00	0.00	0.00	Ontario Power TRM
Data Center	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	Existing	249,229.58	6	\$35.93	1%	3%	\$0.00	0.00	1.18	7th Power Plan
Data Center	Cooling	Advanced New Construction Designs	sqft	Existing	8.95	25	\$4.11	0%	0%	\$0.02	0.00	0.00	AEG Research

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Data Center	Heating	Advanced New Construction Designs	sqft	Existing	0.86	25	\$4.11	0%	0%	\$0.02	0.00	0.00	AEG Research
Data Center	Ventilation	Advanced New Construction Designs	sqft	Existing	5.21	25	\$4.11	0%	0%	\$0.02	0.00	0.00	AEG Research
Data Center	Water Heating	Advanced New Construction Designs	sqft	Existing	0.10	25	\$4.11	0%	0%	\$0.02	0.00	0.00	AEG Research
Data Center	Interior Lighting	Advanced New Construction Designs	sqft	Existing	1.37	25	\$4.11	0%	0%	\$0.02	0.00	0.00	AEG Research
Data Center	Exterior Lighting	Advanced New Construction Designs	sqft	Existing	0.28	25	\$4.11	0%	0%	\$0.02	0.00	0.00	AEG Research
Data Center	Cooling	Strategic Energy Management	sqft	Existing	1.29	3	\$1.54	0%	0%	\$0.07	0.00	0.00	AEG Research
Data Center	Heating	Strategic Energy Management	sqft	Existing	0.13	3	\$1.54	0%	0%	\$0.07	0.00	0.00	AEG Research
Data Center	Ventilation	Strategic Energy Management	sqft	Existing	0.79	3	\$1.54	0%	0%	\$0.07	0.00	0.00	AEG Research
Data Center	Water Heating	Strategic Energy Management	sqft	Existing	0.02	3	\$1.54	0%	0%	\$0.07	0.00	0.00	AEG Research
Data Center	Interior Lighting	Strategic Energy Management	sqft	Existing	0.21	3	\$1.54	0%	0%	\$0.07	0.00	0.00	AEG Research
Data Center	Exterior Lighting	Strategic Energy Management	sqft	Existing	0.04	3	\$1.54	0%	0%	\$0.07	0.00	0.00	AEG Research
Data Center	Refrigeration	Strategic Energy Management	sqft	Existing	0.00	3	\$1.54	0%	0%	\$0.07	0.00	0.00	AEG Research
Data Center	Office Equipment	Strategic Energy Management	sqft	Existing	3.47	3	\$1.54	0%	0%	\$0.07	0.00	0.00	AEG Research
Data Center	Cooling	Commissioning	sqft	Existing	1.73	3	\$2.22	0%	0%	\$0.18	0.00	0.00	AEG Research
Data Center	Heating	Commissioning	sqft	Existing	0.18	3	\$2.22	0%	0%	\$0.18	0.00	0.00	AEG Research
Data Center	Ventilation	Commissioning	sqft	Existing	1.07	3	\$2.22	0%	0%	\$0.18	0.00	0.00	AEG Research
Data Center	Water Heating	Commissioning	sqft	Existing	0.01	3	\$2.22	0%	0%	\$0.18	0.00	0.00	AEG Research
Data Center	Interior Lighting	Commissioning	sqft	Existing	0.24	3	\$2.22	0%	0%	\$0.18	0.00	0.00	AEG Research
Data Center	Exterior Lighting	Commissioning	sqft	Existing	0.05	3	\$2.22	0%	0%	\$0.18	0.00	0.00	AEG Research
Data Center	Refrigeration	Commissioning	sqft	Existing	0.00	3	\$2.22	0%	0%	\$0.18	0.00	0.00	AEG Research
Data Center	Cooling	Retrocommissioning	sqft	Existing	1.78	3	\$1.41	2%	65%	\$0.11	7.01	8.62	AEG Research
Data Center	Heating	Retrocommissioning	sqft	Existing	0.18	3	\$1.41	2%	65%	\$0.11	0.37	0.39	AEG Research

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Data Center	Ventilation	Retrocommissioning	sqft	Existing	1.10	3	\$1.41	2%	65%	\$0.11	4.53	6.32	AEG Research
Data Center	Water Heating	Retrocommissioning	sqft	Existing	0.01	3	\$1.41	2%	65%	\$0.11	0.01	0.02	AEG Research
Data Center	Interior Lighting	Retrocommissioning	sqft	Existing	0.24	3	\$1.41	2%	65%	\$0.11	0.86	1.39	AEG Research
Data Center	Exterior Lighting	Retrocommissioning	sqft	Existing	0.05	3	\$1.41	2%	65%	\$0.11	0.17	0.27	AEG Research
Data Center	Refrigeration	Retrocommissioning	sqft	Existing	0.00	3	\$1.41	2%	65%	\$0.11	0.02	0.01	AEG Research
Data Center	Interior Lighting	Fruit Storage - Lighting Controls	sqft	Existing	0.17	10	\$0.09	0%	0%	\$0.05	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Data Center	Refrigeration	Fruit Storage Refrigeration Retrofit	sqft	Existing	0.01	10	\$1.09	0%	0%	\$16.33	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Data Center	Refrigeration	Fruit Storage Refrigeration Tuneup	sqft	Existing	0.00	3	\$0.23	0%	0%	\$33.48	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Data Center	Refrigeration	Fruit Storage Retrofit - CO2 Scrub	sqft	Existing	0.00	10	\$3.13	0%	0%	\$96.83	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Data Center	Refrigeration	Fruit Storage Retrofit - Membrane	sqft	Existing	0.00	10	\$0.68	0%	0%	\$105.08	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Data Center	Cooling	Insulation - Ceiling	sqft roof	New	0.00	45	\$1.28	15%	50%	\$0.06	0.00	0.00	Building Energy Simulation Tool
Data Center	Heating	Insulation - Ceiling	sqft roof	New	0.20	45	\$1.28	15%	50%	\$0.06	0.06	0.06	Building Energy Simulation Tool
Data Center	Ventilation	Insulation - Ceiling	sqft roof	New	0.87	45	\$1.28	15%	50%	\$0.06	0.69	0.76	Building Energy Simulation Tool
Data Center	Cooling	Insulation - Ducting	sqft duct	New	1.28	20	\$0.84	15%	50%	\$0.05	0.74	0.76	Building Energy Simulation Tool
Data Center	Heating	Insulation - Ducting	sqft duct	New	0.01	20	\$0.84	15%	50%	\$0.05	0.00	0.00	Building Energy Simulation Tool
Data Center	Ventilation	Insulation - Ducting	sqft duct	New	0.05	20	\$0.84	15%	50%	\$0.05	0.04	0.04	Building Energy Simulation Tool
Data Center	Cooling	Building Shell - Cool Roofs	sqft roof	New	2.82	20	\$0.78	45%	50%	\$0.04	0.23	0.24	Building Energy Simulation Tool
Data Center	Heating	Building Shell - Cool Roofs	sqft roof	New	-0.14	20	\$0.78	45%	50%	\$0.04	-0.01	-0.01	Building Energy Simulation Tool
Data Center	Ventilation	Building Shell - Cool Roofs	sqft roof	New	-0.58	20	\$0.78	45%	50%	\$0.04	-0.07	-0.07	Building Energy Simulation Tool
Data Center	Cooling	Insulation - Wall Cavity	sqft wall	New	-0.15	45	\$0.78	15%	50%	\$0.04	-0.02	-0.02	Building Energy Simulation Tool

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Data Center	Heating	Insulation - Wall Cavity	sqft wall	New	0.21	45	\$0.78	15%	50%	\$0.04	0.01	0.01	Building Energy Simulation Tool
Data Center	Ventilation	Insulation - Wall Cavity	sqft wall	New	0.88	45	\$0.78	15%	50%	\$0.04	0.13	0.15	Building Energy Simulation Tool
Data Center	Cooling	HVAC - Duct Repair and Sealing	tonCool	New	49.69	18	\$0.57	15%	35%	\$0.00	0.16	0.16	Building Energy Simulation Tool
Data Center	Heating	HVAC - Duct Repair and Sealing	tonCool	New	1.62	18	\$0.57	15%	35%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Data Center	Ventilation	HVAC - Duct Repair and Sealing	tonCool	New	6.96	18	\$0.57	15%	35%	\$0.00	0.03	0.03	Building Energy Simulation Tool
Data Center	Cooling	Windows - High Efficiency Glazing	sqft window	New	55.03	30	\$35.93	66%	66%	\$0.02	0.00	0.00	7th Power Plan
Data Center	Heating	Windows - High Efficiency Glazing	sqft window	New	11.14	30	\$35.93	66%	66%	\$0.02	0.00	0.00	7th Power Plan
Data Center	Ventilation	Windows - High Efficiency Glazing	sqft window	New	27.29	30	\$35.93	66%	66%	\$0.02	0.00	0.00	7th Power Plan
Data Center	Cooling	Chiller - Chilled Water Reset	ChillCtrl	New	14,157.65	10	\$884.85	15%	75%	\$0.01	0.08	0.08	AEG-BEST
Data Center	Cooling	Chiller - Chilled Water Variable-Flow System	HP cool	New	564.74	15	\$332.55	15%	75%	\$0.06	0.57	0.59	AEG-BEST
Data Center	Cooling	Chiller - Variable Speed Fans	HP fan	New	2,065.32	15	\$208.36	15%	75%	\$0.01	0.21	0.22	New Jersey TRM
Data Center	Cooling	Water-Cooled Chiller - Condenser Water Reset	ChillCtrl	New	66,471.81	10	\$884.85	15%	75%	\$0.00	0.14	0.15	AEG-BEST
Data Center	Cooling	HVAC - Economizer	HP cool	New	297.08	10	\$168.42	18%	75%	\$0.07	0.89	0.93	AEG-BEST
Data Center	Heating	Space Heating - Heat Recovery Ventilator	CFM	New	0.07	14	\$5.08	6%	75%	\$8.21	0.06	0.06	7th Power Plan
Data Center	Ventilation	Ventilation - ECM on VAV Boxes	sqft	New	2.35	18	\$0.25	15%	20%	\$0.01	0.26	0.29	7th Power Plan
Data Center	Ventilation	Ventilation - Variable Speed Control	sqft	New	0.27	15	\$181.39	19%	50%	\$38.47	0.10	0.12	AEG-BEST
Data Center	Ventilation	Ventilation - Demand Controlled	sqft	New	0.13	15	\$0.25	15%	75%	\$0.11	0.10	0.12	7th Power Plan
Data Center	Cooling	Destratification Fans (HVLS)	Strat Fan	New	30,515.20	15	\$7,270.90	15%	15%	\$0.02	0.00	0.00	AEG Research
Data Center	Heating	Destratification Fans (HVLS)	Strat Fan	New	5,716.74	15	\$7,270.90	15%	15%	\$0.02	0.00	0.00	AEG Research
Data Center	Cooling	RTU - Maintenance	tonCool	New	147.65	3	\$35.00	15%	45%	\$0.07	0.03	0.04	AEG Research
Data Center	Cooling	RTU - Advanced Controls	sqft	New	1.18	15	\$0.07	15%	45%	\$0.01	0.27	0.27	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Data Center	Cooling	RTU - Evaporative Precooler	tonCool	New	298.50	15	\$681.62	15%	75%	\$0.21	1.61	1.64	AEG Research
Data Center	Cooling	Ductless Mini Split Heat Pump	tonCool	New	633.88	15	\$3,359.26	15%	25%	\$0.44	0.02	0.02	7th Power Plan
Data Center	Heating	Ductless Mini Split Heat Pump	tonCool	New	70.76	15	\$3,359.26	15%	25%	\$0.44	0.02	0.02	7th Power Plan
Data Center	Cooling	Thermostat - WiFi/Interactive	sqft	New	4.48	5	\$0.66	30%	40%	\$0.02	0.09	0.10	7th Power Plan
Data Center	Heating	Thermostat - WiFi/Interactive	sqft	New	0.45	5	\$0.66	30%	40%	\$0.02	0.00	0.00	7th Power Plan
Data Center	Ventilation	Thermostat - WiFi/Interactive	sqft	New	1.89	5	\$0.66	30%	40%	\$0.02	0.05	0.07	7th Power Plan
Data Center	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	New	79.36	10	\$8.35	25%	65%	\$0.01	0.00	0.00	Illinois TRM
Data Center	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	New	82.80	10	\$11.64	25%	65%	-\$0.08	0.00	0.00	7th Power Plan
Data Center	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	New	40.88	15	\$36.75	15%	75%	\$0.04	0.00	0.00	Hawaii TRM
Data Center	Water Heating	Water Heater - Pipe Insulation	PipeFeet	New	313.84	15	\$14.88	1%	75%	\$0.00	0.01	0.01	AEG-BEST
Data Center	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	New	55.02	4	\$144.04	25%	65%	-\$0.26	0.00	0.00	7th Power Plan
Data Center	Water Heating	Water Heater - Thermostat Setback	WHunits	New	40.56	2	\$5.00	15%	75%	\$0.02	0.00	0.00	Illinois TRM
Data Center	Water Heating	Water Heater - Solar System	PipeFeet	New	1,093.34	20	\$215.28	1%	30%	\$0.01	0.01	0.01	AEG-BEST
Data Center	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.70	15	\$0.35	11%	23%	\$0.04	0.33	0.36	7th Power Plan
Data Center	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.96	15	\$0.58	11%	23%	\$0.05	0.45	0.49	7th Power Plan
Data Center	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	New	2,005.73	15	\$54.41	1%	3%	\$0.00	0.00	0.00	7th Power Plan
Data Center	Interior Lighting	Interior Lighting - Timeclocks and Timers	occ sens	New	0.00	8	\$111.67	7%	15%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Data Center	Interior Lighting	Interior Lighting - Skylights	1000 sqft	New	0.00	15	\$1,006.35	18%	25%	\$0.00	0.00	0.00	AEG Research
Data Center	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	1000 sqft	New	452.51	16	\$1,807.69	5%	15%	\$0.32	0.04	0.05	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Data Center	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	New	4,686.02	11	\$30.80	15%	50%	\$0.00	0.12	0.14	Illinois TRM
Data Center	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	ELtg Watts	New	1.36	8	\$0.63	15%	25%	\$0.04	0.02	0.03	7th Power Plan
Data Center	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	New	48.88	8	\$55.10	15%	25%	\$0.10	0.01	0.01	Pacific Gas and Electric Research
Data Center	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	New	60.37	7	\$3,400.00	15%	30%	\$5.26	0.02	0.02	AEG Research
Data Center	Refrigeration	Refrigeration - Anti-Sweat Heater	Fridge Feet	New	14.25	8	\$48.18	0%	0%	\$0.53	0.00	0.00	7th Power Plan
Data Center	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	New	32.24	4	\$10.44	0%	0%	\$0.09	0.00	0.00	Michigan Energy Measures Database
Data Center	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	New	221.27	16	\$165.20	0%	0%	\$0.08	0.00	0.00	7th Power Plan
Data Center	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	New	23.69	15	\$335.85	0%	0%	\$1.53	0.00	0.00	7th Power Plan
Data Center	Refrigeration	Refrigeration - Strip Curtain	Walkin Door	New	25.93	2	\$10.41	0%	0%	\$0.19	0.00	0.00	7th Power Plan
Data Center	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	New	0.38	15	\$45.43	0%	0%	\$12.88	0.00	0.00	Annual Energy Outlook, 2015
Data Center	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	New	7.89	15	\$313.82	0%	0%	\$4.29	0.00	0.00	Annual Energy Outlook, 2015
Data Center	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	New	148.24	10	\$506.05	0%	0%	\$0.46	0.00	0.00	Vermont TRM
Data Center	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	New	11.06	6	\$45.41	0%	0%	\$0.79	0.00	0.00	7th Power Plan
Data Center	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	New	0.89	8	\$3.72	0%	0%	\$0.66	0.00	0.00	7th Power Plan
Data Center	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	New	213.15	5	\$45.85	0%	0%	\$0.05	0.00	0.00	Illinois TRM
Data Center	Refrigeration	Grocery - ECMs for Display Cases	Fridge Case	New	45.81	16	\$165.20	0%	0%	\$0.38	0.00	0.00	7th Power Plan
Data Center	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	New	1,164.14	5	\$187.94	25%	75%	\$0.04	0.00	0.00	Illinois TRM
Data Center	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	New	25,133.60	18	\$8,526.67	25%	50%	\$0.02	0.56	0.61	7th Power Plan
Data Center	Office Equipment	Office Equipment - Smart Power Strips	Smart Strip	New	2,592.59	4	\$41.63	10%	50%	\$0.00	0.65	0.54	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Data Center	Cooling	Lodging - Guest Room Controls	LodgUnit	New	1,627.35	15	\$260.00	0%	0%	\$0.02	0.00	0.00	AEG-BEST
Data Center	Heating	Lodging - Guest Room Controls	LodgUnit	New	-105.61	15	\$260.00	0%	0%	\$0.02	0.00	0.00	AEG-BEST
Data Center	Office Equipment	Data Center - Best Practice Measures	sqft	New	11.73	5	\$0.98	20%	75%	\$0.02	4.10	4.22	com-datacenters-7p_v5p.xlsx
Data Center	Cooling	Data Center - Commercially Available Measures	sqft	New	0.07	8	\$0.74	10%	35%	\$0.03	0.02	0.02	com-datacenters-7p_v5p.xlsx
Data Center	Ventilation	Data Center - Commercially Available Measures	sqft	New	0.03	8	\$0.74	10%	35%	\$0.03	0.01	0.01	com-datacenters-7p_v5p.xlsx
Data Center	Interior Lighting	Data Center - Commercially Available Measures	sqft	New	0.05	8	\$0.74	10%	35%	\$0.03	0.01	0.01	com-datacenters-7p_v5p.xlsx
Data Center	Office Equipment	Data Center - Commercially Available Measures	sqft	New	2.71	8	\$0.74	10%	35%	\$0.03	0.75	0.75	com-datacenters-7p_v5p.xlsx
Data Center	Cooling	Data Center - Cutting Edge Measures	sqft	New	0.33	6	\$0.04	10%	15%	\$0.00	0.01	0.01	com-datacenters-7p_v5p.xlsx
Data Center	Office Equipment	Data Center - Cutting Edge Measures	sqft	New	0.94	6	\$0.04	10%	15%	\$0.00	0.04	0.04	com-datacenters-7p_v5p.xlsx
Data Center	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	New	67,393.07	18	\$4,092.80	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Data Center	Miscellaneous	Pool Pump - Timer	perBldg	New	0.00	10	\$85.22	15%	75%	\$0.00	0.00	0.00	Ontario Power TRM
Data Center	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	New	240,579.66	6	\$35.93	1%	3%	\$0.00	0.00	0.06	7th Power Plan
Data Center	Cooling	Advanced New Construction Designs	sqft	New	7.74	25	\$4.11	10%	15%	\$0.02	0.74	0.75	AEG Research
Data Center	Heating	Advanced New Construction Designs	sqft	New	0.75	25	\$4.11	10%	15%	\$0.02	0.03	0.03	AEG Research
Data Center	Ventilation	Advanced New Construction Designs	sqft	New	3.21	25	\$4.11	10%	15%	\$0.02	0.41	0.46	AEG Research
Data Center	Water Heating	Advanced New Construction Designs	sqft	New	0.07	25	\$4.11	10%	15%	\$0.02	0.00	0.00	AEG Research
Data Center	Interior Lighting	Advanced New Construction Designs	sqft	New	1.37	25	\$4.11	10%	15%	\$0.02	0.12	0.13	AEG Research
Data Center	Exterior Lighting	Advanced New Construction Designs	sqft	New	0.20	25	\$4.11	10%	15%	\$0.02	0.02	0.02	AEG Research
Data Center	Cooling	Strategic Energy Management	sqft	New	1.15	3	\$1.44	0%	0%	\$0.08	0.00	0.00	AEG Research

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Data Center	Heating	Strategic Energy Management	sqft	New	0.12	3	\$1.44	0%	0%	\$0.08	0.00	0.00	AEG Research
Data Center	Ventilation	Strategic Energy Management	sqft	New	0.49	3	\$1.44	0%	0%	\$0.08	0.00	0.00	AEG Research
Data Center	Water Heating	Strategic Energy Management	sqft	New	0.01	3	\$1.44	0%	0%	\$0.08	0.00	0.00	AEG Research
Data Center	Interior Lighting	Strategic Energy Management	sqft	New	0.21	3	\$1.44	0%	0%	\$0.08	0.00	0.00	AEG Research
Data Center	Exterior Lighting	Strategic Energy Management	sqft	New	0.03	3	\$1.44	0%	0%	\$0.08	0.00	0.00	AEG Research
Data Center	Refrigeration	Strategic Energy Management	sqft	New	0.00	3	\$1.44	0%	0%	\$0.08	0.00	0.00	AEG Research
Data Center	Office Equipment	Strategic Energy Management	sqft	New	3.07	3	\$1.44	0%	0%	\$0.08	0.00	0.00	AEG Research
Data Center	Cooling	Commissioning	sqft	New	1.59	3	\$1.91	2%	65%	\$0.17	0.17	0.18	AEG Research
Data Center	Heating	Commissioning	sqft	New	0.16	3	\$1.91	2%	65%	\$0.17	0.01	0.01	AEG Research
Data Center	Ventilation	Commissioning	sqft	New	0.68	3	\$1.91	2%	65%	\$0.17	0.10	0.12	AEG Research
Data Center	Water Heating	Commissioning	sqft	New	0.01	3	\$1.91	2%	65%	\$0.17	0.00	0.00	AEG Research
Data Center	Interior Lighting	Commissioning	sqft	New	0.24	3	\$1.91	2%	65%	\$0.17	0.02	0.03	AEG Research
Data Center	Exterior Lighting	Commissioning	sqft	New	0.04	3	\$1.91	2%	65%	\$0.17	0.00	0.01	AEG Research
Data Center	Refrigeration	Commissioning	sqft	New	0.00	3	\$1.91	2%	65%	\$0.17	0.00	0.00	AEG Research
Data Center	Cooling	Retrocommissioning	sqft	New	1.59	3	\$1.21	0%	0%	\$0.11	0.00	0.00	AEG Research
Data Center	Heating	Retrocommissioning	sqft	New	0.16	3	\$1.21	0%	0%	\$0.11	0.00	0.00	AEG Research
Data Center	Ventilation	Retrocommissioning	sqft	New	0.68	3	\$1.21	0%	0%	\$0.11	0.00	0.00	AEG Research
Data Center	Water Heating	Retrocommissioning	sqft	New	0.01	3	\$1.21	0%	0%	\$0.11	0.00	0.00	AEG Research
Data Center	Interior Lighting	Retrocommissioning	sqft	New	0.24	3	\$1.21	0%	0%	\$0.11	0.00	0.00	AEG Research
Data Center	Exterior Lighting	Retrocommissioning	sqft	New	0.04	3	\$1.21	0%	0%	\$0.11	0.00	0.00	AEG Research
Data Center	Refrigeration	Retrocommissioning	sqft	New	0.00	3	\$1.21	0%	0%	\$0.11	0.00	0.00	AEG Research
Data Center	Interior Lighting	Fruit Storage - Lighting Controls	sqft	New	0.17	10	\$0.09	0%	0%	\$0.05	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx

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Data Center	Refrigeration	Fruit Storage Refrigeration Retrofit	sqft	New	0.01	10	\$1.09	0%	0%	\$21.20	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Data Center	Refrigeration	Fruit Storage Refrigeration Tuneup	sqft	New	0.00	3	\$0.23	0%	0%	\$43.47	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Data Center	Refrigeration	Fruit Storage Retrofit - CO2 Scrub	sqft	New	0.00	10	\$3.13	0%	0%	\$125.73	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Data Center	Refrigeration	Fruit Storage Retrofit - Membrane	sqft	New	0.00	10	\$0.68	0%	0%	\$136.43	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Miscellaneous	Cooling	Insulation - Ceiling	sqft roof	Existing	0.09	45	\$1.28	15%	35%	\$0.19	159.06	168.41	Building Energy Simulation Tool
Miscellaneous	Heating	Insulation - Ceiling	sqft roof	Existing	0.37	45	\$1.28	15%	35%	\$0.19	283.39	294.73	Building Energy Simulation Tool
Miscellaneous	Ventilation	Insulation - Ceiling	sqft roof	Existing	0.05	45	\$1.28	15%	35%	\$0.19	104.87	123.34	Building Energy Simulation Tool
Miscellaneous	Cooling	Insulation - Ducting	sqft duct	Existing	0.18	20	\$0.84	15%	50%	\$0.00	144.64	154.03	Building Energy Simulation Tool
Miscellaneous	Heating	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.84	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Miscellaneous	Ventilation	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.84	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Miscellaneous	Cooling	Building Shell - Cool Roofs	sqft roof	Existing	0.17	20	\$0.78	45%	50%	\$10.00	72.99	85.35	Building Energy Simulation Tool
Miscellaneous	Heating	Building Shell - Cool Roofs	sqft roof	Existing	-0.23	20	\$0.78	45%	50%	\$10.00	-43.31	-46.83	Building Energy Simulation Tool
Miscellaneous	Ventilation	Building Shell - Cool Roofs	sqft roof	Existing	-0.03	20	\$0.78	45%	50%	\$10.00	-15.77	-19.51	Building Energy Simulation Tool
Miscellaneous	Cooling	Insulation - Wall Cavity	sqft wall	Existing	-0.04	45	\$0.78	15%	35%	\$0.03	-22.84	-23.88	Building Energy Simulation Tool
Miscellaneous	Heating	Insulation - Wall Cavity	sqft wall	Existing	1.75	45	\$0.78	15%	35%	\$0.03	411.58	413.15	Building Energy Simulation Tool
Miscellaneous	Ventilation	Insulation - Wall Cavity	sqft wall	Existing	0.23	45	\$0.78	15%	35%	\$0.03	144.31	166.72	Building Energy Simulation Tool
Miscellaneous	Cooling	HVAC - Duct Repair and Sealing	tonCool	Existing	1.53	18	\$0.57	15%	50%	\$10.00	25.53	29.83	Building Energy Simulation Tool
Miscellaneous	Heating	HVAC - Duct Repair and Sealing	tonCool	Existing	-3.04	18	\$0.57	15%	50%	\$10.00	-22.69	-24.55	Building Energy Simulation Tool
Miscellaneous	Ventilation	HVAC - Duct Repair and Sealing	tonCool	Existing	-0.42	18	\$0.57	15%	50%	\$10.00	-8.26	-10.23	Building Energy Simulation Tool

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Miscellaneous	Cooling	Windows - High Efficiency Glazing	sqft window	Existing	3.98	30	\$35.93	48%	48%	\$0.11	0.00	0.00	7th Power Plan
Miscellaneous	Heating	Windows - High Efficiency Glazing	sqft window	Existing	20.36	30	\$35.93	48%	48%	\$0.11	0.00	0.00	7th Power Plan
Miscellaneous	Ventilation	Windows - High Efficiency Glazing	sqft window	Existing	1.61	30	\$35.93	48%	48%	\$0.11	0.00	0.00	7th Power Plan
Miscellaneous	Cooling	Chiller - Chilled Water Reset	ChillCtrl	Existing	1,041.57	10	\$884.85	15%	75%	\$0.11	33.29	36.61	AEG-BEST
Miscellaneous	Cooling	Chiller - Chilled Water Variable-Flow System	HP cool	Existing	105.25	15	\$332.55	15%	75%	\$0.32	465.97	516.23	AEG-BEST
Miscellaneous	Cooling	Chiller - Variable Speed Fans	HP fan	Existing	249.79	15	\$208.36	15%	75%	\$0.09	111.65	121.45	New Jersey TRM
Miscellaneous	Cooling	Water-Cooled Chiller - Condenser Water Reset	ChillCtrl	Existing	8,621.97	10	\$884.85	15%	75%	\$0.01	94.55	102.44	AEG-BEST
Miscellaneous	Cooling	HVAC - Economizer	HP cool	Existing	34.59	10	\$168.42	18%	75%	\$0.60	773.31	865.13	AEG-BEST
Miscellaneous	Heating	Space Heating - Heat Recovery Ventilator	CFM	Existing	4.37	14	\$5.08	3%	75%	\$0.13	1,215.17	1,241.68	7th Power Plan
Miscellaneous	Ventilation	Ventilation - ECM on VAV Boxes	sqft	Existing	0.14	18	\$0.25	15%	20%	\$0.15	71.61	83.72	7th Power Plan
Miscellaneous	Ventilation	Ventilation - Variable Speed Control	sqft	Existing	0.04	15	\$181.39	13%	25%	\$369.75	53.88	71.99	AEG-BEST
Miscellaneous	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.01	15	\$0.25	15%	25%	\$2.87	8.42	10.99	7th Power Plan
Miscellaneous	Cooling	Destratification Fans (HVLS)	Strat Fan	Existing	2,205.72	15	\$7,270.90	15%	15%	\$0.06	0.00	0.00	AEG Research
Miscellaneous	Heating	Destratification Fans (HVLS)	Strat Fan	Existing	10,982.28	15	\$7,270.90	15%	15%	\$0.06	0.00	0.00	AEG Research
Miscellaneous	Cooling	RTU - Maintenance	tonCool	Existing	16.19	3	\$35.00	15%	45%	\$0.63	179.95	220.42	AEG Research
Miscellaneous	Cooling	RTU - Advanced Controls	sqft	Existing	0.16	15	\$0.07	15%	45%	\$0.04	297.78	311.07	7th Power Plan
Miscellaneous	Cooling	RTU - Evaporative Precooler	tonCool	Existing	33.07	15	\$681.62	15%	75%	\$1.95	653.30	706.59	AEG Research
Miscellaneous	Cooling	Ductless Mini Split Heat Pump	tonCool	Existing	79.75	15	\$3,359.26	15%	25%	\$1.21	24.73	30.03	7th Power Plan
Miscellaneous	Heating	Ductless Mini Split Heat Pump	tonCool	Existing	191.73	15	\$3,359.26	15%	25%	\$1.21	195.46	209.73	7th Power Plan
Miscellaneous	Cooling	Thermostat - WiFi/Interactive	sqft	Existing	0.31	5	\$0.66	30%	40%	\$0.11	273.38	300.94	7th Power Plan
Miscellaneous	Heating	Thermostat - WiFi/Interactive	sqft	Existing	0.81	5	\$0.66	30%	40%	\$0.11	309.08	324.24	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Miscellaneous	Ventilation	Thermostat - WiFi/Interactive	sqft	Existing	0.11	5	\$0.66	30%	40%	\$0.11	111.45	134.21	7th Power Plan
Miscellaneous	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	Existing	41.66	10	\$8.35	25%	65%	\$0.02	70.96	133.46	Illinois TRM
Miscellaneous	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	Existing	43.12	10	\$11.64	25%	65%	-\$0.22	36.56	69.45	7th Power Plan
Miscellaneous	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	Existing	57.75	15	\$36.75	15%	25%	\$0.04	13.23	20.82	Hawaii TRM
Miscellaneous	Water Heating	Water Heater - Pipe Insulation	PipeFeet	Existing	171.10	15	\$14.88	16%	75%	\$0.01	183.22	314.99	AEG-BEST
Miscellaneous	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	Existing	28.44	4	\$144.04	25%	65%	-\$0.69	46.95	88.68	7th Power Plan
Miscellaneous	Water Heating	Water Heater - Thermostat Setback	WHunits	Existing	57.77	2	\$5.00	15%	75%	\$0.02	87.01	162.25	Illinois TRM
Miscellaneous	Water Heating	Water Heater - Solar System	PipeFeet	Existing	589.15	20	\$215.28	1%	30%	\$0.02	305.22	537.22	AEG-BEST
Miscellaneous	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.34	15	\$0.35	3%	23%	\$0.09	876.44	1,048.46	7th Power Plan
Miscellaneous	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.47	15	\$0.58	3%	23%	\$0.11	1,181.34	1,444.05	7th Power Plan
Miscellaneous	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	Existing	154.16	15	\$54.41	1%	3%	\$0.03	25.68	36.63	7th Power Plan
Miscellaneous	Interior Lighting	Interior Lighting - Timeclocks and Timers	occ sens	Existing	0.00	8	\$111.67	7%	15%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Miscellaneous	Interior Lighting	Interior Lighting - Skylights	1000 sqft	Existing	0.00	15	\$1,006.35	15%	25%	\$0.00	0.00	0.00	AEG Research
Miscellaneous	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	1000 sqft	Existing	182.64	16	\$1,807.69	5%	15%	\$0.82	180.01	264.41	7th Power Plan
Miscellaneous	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	Existing	1,900.00	11	\$30.80	15%	50%	\$0.00	694.84	928.27	Illinois TRM
Miscellaneous	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	ELtg Watts	Existing	1.66	8	\$0.63	15%	25%	\$0.04	223.48	357.88	7th Power Plan
Miscellaneous	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	Existing	65.79	8	\$55.10	15%	25%	\$0.09	112.84	186.42	Pacific Gas and Electric Research
Miscellaneous	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	Existing	78.68	7	\$3,400.00	15%	30%	\$5.02	198.50	340.95	AEG Research
Miscellaneous	Refrigeration	Refrigeration - Anti-Sweat Heater	Fridge Feet	Existing	18.25	8	\$48.18	0%	0%	\$0.41	0.00	0.00	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Miscellaneous	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	Existing	50.92	4	\$10.44	0%	0%	\$0.05	0.00	0.00	Michigan Energy Measures Database
Miscellaneous	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	Existing	356.25	16	\$165.20	0%	0%	\$0.05	0.00	0.00	7th Power Plan
Miscellaneous	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	Existing	26.38	15	\$335.85	0%	0%	\$1.34	0.00	0.00	7th Power Plan
Miscellaneous	Refrigeration	Refrigeration - Strip Curtain	Walkin Door	Existing	28.46	2	\$10.41	0%	0%	\$0.17	0.00	0.00	7th Power Plan
Miscellaneous	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	Existing	0.40	15	\$45.43	0%	0%	\$11.29	0.00	0.00	Annual Energy Outlook, 2015
Miscellaneous	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	Existing	8.78	15	\$313.82	0%	0%	\$3.76	0.00	0.00	Annual Energy Outlook, 2015
Miscellaneous	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	Existing	230.96	10	\$506.05	0%	0%	\$0.29	0.00	0.00	Vermont TRM
Miscellaneous	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	Existing	11.43	6	\$45.41	0%	0%	\$0.75	0.00	0.00	7th Power Plan
Miscellaneous	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	Existing	0.92	8	\$3.72	0%	0%	\$0.62	0.00	0.00	7th Power Plan
Miscellaneous	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	Existing	214.80	5	\$45.85	0%	0%	\$0.05	0.00	0.00	Illinois TRM
Miscellaneous	Refrigeration	Grocery - ECMs for Display Cases	Fridge Case	Existing	47.36	16	\$165.20	0%	0%	\$0.36	0.00	0.00	7th Power Plan
Miscellaneous	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	Existing	1,237.29	5	\$187.94	25%	75%	\$0.03	143.28	154.04	Illinois TRM
Miscellaneous	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	Existing	1,457.13	18	\$8,526.67	25%	50%	\$0.49	150.51	178.60	7th Power Plan
Miscellaneous	Office Equipment	Office Equipment - Smart Power Strips	Smart Strip	Existing	15.83	4	\$41.63	10%	50%	\$0.62	167.90	151.86	7th Power Plan
Miscellaneous	Cooling	Lodging - Guest Room Controls	LodgUnit	Existing	105.50	15	\$260.00	0%	0%	\$10.00	0.00	0.00	AEG-BEST
Miscellaneous	Heating	Lodging - Guest Room Controls	LodgUnit	Existing	-154.70	15	\$260.00	0%	0%	\$10.00	0.00	0.00	AEG-BEST
Miscellaneous	Office Equipment	Data Center - Best Practice Measures	sqft	Existing	0.03	5	\$0.00	0%	0%	\$0.02	0.00	0.00	com-datacenters-7p_v5p.xlsx
Miscellaneous	Cooling	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.01	0%	0%	\$0.04	0.00	0.00	com-datacenters-7p_v5p.xlsx
Miscellaneous	Ventilation	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.01	0%	0%	\$0.04	0.00	0.00	com-datacenters-7p_v5p.xlsx

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Miscellaneous	Interior Lighting	Data Center - Commercially Available Measures	sqft	Existing	0.03	8	\$0.01	0%	0%	\$0.04	0.00	0.00	com-datacenters-7p_v5p.xlsx
Miscellaneous	Office Equipment	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.01	0%	0%	\$0.04	0.00	0.00	com-datacenters-7p_v5p.xlsx
Miscellaneous	Cooling	Data Center - Cutting Edge Measures	sqft	Existing	0.02	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Miscellaneous	Office Equipment	Data Center - Cutting Edge Measures	sqft	Existing	0.00	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Miscellaneous	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	Existing	577.35	18	\$4,092.80	0%	5%	\$0.58	19.54	23.49	7th Power Plan
Miscellaneous	Miscellaneous	Pool Pump - Timer	perBldg	Existing	81.08	10	\$85.22	15%	75%	\$0.14	1.40	1.40	Ontario Power TRM
Miscellaneous	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	Existing	1,362.60	6	\$35.93	1%	3%	\$0.01	71.88	71.88	7th Power Plan
Miscellaneous	Cooling	Advanced New Construction Designs	sqft	Existing	0.56	25	\$4.11	0%	0%	\$0.10	0.00	0.00	AEG Research
Miscellaneous	Heating	Advanced New Construction Designs	sqft	Existing	1.37	25	\$4.11	0%	0%	\$0.10	0.00	0.00	AEG Research
Miscellaneous	Ventilation	Advanced New Construction Designs	sqft	Existing	0.19	25	\$4.11	0%	0%	\$0.10	0.00	0.00	AEG Research
Miscellaneous	Water Heating	Advanced New Construction Designs	sqft	Existing	0.25	25	\$4.11	0%	0%	\$0.10	0.00	0.00	AEG Research
Miscellaneous	Interior Lighting	Advanced New Construction Designs	sqft	Existing	0.70	25	\$4.11	0%	0%	\$0.10	0.00	0.00	AEG Research
Miscellaneous	Exterior Lighting	Advanced New Construction Designs	sqft	Existing	0.14	25	\$4.11	0%	0%	\$0.10	0.00	0.00	AEG Research
Miscellaneous	Cooling	Strategic Energy Management	sqft	Existing	0.08	3	\$0.16	5%	16%	\$0.09	79.92	97.76	AEG Research
Miscellaneous	Heating	Strategic Energy Management	sqft	Existing	0.21	3	\$0.16	5%	16%	\$0.09	94.56	103.73	AEG Research
Miscellaneous	Ventilation	Strategic Energy Management	sqft	Existing	0.03	3	\$0.16	5%	16%	\$0.09	34.43	44.97	AEG Research
Miscellaneous	Water Heating	Strategic Energy Management	sqft	Existing	0.04	3	\$0.16	5%	16%	\$0.09	22.04	41.92	AEG Research
Miscellaneous	Interior Lighting	Strategic Energy Management	sqft	Existing	0.11	3	\$0.16	5%	16%	\$0.09	115.57	175.19	AEG Research
Miscellaneous	Exterior Lighting	Strategic Energy Management	sqft	Existing	0.02	3	\$0.16	5%	16%	\$0.09	22.43	37.66	AEG Research

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Miscellaneous	Refrigeration	Strategic Energy Management	sqft	Existing	0.01	3	\$0.16	5%	16%	\$0.09	18.58	15.07	AEG Research
Miscellaneous	Office Equipment	Strategic Energy Management	sqft	Existing	0.02	3	\$0.16	5%	16%	\$0.09	27.51	25.36	AEG Research
Miscellaneous	Cooling	Commissioning	sqft	Existing	0.10	3	\$0.38	0%	0%	\$0.17	0.00	0.00	AEG Research
Miscellaneous	Heating	Commissioning	sqft	Existing	0.28	3	\$0.38	0%	0%	\$0.17	0.00	0.00	AEG Research
Miscellaneous	Ventilation	Commissioning	sqft	Existing	0.04	3	\$0.38	0%	0%	\$0.17	0.00	0.00	AEG Research
Miscellaneous	Water Heating	Commissioning	sqft	Existing	0.02	3	\$0.38	0%	0%	\$0.17	0.00	0.00	AEG Research
Miscellaneous	Interior Lighting	Commissioning	sqft	Existing	0.12	3	\$0.38	0%	0%	\$0.17	0.00	0.00	AEG Research
Miscellaneous	Exterior Lighting	Commissioning	sqft	Existing	0.02	3	\$0.38	0%	0%	\$0.17	0.00	0.00	AEG Research
Miscellaneous	Refrigeration	Commissioning	sqft	Existing	0.03	3	\$0.38	0%	0%	\$0.17	0.00	0.00	AEG Research
Miscellaneous	Cooling	Retrocommissioning	sqft	Existing	0.11	3	\$0.24	10%	65%	\$0.11	550.28	675.31	AEG Research
Miscellaneous	Heating	Retrocommissioning	sqft	Existing	0.29	3	\$0.24	10%	65%	\$0.11	651.06	716.48	AEG Research
Miscellaneous	Ventilation	Retrocommissioning	sqft	Existing	0.04	3	\$0.24	10%	65%	\$0.11	237.08	310.61	AEG Research
Miscellaneous	Water Heating	Retrocommissioning	sqft	Existing	0.02	3	\$0.24	10%	65%	\$0.11	50.59	96.54	AEG Research
Miscellaneous	Interior Lighting	Retrocommissioning	sqft	Existing	0.12	3	\$0.24	10%	65%	\$0.11	663.15	1,008.53	AEG Research
Miscellaneous	Exterior Lighting	Retrocommissioning	sqft	Existing	0.02	3	\$0.24	10%	65%	\$0.11	128.68	216.79	AEG Research
Miscellaneous	Refrigeration	Retrocommissioning	sqft	Existing	0.03	3	\$0.24	10%	65%	\$0.11	213.24	173.47	AEG Research
Miscellaneous	Interior Lighting	Fruit Storage - Lighting Controls	sqft	Existing	0.09	10	\$0.09	0%	0%	\$0.10	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Miscellaneous	Refrigeration	Fruit Storage Refrigeration Retrofit	sqft	Existing	0.09	10	\$1.09	0%	0%	\$1.62	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Miscellaneous	Refrigeration	Fruit Storage Refrigeration Tuneup	sqft	Existing	0.02	3	\$0.23	0%	0%	\$3.31	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Miscellaneous	Refrigeration	Fruit Storage Retrofit - CO2 Scrub	sqft	Existing	0.04	10	\$3.13	0%	0%	\$9.58	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Miscellaneous	Refrigeration	Fruit Storage Retrofit - Membrane	sqft	Existing	0.01	10	\$0.68	0%	0%	\$10.40	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Miscellaneous	Cooling	Insulation - Ceiling	sqft roof	New	0.00	45	\$1.28	15%	50%	\$0.25	0.00	0.00	Building Energy Simulation Tool

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Miscellaneous	Heating	Insulation - Ceiling	sqft roof	New	0.36	45	\$1.28	15%	50%	\$0.25	148.19	148.60	Building Energy Simulation Tool
Miscellaneous	Ventilation	Insulation - Ceiling	sqft roof	New	0.03	45	\$1.28	15%	50%	\$0.25	46.97	50.75	Building Energy Simulation Tool
Miscellaneous	Cooling	Insulation - Ducting	sqft duct	New	0.29	20	\$0.84	15%	50%	\$0.16	70.76	71.75	Building Energy Simulation Tool
Miscellaneous	Heating	Insulation - Ducting	sqft duct	New	0.14	20	\$0.84	15%	50%	\$0.16	13.76	13.85	Building Energy Simulation Tool
Miscellaneous	Ventilation	Insulation - Ducting	sqft duct	New	0.01	20	\$0.84	15%	50%	\$0.16	4.42	4.81	Building Energy Simulation Tool
Miscellaneous	Cooling	Building Shell - Cool Roofs	sqft roof	New	0.06	20	\$0.78	45%	50%	\$10.00	8.48	8.62	Building Energy Simulation Tool
Miscellaneous	Heating	Building Shell - Cool Roofs	sqft roof	New	-0.09	20	\$0.78	45%	50%	\$10.00	-5.56	-5.59	Building Energy Simulation Tool
Miscellaneous	Ventilation	Building Shell - Cool Roofs	sqft roof	New	-0.01	20	\$0.78	45%	50%	\$10.00	-1.77	-1.93	Building Energy Simulation Tool
Miscellaneous	Cooling	Insulation - Wall Cavity	sqft wall	New	0.00	45	\$0.78	15%	50%	\$0.16	-0.38	-0.39	Building Energy Simulation Tool
Miscellaneous	Heating	Insulation - Wall Cavity	sqft wall	New	0.34	45	\$0.78	15%	50%	\$0.16	42.29	42.33	Building Energy Simulation Tool
Miscellaneous	Ventilation	Insulation - Wall Cavity	sqft wall	New	0.03	45	\$0.78	15%	50%	\$0.16	13.47	14.50	Building Energy Simulation Tool
Miscellaneous	Cooling	HVAC - Duct Repair and Sealing	tonCool	New	1.70	18	\$0.57	15%	50%	\$0.00	9.23	9.33	Building Energy Simulation Tool
Miscellaneous	Heating	HVAC - Duct Repair and Sealing	tonCool	New	11.18	18	\$0.57	15%	50%	\$0.00	25.16	25.21	Building Energy Simulation Tool
Miscellaneous	Ventilation	HVAC - Duct Repair and Sealing	tonCool	New	1.03	18	\$0.57	15%	50%	\$0.00	8.01	8.66	Building Energy Simulation Tool
Miscellaneous	Cooling	Windows - High Efficiency Glazing	sqft window	New	3.58	30	\$35.93	66%	66%	\$0.12	0.00	0.00	7th Power Plan
Miscellaneous	Heating	Windows - High Efficiency Glazing	sqft window	New	19.47	30	\$35.93	66%	66%	\$0.12	0.00	0.00	7th Power Plan
Miscellaneous	Ventilation	Windows - High Efficiency Glazing	sqft window	New	1.05	30	\$35.93	66%	66%	\$0.12	0.00	0.00	7th Power Plan
Miscellaneous	Cooling	Chiller - Chilled Water Reset	ChillCtrl	New	849.99	10	\$884.85	15%	75%	\$0.13	3.46	3.57	AEG-BEST
Miscellaneous	Cooling	Chiller - Chilled Water Variable-Flow System	HP cool	New	85.62	15	\$332.55	15%	75%	\$0.38	61.84	64.19	AEG-BEST

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Miscellaneous	Cooling	Chiller - Variable Speed Fans	HP fan	New	202.16	15	\$208.36	15%	75%	\$0.10	14.68	15.09	New Jersey TRM
Miscellaneous	Cooling	Water-Cooled Chiller - Condenser Water Reset	ChillCtrl	New	6,920.25	10	\$884.85	15%	75%	\$0.02	9.61	9.89	AEG-BEST
Miscellaneous	Cooling	HVAC - Economizer	HP cool	New	32.08	10	\$168.42	18%	75%	\$0.63	91.05	95.07	AEG-BEST
Miscellaneous	Heating	Space Heating - Heat Recovery Ventilator	CFM	New	4.05	14	\$5.08	6%	75%	\$0.14	161.75	163.90	7th Power Plan
Miscellaneous	Ventilation	Ventilation - ECM on VAV Boxes	sqft	New	0.09	18	\$0.25	15%	20%	\$0.17	17.63	19.06	7th Power Plan
Miscellaneous	Ventilation	Ventilation - Variable Speed Control	sqft	New	0.03	15	\$181.39	19%	25%	\$425.45	3.63	4.23	AEG-BEST
Miscellaneous	Ventilation	Ventilation - Demand Controlled	sqft	New	0.01	15	\$0.25	15%	25%	\$3.30	1.15	1.34	7th Power Plan
Miscellaneous	Cooling	Destratification Fans (HVLS)	Strat Fan	New	1,984.42	15	\$7,270.90	15%	15%	\$0.06	0.00	0.00	AEG Research
Miscellaneous	Heating	Destratification Fans (HVLS)	Strat Fan	New	10,263.92	15	\$7,270.90	15%	15%	\$0.06	0.00	0.00	AEG Research
Miscellaneous	Cooling	RTU - Maintenance	tonCool	New	15.96	3	\$35.00	15%	45%	\$0.64	5.32	5.86	AEG Research
Miscellaneous	Cooling	RTU - Advanced Controls	sqft	New	0.15	15	\$0.07	15%	45%	\$0.04	79.70	80.93	7th Power Plan
Miscellaneous	Cooling	RTU - Evaporative Precooler	tonCool	New	32.39	15	\$681.62	15%	75%	\$2.00	235.59	237.92	AEG Research
Miscellaneous	Cooling	Ductless Mini Split Heat Pump	tonCool	New	67.87	15	\$3,359.26	15%	25%	\$1.34	4.79	4.99	7th Power Plan
Miscellaneous	Heating	Ductless Mini Split Heat Pump	tonCool	New	186.64	15	\$3,359.26	15%	25%	\$1.34	39.79	40.31	7th Power Plan
Miscellaneous	Cooling	Thermostat - WiFi/Interactive	sqft	New	0.29	5	\$0.66	30%	40%	\$0.12	10.16	10.67	7th Power Plan
Miscellaneous	Heating	Thermostat - WiFi/Interactive	sqft	New	0.78	5	\$0.66	30%	40%	\$0.12	11.20	11.47	7th Power Plan
Miscellaneous	Ventilation	Thermostat - WiFi/Interactive	sqft	New	0.07	5	\$0.66	30%	40%	\$0.12	3.56	4.29	7th Power Plan
Miscellaneous	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	New	30.33	10	\$8.35	25%	65%	\$0.02	7.58	11.00	Illinois TRM
Miscellaneous	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	New	31.64	10	\$11.64	25%	65%	-\$0.22	3.96	5.74	7th Power Plan
Miscellaneous	Water Heating	Water Heater - High Efficiency Circulation Pump	WHUnits	New	42.55	15	\$36.75	15%	25%	\$0.04	3.69	4.39	Hawaii TRM
Miscellaneous	Water Heating	Water Heater - Pipe Insulation	PipeFeet	New	120.03	15	\$14.88	1%	75%	\$0.01	35.84	48.83	AEG-BEST

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Miscellaneous	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	New	21.12	4	\$144.04	25%	65%	-\$0.70	2.37	3.72	7th Power Plan
Miscellaneous	Water Heating	Water Heater - Thermostat Setback	WHUnits	New	42.59	2	\$5.00	15%	75%	\$0.02	1.25	2.10	Illinois TRM
Miscellaneous	Water Heating	Water Heater - Solar System	PipeFeet	New	418.19	20	\$215.28	1%	30%	\$0.02	50.53	68.34	AEG-BEST
Miscellaneous	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.30	15	\$0.35	11%	23%	\$0.09	268.94	295.24	7th Power Plan
Miscellaneous	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.42	15	\$0.58	11%	23%	\$0.11	369.83	407.57	7th Power Plan
Miscellaneous	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	New	136.88	15	\$54.41	1%	3%	\$0.03	3.25	3.87	7th Power Plan
Miscellaneous	Interior Lighting	Interior Lighting - Timeclocks and Timers	occ sens	New	0.00	8	\$111.67	7%	15%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Miscellaneous	Interior Lighting	Interior Lighting - Skylights	1000 sqft	New	0.00	15	\$1,006.35	18%	25%	\$0.00	0.00	0.00	AEG Research
Miscellaneous	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	1000 sqft	New	161.73	16	\$1,807.69	5%	15%	\$0.84	30.05	35.34	7th Power Plan
Miscellaneous	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	New	1,664.54	11	\$30.80	15%	50%	\$0.00	88.07	104.05	Illinois TRM
Miscellaneous	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	ELtg Watts	New	1.30	8	\$0.63	15%	25%	\$0.05	22.17	29.21	7th Power Plan
Miscellaneous	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	New	52.58	8	\$55.10	15%	25%	\$0.10	11.69	15.33	Pacific Gas and Electric Research
Miscellaneous	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	New	64.70	7	\$3,400.00	15%	30%	\$5.51	18.95	25.26	AEG Research
Miscellaneous	Refrigeration	Refrigeration - Anti-Sweat Heater	Fridge Feet	New	13.68	8	\$48.18	0%	0%	\$0.54	0.00	0.00	7th Power Plan
Miscellaneous	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	New	43.62	4	\$10.44	0%	0%	\$0.06	0.00	0.00	Michigan Energy Measures Database
Miscellaneous	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	New	294.84	16	\$165.20	0%	0%	\$0.06	0.00	0.00	7th Power Plan
Miscellaneous	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	New	24.17	15	\$335.85	0%	0%	\$1.45	0.00	0.00	7th Power Plan
Miscellaneous	Refrigeration	Refrigeration - Strip Curtain	Walkin Door	New	24.74	2	\$10.41	0%	0%	\$0.20	0.00	0.00	7th Power Plan
Miscellaneous	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBtuh	New	0.38	15	\$45.43	0%	0%	\$12.23	0.00	0.00	Annual Energy Outlook, 2015

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Miscellaneous	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	New	8.05	15	\$313.82	0%	0%	\$4.08	0.00	0.00	Annual Energy Outlook, 2015
Miscellaneous	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	New	195.82	10	\$506.05	0%	0%	\$0.34	0.00	0.00	Vermont TRM
Miscellaneous	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	New	10.49	6	\$45.41	0%	0%	\$0.81	0.00	0.00	7th Power Plan
Miscellaneous	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	New	0.84	8	\$3.72	0%	0%	\$0.67	0.00	0.00	7th Power Plan
Miscellaneous	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	New	201.91	5	\$45.85	0%	0%	\$0.05	0.00	0.00	Illinois TRM
Miscellaneous	Refrigeration	Grocery - ECMs for Display Cases	Fridge Case	New	43.44	16	\$165.20	0%	0%	\$0.38	0.00	0.00	7th Power Plan
Miscellaneous	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	New	1,221.20	5	\$187.94	25%	75%	\$0.03	8.16	8.30	Illinois TRM
Miscellaneous	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	New	954.31	18	\$8,526.67	25%	50%	\$0.56	37.04	40.42	7th Power Plan
Miscellaneous	Office Equipment	Office Equipment - Smart Power Strips	Smart Strip	New	14.89	4	\$41.63	10%	50%	\$0.65	7.10	6.23	7th Power Plan
Miscellaneous	Cooling	Lodging - Guest Room Controls	LodgUnit	New	93.34	15	\$260.00	0%	0%	\$10.00	0.00	0.00	AEG-BEST
Miscellaneous	Heating	Lodging - Guest Room Controls	LodgUnit	New	-155.19	15	\$260.00	0%	0%	\$10.00	0.00	0.00	AEG-BEST
Miscellaneous	Office Equipment	Data Center - Best Practice Measures	sqft	New	0.03	5	\$0.00	0%	0%	\$0.02	0.00	0.00	com-datacenters-7p_v5p.xlsx
Miscellaneous	Cooling	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.01	0%	0%	\$0.04	0.00	0.00	com-datacenters-7p_v5p.xlsx
Miscellaneous	Ventilation	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.01	0%	0%	\$0.04	0.00	0.00	com-datacenters-7p_v5p.xlsx
Miscellaneous	Interior Lighting	Data Center - Commercially Available Measures	sqft	New	0.02	8	\$0.01	0%	0%	\$0.04	0.00	0.00	com-datacenters-7p_v5p.xlsx
Miscellaneous	Office Equipment	Data Center - Commercially Available Measures	sqft	New	0.01	8	\$0.01	0%	0%	\$0.04	0.00	0.00	com-datacenters-7p_v5p.xlsx
Miscellaneous	Cooling	Data Center - Cutting Edge Measures	sqft	New	0.02	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Miscellaneous	Office Equipment	Data Center - Cutting Edge Measures	sqft	New	0.00	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Miscellaneous	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	New	380.21	18	\$4,092.80	0%	5%	\$0.67	4.87	5.33	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Miscellaneous	Miscellaneous	Pool Pump - Timer	perBldg	New	81.18	10	\$85.22	15%	75%	\$0.14	0.19	0.19	Ontario Power TRM
Miscellaneous	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	New	1,362.41	6	\$35.93	1%	3%	\$0.01	4.43	4.43	7th Power Plan
Miscellaneous	Cooling	Advanced New Construction Designs	sqft	New	0.51	25	\$4.11	10%	15%	\$0.10	81.26	82.12	AEG Research
Miscellaneous	Heating	Advanced New Construction Designs	sqft	New	1.32	25	\$4.11	10%	15%	\$0.10	87.74	88.03	AEG Research
Miscellaneous	Ventilation	Advanced New Construction Designs	sqft	New	0.12	25	\$4.11	10%	15%	\$0.10	28.21	30.76	AEG Research
Miscellaneous	Water Heating	Advanced New Construction Designs	sqft	New	0.19	25	\$4.11	10%	15%	\$0.10	23.26	26.85	AEG Research
Miscellaneous	Interior Lighting	Advanced New Construction Designs	sqft	New	0.63	25	\$4.11	10%	15%	\$0.10	112.06	119.76	AEG Research
Miscellaneous	Exterior Lighting	Advanced New Construction Designs	sqft	New	0.11	25	\$4.11	10%	15%	\$0.10	21.62	23.30	AEG Research
Miscellaneous	Cooling	Strategic Energy Management	sqft	New	0.07	3	\$0.15	16%	16%	\$0.09	0.00	0.00	AEG Research
Miscellaneous	Heating	Strategic Energy Management	sqft	New	0.20	3	\$0.15	16%	16%	\$0.09	0.00	0.00	AEG Research
Miscellaneous	Ventilation	Strategic Energy Management	sqft	New	0.02	3	\$0.15	16%	16%	\$0.09	0.00	0.00	AEG Research
Miscellaneous	Water Heating	Strategic Energy Management	sqft	New	0.03	3	\$0.15	16%	16%	\$0.09	0.00	0.00	AEG Research
Miscellaneous	Interior Lighting	Strategic Energy Management	sqft	New	0.10	3	\$0.15	16%	16%	\$0.09	0.00	0.00	AEG Research
Miscellaneous	Exterior Lighting	Strategic Energy Management	sqft	New	0.02	3	\$0.15	16%	16%	\$0.09	0.00	0.00	AEG Research
Miscellaneous	Refrigeration	Strategic Energy Management	sqft	New	0.01	3	\$0.15	16%	16%	\$0.09	0.00	0.00	AEG Research
Miscellaneous	Office Equipment	Strategic Energy Management	sqft	New	0.02	3	\$0.15	16%	16%	\$0.09	0.00	0.00	AEG Research
Miscellaneous	Cooling	Commissioning	sqft	New	0.10	3	\$0.35	10%	65%	\$0.17	16.15	17.60	AEG Research
Miscellaneous	Heating	Commissioning	sqft	New	0.28	3	\$0.35	10%	65%	\$0.17	18.17	18.78	AEG Research
Miscellaneous	Ventilation	Commissioning	sqft	New	0.03	3	\$0.35	10%	65%	\$0.17	5.79	7.13	AEG Research
Miscellaneous	Water Heating	Commissioning	sqft	New	0.01	3	\$0.35	10%	65%	\$0.17	1.61	2.61	AEG Research
Miscellaneous	Interior Lighting	Commissioning	sqft	New	0.11	3	\$0.35	10%	65%	\$0.17	19.41	26.85	AEG Research

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Miscellaneous	Exterior Lighting	Commissioning	sqft	New	0.02	3	\$0.35	10%	65%	\$0.17	3.75	5.50	AEG Research
Miscellaneous	Refrigeration	Commissioning	sqft	New	0.02	3	\$0.35	10%	65%	\$0.17	5.30	3.87	AEG Research
Miscellaneous	Cooling	Retrocommissioning	sqft	New	0.10	3	\$0.22	0%	0%	\$0.11	0.00	0.00	AEG Research
Miscellaneous	Heating	Retrocommissioning	sqft	New	0.28	3	\$0.22	0%	0%	\$0.11	0.00	0.00	AEG Research
Miscellaneous	Ventilation	Retrocommissioning	sqft	New	0.03	3	\$0.22	0%	0%	\$0.11	0.00	0.00	AEG Research
Miscellaneous	Water Heating	Retrocommissioning	sqft	New	0.01	3	\$0.22	0%	0%	\$0.11	0.00	0.00	AEG Research
Miscellaneous	Interior Lighting	Retrocommissioning	sqft	New	0.11	3	\$0.22	0%	0%	\$0.11	0.00	0.00	AEG Research
Miscellaneous	Exterior Lighting	Retrocommissioning	sqft	New	0.02	3	\$0.22	0%	0%	\$0.11	0.00	0.00	AEG Research
Miscellaneous	Refrigeration	Retrocommissioning	sqft	New	0.02	3	\$0.22	0%	0%	\$0.11	0.00	0.00	AEG Research
Miscellaneous	Interior Lighting	Fruit Storage - Lighting Controls	sqft	New	0.08	10	\$0.09	0%	0%	\$0.11	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Miscellaneous	Refrigeration	Fruit Storage Refrigeration Retrofit	sqft	New	0.08	10	\$1.09	0%	0%	\$1.88	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Miscellaneous	Refrigeration	Fruit Storage Refrigeration Tuneup	sqft	New	0.02	3	\$0.23	0%	0%	\$3.85	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Miscellaneous	Refrigeration	Fruit Storage Retrofit - CO2 Scrub	sqft	New	0.04	10	\$3.13	0%	0%	\$11.14	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Miscellaneous	Refrigeration	Fruit Storage Retrofit - Membrane	sqft	New	0.01	10	\$0.68	0%	0%	\$12.08	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx

Wyoming Commercial Measures Assumptions

Table H-10 Comparison of 7th Plan and RTF Commercial Measures in Wyoming

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036) (MWh @gen)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Large Office	Cooling	Air-Cooled Chiller	1 kBTU/hr	Existing	27.84	20	\$26.36	17%	at stock turnover	\$0.09	424.00	377.85	Annual Energy Outlook, 2015
Large Office	Cooling	Water-Cooled Chiller	1 kBTU/hr	Existing	41.99	25	\$12.65	11%	at stock turnover	\$0.03	393.85	350.98	Annual Energy Outlook, 2015
Large Office	Cooling	RTU	1 kBTU/hr	Existing	4.16	15	\$6.75	56%	at stock turnover	\$0.18	244.20	212.57	Annual Energy Outlook, 2015
Large Office	Cooling	Room AC	1 kBTU/hr	Existing	17.60	15	\$23.62	3%	at stock turnover	\$0.15	54.68	47.60	Annual Energy Outlook, 2015
Large Office	Cooling	Evaporative AC	11 per TR	Existing	0.00	15	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	New Buildings Institute Study, 2006
Large Office	Cooling	Air-Source Heat Pump	1 kBTU/hr	Existing	8.01	15	\$21.65	3%	at stock turnover	\$0.18	17.43	15.76	Annual Energy Outlook, 2015
Large Office	Heating	Air-Source Heat Pump	1 kBTU/hr	Existing	4.84	15	\$21.65	3%	at stock turnover	\$0.18	10.54	9.53	Annual Energy Outlook, 2015
Large Office	Cooling	Geothermal Heat Pump	1 kBTU/hr	Existing	19.46	25	\$26.36	2%	at stock turnover	\$0.06	19.04	17.37	Annual Energy Outlook, 2015
Large Office	Heating	Geothermal Heat Pump	1 kBTU/hr	Existing	18.64	25	\$26.36	2%	at stock turnover	\$0.06	18.24	16.64	Annual Energy Outlook, 2015
Large Office	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	1%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Large Office	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	18%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Large Office	Ventilation	Ventilation	1000 CFM	Existing	13,137.35	20	\$1,219.71	100%	at stock turnover	\$0.01	990.40	903.60	AEG-BEST
Large Office	Water Heating	Water Heater	65 gallons	Existing	2,463.67	13	\$3,537.01	45%	at stock turnover	\$0.17	1,231.56	1,080.10	7th Power Plan
Large Office	Interior Lighting	Screw-in	lamps	Existing	57.65	8	\$3.95	100%	at stock turnover	\$0.00	415.98	629.55	7th Power Plan
Large Office	Interior Lighting	Linear Lighting	lamps	Existing	76.18	17	\$52.83	100%	at stock turnover	\$0.05	4,067.81	3,443.42	7th Power Plan
Large Office	Interior Lighting	High-Bay Fixtures	lamps	Existing	436.52	15	\$123.86	100%	at stock turnover	\$0.03	2,537.46	2,058.59	Annual Energy Outlook, 2015
Large Office	Exterior Lighting	Screw-in	lamps	Existing	86.76	8	\$3.95	100%	at stock turnover	\$0.00	107.06	162.03	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Large Office	Exterior Lighting	Linear Lighting	lamps	Existing	105.05	17	\$52.83	100%	at stock turnover	\$0.04	424.51	359.35	7th Power Plan
Large Office	Exterior Lighting	Area Lighting	lamps	Existing	1,426.23	15	\$44.55	100%	at stock turnover	\$0.00	2,960.80	2,452.41	Annual Energy Outlook, 2015
Large Office	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	Existing	1,507.00	11	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Large Office	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	Existing	605.00	15	\$0.00	14%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Large Office	Refrigeration	Glass Door Display	1 unit	Existing	767.00	15	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Large Office	Refrigeration	Open Display Case	1 unit	Existing	1,438.00	10	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Large Office	Refrigeration	Icemaker	1 unit	Existing	499.39	9	\$1,056.09	45%	at stock turnover	\$0.33	3.75	3.32	ENERGY STAR
Large Office	Refrigeration	Vending Machine	1 unit	Existing	92.22	10	\$42.81	45%	at stock turnover	\$0.06	3.98	3.50	EIA 2011-2012 Ref. Case
Large Office	Food Preparation	Oven	1 unit	Existing	17,196.93	10	\$1,067.99	66%	at stock turnover	\$0.01	112.69	99.20	RTF Workbook
Large Office	Food Preparation	Fryer	1 unit	Existing	3,280.18	10	\$782.02	76%	at stock turnover	\$0.03	56.04	49.33	RTF Workbook
Large Office	Food Preparation	Dishwasher	1 unit	Existing	1,535.09	15	\$564.57	43%	at stock turnover	\$0.04	9.44	8.50	ENERGY STAR
Large Office	Food Preparation	Hot Food Container	1 unit	Existing	913.35	20	\$490.95	43%	at stock turnover	\$0.05	14.01	12.68	RTF Workbook
Large Office	Food Preparation	Steamer	1 unit	Existing	75,356.70	9	\$837.45	43%	at stock turnover	\$0.00	167.13	146.74	RTF Workbook
Large Office	Office Equipment	Desktop Computer	1 unit	Existing	140.62	5	\$0.01	100%	at stock turnover	\$0.00	2,265.21	1,828.89	7th Power Plan
Large Office	Office Equipment	Laptop	1 unit	Existing	41.96	4	\$0.01	100%	at stock turnover	\$0.00	277.83	234.37	7th Power Plan
Large Office	Office Equipment	Monitor	1 unit	Existing	34.90	5	\$0.01	100%	at stock turnover	\$0.00	141.82	114.50	7th Power Plan
Large Office	Office Equipment	Server	1 unit	Existing	84.36	4	\$0.01	100%	at stock turnover	\$0.00	210.23	178.27	AEG Research
Large Office	Office Equipment	Printer/Copier/Fax	1 unit	Existing	253.89	6	\$0.01	100%	at stock turnover	\$0.00	43.16	37.26	ENERGY STAR
Large Office	Office Equipment	POS Terminal	1 unit	Existing	140.62	5	\$0.01	40%	at stock turnover	\$0.00	17.58	14.96	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Large Office	Miscellaneous	Non-HVAC Motors	1 unit	Existing	0.00	15	\$0.00	90%	at stock turnover	\$0.00	0.00	0.00	N/A
Large Office	Miscellaneous	Pool Pump	1 unit	Existing	0.00	10	\$246.30	0%	at stock turnover	\$0.00	0.00	0.00	Southern California Edison
Large Office	Miscellaneous	Pool Heater	1 unit	Existing	0.00	15	\$3,546.07	0%	at stock turnover	\$0.00	0.00	0.00	AEG Research
Large Office	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Large Office	Cooling	Air-Cooled Chiller	1 kBTU/hr	New	24.18	20	\$26.36	20%	at stock turnover	\$0.10	310.93	279.67	Annual Energy Outlook, 2015
Large Office	Cooling	Water-Cooled Chiller	1 kBTU/hr	New	36.91	25	\$12.65	12%	at stock turnover	\$0.03	259.32	231.13	Annual Energy Outlook, 2015
Large Office	Cooling	RTU	1 kBTU/hr	New	2.84	15	\$6.75	64%	at stock turnover	\$0.26	107.60	95.79	Annual Energy Outlook, 2015
Large Office	Cooling	Room AC	1 kBTU/hr	New	13.09	15	\$23.62	3%	at stock turnover	\$0.20	25.47	22.68	Annual Energy Outlook, 2015
Large Office	Cooling	Evaporative AC	11 per TR	New	0.00	15	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	New Buildings Institute Study, 2006
Large Office	Cooling	Air-Source Heat Pump	1 kBTU/hr	New	5.91	15	\$21.65	3%	at stock turnover	\$0.22	8.45	7.77	Annual Energy Outlook, 2015
Large Office	Heating	Air-Source Heat Pump	1 kBTU/hr	New	4.73	15	\$21.65	3%	at stock turnover	\$0.22	6.76	6.22	Annual Energy Outlook, 2015
Large Office	Cooling	Geothermal Heat Pump	1 kBTU/hr	New	16.56	25	\$26.36	2%	at stock turnover	\$0.08	11.80	10.76	Annual Energy Outlook, 2015
Large Office	Heating	Geothermal Heat Pump	1 kBTU/hr	New	13.88	25	\$26.36	2%	at stock turnover	\$0.08	9.88	9.02	Annual Energy Outlook, 2015
Large Office	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	1%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Large Office	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	18%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Large Office	Ventilation	Ventilation	1000 CFM	New	11,947.23	20	\$1,219.71	100%	at stock turnover	\$0.01	634.35	582.46	AEG-BEST
Large Office	Water Heating	Water Heater	65 gallons	New	2,477.94	13	\$3,537.01	45%	at stock turnover	\$0.17	623.16	561.39	7th Power Plan
Large Office	Interior Lighting	Screw-in	lamps	New	55.76	8	\$3.95	100%	at stock turnover	\$0.00	210.94	209.50	7th Power Plan
Large Office	Interior Lighting	Linear Lighting	lamps	New	77.53	17	\$52.83	100%	at stock turnover	\$0.05	1,959.58	1,689.20	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Large Office	Interior Lighting	High-Bay Fixtures	lamps	New	430.58	15	\$123.86	100%	at stock turnover	\$0.03	1,430.09	1,207.65	Annual Energy Outlook, 2015
Large Office	Exterior Lighting	Screw-in	lamps	New	83.92	8	\$3.95	100%	at stock turnover	\$0.00	54.29	53.92	7th Power Plan
Large Office	Exterior Lighting	Linear Lighting	lamps	New	106.91	17	\$52.83	100%	at stock turnover	\$0.04	204.50	176.28	7th Power Plan
Large Office	Exterior Lighting	Area Lighting	lamps	New	1,438.65	15	\$44.55	100%	at stock turnover	\$0.00	1,710.74	1,468.54	Annual Energy Outlook, 2015
Large Office	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	New	1,507.00	11	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Large Office	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	New	605.00	15	\$0.00	17%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Large Office	Refrigeration	Glass Door Display	1 unit	New	767.00	15	\$0.00	93%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Large Office	Refrigeration	Open Display Case	1 unit	New	1,438.00	10	\$0.00	93%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Large Office	Refrigeration	Icemaker	1 unit	New	488.61	9	\$1,056.09	54%	at stock turnover	\$0.33	6.20	5.65	ENERGY STAR
Large Office	Refrigeration	Vending Machine	1 unit	New	92.75	10	\$42.81	54%	at stock turnover	\$0.06	2.40	2.19	EIA 2011-2012 Ref. Case
Large Office	Food Preparation	Oven	1 unit	New	17,296.56	10	\$1,067.99	79%	at stock turnover	\$0.01	67.98	61.96	RTF Workbook
Large Office	Food Preparation	Fryer	1 unit	New	3,299.18	10	\$782.02	92%	at stock turnover	\$0.03	33.80	30.81	RTF Workbook
Large Office	Food Preparation	Dishwasher	1 unit	New	1,543.99	15	\$564.57	52%	at stock turnover	\$0.04	5.66	5.17	ENERGY STAR
Large Office	Food Preparation	Hot Food Container	1 unit	New	918.64	20	\$490.95	52%	at stock turnover	\$0.05	10.02	9.12	RTF Workbook
Large Office	Food Preparation	Steamer	1 unit	New	75,793.27	9	\$837.45	52%	at stock turnover	\$0.00	103.49	93.87	RTF Workbook
Large Office	Office Equipment	Desktop Computer	1 unit	New	140.62	5	\$0.01	125%	at stock turnover	\$0.00	978.57	834.24	7th Power Plan
Large Office	Office Equipment	Laptop	1 unit	New	41.96	4	\$0.01	125%	at stock turnover	\$0.00	133.04	116.37	7th Power Plan
Large Office	Office Equipment	Monitor	1 unit	New	34.90	5	\$0.01	125%	at stock turnover	\$0.00	61.27	52.23	7th Power Plan
Large Office	Office Equipment	Server	1 unit	New	84.36	4	\$0.01	125%	at stock turnover	\$0.00	93.51	82.20	AEG Research

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Large Office	Office Equipment	Printer/Copier/Fax	1 unit	New	253.89	6	\$0.01	125%	at stock turnover	\$0.00	23.48	21.14	ENERGY STAR
Large Office	Office Equipment	POS Terminal	1 unit	New	141.44	5	\$0.01	44%	at stock turnover	\$0.00	8.08	7.18	7th Power Plan
Large Office	Miscellaneous	Non-HVAC Motors	1 unit	New	0.00	15	\$0.00	107%	at stock turnover	\$0.00	0.00	0.00	N/A
Large Office	Miscellaneous	Pool Pump	1 unit	New	0.00	10	\$246.30	0%	at stock turnover	\$0.00	0.00	0.00	Southern California Edison
Large Office	Miscellaneous	Pool Heater	1 unit	New	0.00	15	\$3,546.07	0%	at stock turnover	\$0.00	0.00	0.00	AEG Research
Large Office	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Small Office	Cooling	Air-Cooled Chiller	1 kBTU/hr	Existing	0.00	20	\$26.36	17%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Small Office	Cooling	Water-Cooled Chiller	1 kBTU/hr	Existing	0.00	25	\$12.65	11%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Small Office	Cooling	RTU	1 kBTU/hr	Existing	5.09	15	\$6.75	56%	at stock turnover	\$0.14	1,485.60	1,293.21	Annual Energy Outlook, 2015
Small Office	Cooling	Room AC	1 kBTU/hr	Existing	21.56	15	\$23.62	3%	at stock turnover	\$0.12	221.95	193.21	Annual Energy Outlook, 2015
Small Office	Cooling	Evaporative AC	11 per TR	Existing	0.00	15	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	New Buildings Institute Study, 2006
Small Office	Cooling	Air-Source Heat Pump	1 kBTU/hr	Existing	9.81	15	\$21.65	3%	at stock turnover	\$0.14	81.70	73.90	Annual Energy Outlook, 2015
Small Office	Heating	Air-Source Heat Pump	1 kBTU/hr	Existing	6.59	15	\$21.65	3%	at stock turnover	\$0.14	54.92	49.67	Annual Energy Outlook, 2015
Small Office	Cooling	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	2%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Small Office	Heating	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	2%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Small Office	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	1%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Small Office	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	18%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Small Office	Ventilation	Ventilation	1000 CFM	Existing	8,489.35	20	\$1,219.71	100%	at stock turnover	\$0.01	3,309.14	3,019.11	AEG-BEST
Small Office	Water Heating	Water Heater	65 gallons	Existing	2,463.54	13	\$3,537.01	45%	at stock turnover	\$0.17	3,196.73	2,803.60	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Small Office	Interior Lighting	Screw-in	lamps	Existing	60.23	8	\$3.95	100%	at stock turnover	\$0.00	1,562.93	2,370.39	7th Power Plan
Small Office	Interior Lighting	Linear Lighting	lamps	Existing	82.86	17	\$52.83	100%	at stock turnover	\$0.05	11,745.22	9,942.39	7th Power Plan
Small Office	Interior Lighting	High-Bay Fixtures	lamps	Existing	605.68	15	\$123.86	100%	at stock turnover	\$0.02	12,768.72	10,384.94	Annual Energy Outlook, 2015
Small Office	Exterior Lighting	Screw-in	lamps	Existing	98.66	8	\$3.95	100%	at stock turnover	\$0.00	670.32	1,016.63	7th Power Plan
Small Office	Exterior Lighting	Linear Lighting	lamps	Existing	137.03	17	\$52.83	100%	at stock turnover	\$0.03	554.03	468.99	7th Power Plan
Small Office	Exterior Lighting	Area Lighting	lamps	Existing	1,276.64	15	\$44.55	100%	at stock turnover	\$0.00	11,858.39	9,822.22	Annual Energy Outlook, 2015
Small Office	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	Existing	0.00	11	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Small Office	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	Existing	605.00	15	\$0.00	14%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Small Office	Refrigeration	Glass Door Display	1 unit	Existing	767.00	15	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Small Office	Refrigeration	Open Display Case	1 unit	Existing	1,438.00	10	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Small Office	Refrigeration	Icemaker	1 unit	Existing	499.39	9	\$1,056.09	45%	at stock turnover	\$0.33	4.40	3.90	ENERGY STAR
Small Office	Refrigeration	Vending Machine	1 unit	Existing	92.22	10	\$42.81	45%	at stock turnover	\$0.06	2.36	2.08	EIA 2011-2012 Ref. Case
Small Office	Food Preparation	Oven	1 unit	Existing	17,196.93	10	\$1,067.99	66%	at stock turnover	\$0.01	48.88	43.03	RTF Workbook
Small Office	Food Preparation	Fryer	1 unit	Existing	3,280.18	10	\$782.02	76%	at stock turnover	\$0.03	21.00	18.48	RTF Workbook
Small Office	Food Preparation	Dishwasher	1 unit	Existing	1,535.09	15	\$564.57	43%	at stock turnover	\$0.04	6.27	5.65	ENERGY STAR
Small Office	Food Preparation	Hot Food Container	1 unit	Existing	913.35	20	\$490.95	43%	at stock turnover	\$0.05	9.31	8.43	RTF Workbook
Small Office	Food Preparation	Steamer	1 unit	Existing	75,356.70	9	\$837.45	43%	at stock turnover	\$0.00	111.10	97.55	RTF Workbook
Small Office	Office Equipment	Desktop Computer	1 unit	Existing	140.62	5	\$0.01	100%	at stock turnover	\$0.00	4,440.75	3,585.38	7th Power Plan
Small Office	Office Equipment	Laptop	1 unit	Existing	41.96	4	\$0.01	100%	at stock turnover	\$0.00	544.66	459.47	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Small Office	Office Equipment	Monitor	1 unit	Existing	34.90	5	\$0.01	100%	at stock turnover	\$0.00	278.03	224.47	7th Power Plan
Small Office	Office Equipment	Server	1 unit	Existing	84.36	4	\$0.01	100%	at stock turnover	\$0.00	1,236.39	1,048.43	AEG Research
Small Office	Office Equipment	Printer/Copier/Fax	1 unit	Existing	253.89	6	\$0.01	100%	at stock turnover	\$0.00	126.90	109.58	ENERGY STAR
Small Office	Office Equipment	POS Terminal	1 unit	Existing	140.62	5	\$0.01	40%	at stock turnover	\$0.00	107.16	91.25	7th Power Plan
Small Office	Miscellaneous	Non-HVAC Motors	1 unit	Existing	0.00	15	\$0.00	90%	at stock turnover	\$0.00	0.00	0.00	N/A
Small Office	Miscellaneous	Pool Pump	1 unit	Existing	0.00	10	\$246.30	0%	at stock turnover	\$0.00	0.00	0.00	Southern California Edison
Small Office	Miscellaneous	Pool Heater	1 unit	Existing	0.00	15	\$3,546.07	0%	at stock turnover	\$0.00	0.00	0.00	AEG Research
Small Office	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Small Office	Cooling	Air-Cooled Chiller	1 kBTU/hr	New	0.00	20	\$26.36	20%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Small Office	Cooling	Water-Cooled Chiller	1 kBTU/hr	New	0.00	25	\$12.65	12%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Small Office	Cooling	RTU	1 kBTU/hr	New	3.35	15	\$6.75	64%	at stock turnover	\$0.22	666.05	592.99	Annual Energy Outlook, 2015
Small Office	Cooling	Room AC	1 kBTU/hr	New	16.04	15	\$23.62	3%	at stock turnover	\$0.16	112.54	100.20	Annual Energy Outlook, 2015
Small Office	Cooling	Evaporative AC	11 per TR	New	0.00	15	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	New Buildings Institute Study, 2006
Small Office	Cooling	Air-Source Heat Pump	1 kBTU/hr	New	7.24	15	\$21.65	3%	at stock turnover	\$0.17	43.11	39.65	Annual Energy Outlook, 2015
Small Office	Heating	Air-Source Heat Pump	1 kBTU/hr	New	6.44	15	\$21.65	3%	at stock turnover	\$0.17	38.33	35.26	Annual Energy Outlook, 2015
Small Office	Cooling	Geothermal Heat Pump	1 kBTU/hr	New	19.58	25	\$26.36	2%	at stock turnover	\$0.06	49.28	44.96	Annual Energy Outlook, 2015
Small Office	Heating	Geothermal Heat Pump	1 kBTU/hr	New	19.09	25	\$26.36	2%	at stock turnover	\$0.06	48.06	43.85	Annual Energy Outlook, 2015
Small Office	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	1%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Small Office	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	18%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Small Office	Ventilation	Ventilation	1000 CFM	New	7,673.87	20	\$1,219.71	100%	at stock turnover	\$0.02	1,876.52	1,723.01	AEG-BEST
Small Office	Water Heating	Water Heater	65 gallons	New	2,477.81	13	\$3,537.01	45%	at stock turnover	\$0.17	1,617.52	1,457.20	7th Power Plan
Small Office	Interior Lighting	Screw-in	lamps	New	57.96	8	\$3.95	100%	at stock turnover	\$0.00	791.27	783.81	7th Power Plan
Small Office	Interior Lighting	Linear Lighting	lamps	New	84.33	17	\$52.83	100%	at stock turnover	\$0.05	5,658.01	4,877.33	7th Power Plan
Small Office	Interior Lighting	High-Bay Fixtures	lamps	New	628.10	15	\$123.86	100%	at stock turnover	\$0.02	7,580.80	6,430.57	Annual Energy Outlook, 2015
Small Office	Exterior Lighting	Screw-in	lamps	New	94.94	8	\$3.95	100%	at stock turnover	\$0.00	339.36	336.16	7th Power Plan
Small Office	Exterior Lighting	Linear Lighting	lamps	New	139.46	17	\$52.83	100%	at stock turnover	\$0.03	266.89	230.07	7th Power Plan
Small Office	Exterior Lighting	Area Lighting	lamps	New	1,287.76	15	\$44.55	100%	at stock turnover	\$0.00	6,851.73	5,881.71	Annual Energy Outlook, 2015
Small Office	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	New	0.00	11	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Small Office	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	New	605.00	15	\$0.00	17%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Small Office	Refrigeration	Glass Door Display	1 unit	New	767.00	15	\$0.00	93%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Small Office	Refrigeration	Open Display Case	1 unit	New	1,438.00	10	\$0.00	93%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Small Office	Refrigeration	Icemaker	1 unit	New	488.61	9	\$1,056.09	54%	at stock turnover	\$0.33	2.76	2.51	ENERGY STAR
Small Office	Refrigeration	Vending Machine	1 unit	New	92.75	10	\$42.81	54%	at stock turnover	\$0.06	1.43	1.30	EIA 2011-2012 Ref. Case
Small Office	Food Preparation	Oven	1 unit	New	17,296.56	10	\$1,067.99	79%	at stock turnover	\$0.01	30.71	27.99	RTF Workbook
Small Office	Food Preparation	Fryer	1 unit	New	3,299.18	10	\$782.02	92%	at stock turnover	\$0.03	13.19	12.03	RTF Workbook
Small Office	Food Preparation	Dishwasher	1 unit	New	1,543.99	15	\$564.57	52%	at stock turnover	\$0.04	3.92	3.58	ENERGY STAR
Small Office	Food Preparation	Hot Food Container	1 unit	New	918.64	20	\$490.95	52%	at stock turnover	\$0.05	6.94	6.32	RTF Workbook
Small Office	Food Preparation	Steamer	1 unit	New	75,793.27	9	\$837.45	52%	at stock turnover	\$0.00	71.66	65.00	RTF Workbook

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Small Office	Office Equipment	Desktop Computer	1 unit	New	140.62	5	\$0.01	125%	at stock turnover	\$0.00	1,918.39	1,635.45	7th Power Plan
Small Office	Office Equipment	Laptop	1 unit	New	41.96	4	\$0.01	125%	at stock turnover	\$0.00	260.81	228.13	7th Power Plan
Small Office	Office Equipment	Monitor	1 unit	New	34.90	5	\$0.01	125%	at stock turnover	\$0.00	120.11	102.39	7th Power Plan
Small Office	Office Equipment	Server	1 unit	New	84.36	4	\$0.01	125%	at stock turnover	\$0.00	549.97	483.46	AEG Research
Small Office	Office Equipment	Printer/Copier/Fax	1 unit	New	253.89	6	\$0.01	125%	at stock turnover	\$0.00	69.05	62.15	ENERGY STAR
Small Office	Office Equipment	POS Terminal	1 unit	New	141.44	5	\$0.01	44%	at stock turnover	\$0.00	47.54	42.23	7th Power Plan
Small Office	Miscellaneous	Non-HVAC Motors	1 unit	New	0.00	15	\$0.00	107%	at stock turnover	\$0.00	0.00	0.00	N/A
Small Office	Miscellaneous	Pool Pump	1 unit	New	0.00	10	\$246.30	0%	at stock turnover	\$0.00	0.00	0.00	Southern California Edison
Small Office	Miscellaneous	Pool Heater	1 unit	New	0.00	15	\$3,546.07	0%	at stock turnover	\$0.00	0.00	0.00	AEG Research
Small Office	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Large Retail	Cooling	Air-Cooled Chiller	1 kBTU/hr	Existing	20.88	20	\$26.36	17%	at stock turnover	\$0.12	14.44	12.88	Annual Energy Outlook, 2015
Large Retail	Cooling	Water-Cooled Chiller	1 kBTU/hr	Existing	31.31	25	\$12.65	11%	at stock turnover	\$0.04	13.33	11.89	Annual Energy Outlook, 2015
Large Retail	Cooling	RTU	1 kBTU/hr	Existing	3.29	15	\$6.75	56%	at stock turnover	\$0.22	190.39	165.98	Annual Energy Outlook, 2015
Large Retail	Cooling	Room AC	1 kBTU/hr	Existing	13.93	15	\$23.62	3%	at stock turnover	\$0.18	35.30	30.77	Annual Energy Outlook, 2015
Large Retail	Cooling	Evaporative AC	11 per TR	Existing	0.00	15	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	New Buildings Institute Study, 2006
Large Retail	Cooling	Air-Source Heat Pump	1 kBTU/hr	Existing	6.34	15	\$21.65	3%	at stock turnover	\$0.23	7.08	6.41	Annual Energy Outlook, 2015
Large Retail	Heating	Air-Source Heat Pump	1 kBTU/hr	Existing	3.69	15	\$21.65	3%	at stock turnover	\$0.23	4.12	3.73	Annual Energy Outlook, 2015
Large Retail	Cooling	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	2%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Large Retail	Heating	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	2%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Large Retail	Heating	Electric Furnace	1 kBtu/hr	Existing	0.00	18	\$0.00	1%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Large Retail	Heating	Electric Room Heat	3.5 kBtu/hr	Existing	0.00	18	\$0.00	18%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Large Retail	Ventilation	Ventilation	1000 CFM	Existing	7,921.26	20	\$1,219.71	100%	at stock turnover	\$0.01	1,336.92	1,220.60	AEG-BEST
Large Retail	Water Heating	Water Heater	65 gallons	Existing	2,428.15	13	\$3,537.01	45%	at stock turnover	\$0.17	789.21	693.22	7th Power Plan
Large Retail	Interior Lighting	Screw-in	lamps	Existing	92.33	8	\$3.95	100%	at stock turnover	\$0.00	344.24	404.22	7th Power Plan
Large Retail	Interior Lighting	Linear Lighting	lamps	Existing	167.42	17	\$52.83	100%	at stock turnover	\$0.02	3,611.60	3,064.27	7th Power Plan
Large Retail	Interior Lighting	High-Bay Fixtures	lamps	Existing	1,026.13	15	\$123.86	100%	at stock turnover	\$0.01	2,318.72	1,881.05	Annual Energy Outlook, 2015
Large Retail	Exterior Lighting	Screw-in	lamps	Existing	81.52	8	\$3.95	100%	at stock turnover	\$0.00	123.01	144.45	7th Power Plan
Large Retail	Exterior Lighting	Linear Lighting	lamps	Existing	157.88	17	\$52.83	100%	at stock turnover	\$0.02	95.85	81.32	7th Power Plan
Large Retail	Exterior Lighting	Area Lighting	lamps	Existing	1,322.90	15	\$44.55	100%	at stock turnover	\$0.00	1,128.19	937.02	Annual Energy Outlook, 2015
Large Retail	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	Existing	1,507.00	11	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Large Retail	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	Existing	605.00	15	\$0.00	14%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Large Retail	Refrigeration	Glass Door Display	1 unit	Existing	767.00	15	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Large Retail	Refrigeration	Open Display Case	1 unit	Existing	1,438.00	10	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Large Retail	Refrigeration	Icemaker	1 unit	Existing	499.39	9	\$1,056.09	45%	at stock turnover	\$0.33	16.43	14.57	ENERGY STAR
Large Retail	Refrigeration	Vending Machine	1 unit	Existing	92.22	10	\$42.81	45%	at stock turnover	\$0.06	4.97	4.38	EIA 2011-2012 Ref. Case
Large Retail	Food Preparation	Oven	1 unit	Existing	17,196.93	10	\$1,067.99	66%	at stock turnover	\$0.01	43.35	38.20	RTF Workbook
Large Retail	Food Preparation	Fryer	1 unit	Existing	3,280.18	10	\$782.02	76%	at stock turnover	\$0.03	34.42	30.34	RTF Workbook
Large Retail	Food Preparation	Dishwasher	1 unit	Existing	1,535.09	15	\$564.57	43%	at stock turnover	\$0.04	8.99	8.10	ENERGY STAR

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Large Retail	Food Preparation	Hot Food Container	1 unit	Existing	913.35	20	\$490.95	43%	at stock turnover	\$0.05	13.31	12.06	RTF Workbook
Large Retail	Food Preparation	Steamer	1 unit	Existing	75,356.70	9	\$837.45	43%	at stock turnover	\$0.00	159.93	140.64	RTF Workbook
Large Retail	Office Equipment	Desktop Computer	1 unit	Existing	140.62	5	\$0.01	100%	at stock turnover	\$0.00	163.74	132.29	7th Power Plan
Large Retail	Office Equipment	Laptop	1 unit	Existing	41.96	4	\$0.01	100%	at stock turnover	\$0.00	20.23	17.08	7th Power Plan
Large Retail	Office Equipment	Monitor	1 unit	Existing	34.90	5	\$0.01	100%	at stock turnover	\$0.00	10.25	8.28	7th Power Plan
Large Retail	Office Equipment	Server	1 unit	Existing	84.36	4	\$0.01	100%	at stock turnover	\$0.00	20.26	17.21	AEG Research
Large Retail	Office Equipment	Printer/Copier/Fax	1 unit	Existing	253.89	6	\$0.01	100%	at stock turnover	\$0.00	4.75	4.11	ENERGY STAR
Large Retail	Office Equipment	POS Terminal	1 unit	Existing	140.62	5	\$0.01	40%	at stock turnover	\$0.00	5.65	4.81	7th Power Plan
Large Retail	Miscellaneous	Non-HVAC Motors	1 unit	Existing	0.00	15	\$0.00	90%	at stock turnover	\$0.00	0.00	0.00	N/A
Large Retail	Miscellaneous	Pool Pump	1 unit	Existing	0.00	10	\$246.30	0%	at stock turnover	\$0.00	0.00	0.00	Southern California Edison
Large Retail	Miscellaneous	Pool Heater	1 unit	Existing	0.00	15	\$3,546.07	0%	at stock turnover	\$0.00	0.00	0.00	AEG Research
Large Retail	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Large Retail	Cooling	Air-Cooled Chiller	1 kBtu/hr	New	17.77	20	\$26.36	20%	at stock turnover	\$0.14	10.67	9.60	Annual Energy Outlook, 2015
Large Retail	Cooling	Water-Cooled Chiller	1 kBtu/hr	New	26.80	25	\$12.65	12%	at stock turnover	\$0.04	8.80	7.85	Annual Energy Outlook, 2015
Large Retail	Cooling	RTU	1 kBtu/hr	New	2.81	15	\$6.75	64%	at stock turnover	\$0.26	107.62	95.88	Annual Energy Outlook, 2015
Large Retail	Cooling	Room AC	1 kBtu/hr	New	10.36	15	\$23.62	3%	at stock turnover	\$0.25	17.38	15.48	Annual Energy Outlook, 2015
Large Retail	Cooling	Evaporative AC	11 per TR	New	0.00	15	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	New Buildings Institute Study, 2006
Large Retail	Cooling	Air-Source Heat Pump	1 kBtu/hr	New	5.38	15	\$21.65	3%	at stock turnover	\$0.26	4.16	3.83	Annual Energy Outlook, 2015
Large Retail	Heating	Air-Source Heat Pump	1 kBtu/hr	New	3.60	15	\$21.65	3%	at stock turnover	\$0.26	2.79	2.57	Annual Energy Outlook, 2015

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Large Retail	Cooling	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	2%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Large Retail	Heating	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	2%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Large Retail	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	1%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Large Retail	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	18%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Large Retail	Ventilation	Ventilation	1000 CFM	New	6,859.22	20	\$1,219.71	100%	at stock turnover	\$0.02	631.01	579.64	AEG-BEST
Large Retail	Water Heating	Water Heater	65 gallons	New	2,478.04	13	\$3,537.01	45%	at stock turnover	\$0.17	361.05	325.42	7th Power Plan
Large Retail	Interior Lighting	Screw-in	lamps	New	90.31	8	\$3.95	100%	at stock turnover	\$0.00	156.23	143.89	7th Power Plan
Large Retail	Interior Lighting	Linear Lighting	lamps	New	170.38	17	\$52.83	100%	at stock turnover	\$0.02	1,557.23	1,344.24	7th Power Plan
Large Retail	Interior Lighting	High-Bay Fixtures	lamps	New	1,044.30	15	\$123.86	100%	at stock turnover	\$0.01	1,204.97	1,018.45	Annual Energy Outlook, 2015
Large Retail	Exterior Lighting	Screw-in	lamps	New	79.75	8	\$3.95	100%	at stock turnover	\$0.00	55.83	51.42	7th Power Plan
Large Retail	Exterior Lighting	Linear Lighting	lamps	New	160.67	17	\$52.83	100%	at stock turnover	\$0.02	41.33	35.68	7th Power Plan
Large Retail	Exterior Lighting	Area Lighting	lamps	New	1,334.42	15	\$44.55	100%	at stock turnover	\$0.00	582.71	500.90	Annual Energy Outlook, 2015
Large Retail	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	New	1,507.00	11	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Large Retail	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	New	605.00	15	\$0.00	17%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Large Retail	Refrigeration	Glass Door Display	1 unit	New	767.00	15	\$0.00	93%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Large Retail	Refrigeration	Open Display Case	1 unit	New	1,438.00	10	\$0.00	93%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Large Retail	Refrigeration	Icemaker	1 unit	New	488.61	9	\$1,056.09	54%	at stock turnover	\$0.33	8.26	7.53	ENERGY STAR
Large Retail	Refrigeration	Vending Machine	1 unit	New	92.75	10	\$42.81	54%	at stock turnover	\$0.06	3.14	2.86	EIA 2011-2012 Ref. Case
Large Retail	Food Preparation	Oven	1 unit	New	17,296.56	10	\$1,067.99	79%	at stock turnover	\$0.01	34.55	31.50	RTF Workbook

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Large Retail	Food Preparation	Fryer	1 unit	New	3,299.18	10	\$782.02	92%	at stock turnover	\$0.03	21.56	19.66	RTF Workbook
Large Retail	Food Preparation	Dishwasher	1 unit	New	1,543.99	15	\$564.57	52%	at stock turnover	\$0.04	5.62	5.13	ENERGY STAR
Large Retail	Food Preparation	Hot Food Container	1 unit	New	918.64	20	\$490.95	52%	at stock turnover	\$0.05	9.95	9.07	RTF Workbook
Large Retail	Food Preparation	Steamer	1 unit	New	75,793.27	9	\$837.45	52%	at stock turnover	\$0.00	102.55	93.06	RTF Workbook
Large Retail	Office Equipment	Desktop Computer	1 unit	New	140.62	5	\$0.01	125%	at stock turnover	\$0.00	56.57	48.27	7th Power Plan
Large Retail	Office Equipment	Laptop	1 unit	New	41.96	4	\$0.01	125%	at stock turnover	\$0.00	7.69	6.73	7th Power Plan
Large Retail	Office Equipment	Monitor	1 unit	New	34.90	5	\$0.01	125%	at stock turnover	\$0.00	3.54	3.02	7th Power Plan
Large Retail	Office Equipment	Server	1 unit	New	84.36	4	\$0.01	125%	at stock turnover	\$0.00	7.69	6.77	AEG Research
Large Retail	Office Equipment	Printer/Copier/Fax	1 unit	New	253.89	6	\$0.01	125%	at stock turnover	\$0.00	2.06	1.86	ENERGY STAR
Large Retail	Office Equipment	POS Terminal	1 unit	New	141.44	5	\$0.01	44%	at stock turnover	\$0.00	2.70	2.40	7th Power Plan
Large Retail	Miscellaneous	Non-HVAC Motors	1 unit	New	0.00	15	\$0.00	107%	at stock turnover	\$0.00	0.00	0.00	N/A
Large Retail	Miscellaneous	Pool Pump	1 unit	New	0.00	10	\$246.30	0%	at stock turnover	\$0.00	0.00	0.00	Southern California Edison
Large Retail	Miscellaneous	Pool Heater	1 unit	New	0.00	15	\$3,546.07	0%	at stock turnover	\$0.00	0.00	0.00	AEG Research
Large Retail	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Small Retail	Cooling	Air-Cooled Chiller	1 kBtu/hr	Existing	0.00	20	\$26.36	17%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Small Retail	Cooling	Water-Cooled Chiller	1 kBtu/hr	Existing	0.00	25	\$12.65	11%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Small Retail	Cooling	RTU	1 kBtu/hr	Existing	3.31	15	\$6.75	56%	at stock turnover	\$0.22	779.82	679.85	Annual Energy Outlook, 2015
Small Retail	Cooling	Room AC	1 kBtu/hr	Existing	11.42	15	\$23.62	3%	at stock turnover	\$0.22	83.35	72.66	Annual Energy Outlook, 2015
Small Retail	Cooling	Evaporative AC	11 per TR	Existing	0.00	15	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	New Buildings Institute Study, 2006

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Small Retail	Cooling	Air-Source Heat Pump	1 kBtu/hr	Existing	6.38	15	\$21.65	3%	at stock turnover	\$0.23	39.10	35.40	Annual Energy Outlook, 2015
Small Retail	Heating	Air-Source Heat Pump	1 kBtu/hr	Existing	3.94	15	\$21.65	3%	at stock turnover	\$0.23	24.15	21.86	Annual Energy Outlook, 2015
Small Retail	Cooling	Geothermal Heat Pump	1 kBtu/hr	Existing	0.00	25	\$26.36	2%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Small Retail	Heating	Geothermal Heat Pump	1 kBtu/hr	Existing	0.00	25	\$26.36	2%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Small Retail	Heating	Electric Furnace	1 kBtu/hr	Existing	0.00	18	\$0.00	1%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Small Retail	Heating	Electric Room Heat	3.5 kBtu/hr	Existing	0.00	18	\$0.00	18%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Small Retail	Ventilation	Ventilation	1000 CFM	Existing	2,685.20	20	\$1,219.71	100%	at stock turnover	\$0.04	1,755.78	1,603.02	AEG-BEST
Small Retail	Water Heating	Water Heater	65 gallons	Existing	2,428.19	13	\$3,537.01	45%	at stock turnover	\$0.17	2,329.41	2,046.07	7th Power Plan
Small Retail	Interior Lighting	Screw-in	lamps	Existing	60.94	8	\$3.95	100%	at stock turnover	\$0.00	880.20	1,033.59	7th Power Plan
Small Retail	Interior Lighting	Linear Lighting	lamps	Existing	110.50	17	\$52.83	100%	at stock turnover	\$0.03	9,234.77	7,835.25	7th Power Plan
Small Retail	Interior Lighting	High-Bay Fixtures	lamps	Existing	677.25	15	\$123.86	100%	at stock turnover	\$0.02	5,928.91	4,809.79	Annual Energy Outlook, 2015
Small Retail	Exterior Lighting	Screw-in	lamps	Existing	81.52	8	\$3.95	100%	at stock turnover	\$0.00	476.56	559.61	7th Power Plan
Small Retail	Exterior Lighting	Linear Lighting	lamps	Existing	157.88	17	\$52.83	100%	at stock turnover	\$0.02	371.34	315.06	7th Power Plan
Small Retail	Exterior Lighting	Area Lighting	lamps	Existing	1,322.90	15	\$44.55	100%	at stock turnover	\$0.00	4,370.84	3,630.22	Annual Energy Outlook, 2015
Small Retail	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	Existing	0.00	11	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Small Retail	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	Existing	605.00	15	\$0.00	14%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Small Retail	Refrigeration	Glass Door Display	1 unit	Existing	767.00	15	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Small Retail	Refrigeration	Open Display Case	1 unit	Existing	1,438.00	10	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Small Retail	Refrigeration	Icemaker	1 unit	Existing	499.39	9	\$1,056.09	45%	at stock turnover	\$0.33	4.94	4.38	ENERGY STAR

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Small Retail	Refrigeration	Vending Machine	1 unit	Existing	92.22	10	\$42.81	45%	at stock turnover	\$0.06	1.49	1.32	EIA 2011-2012 Ref. Case
Small Retail	Food Preparation	Oven	1 unit	Existing	17,196.93	10	\$1,067.99	66%	at stock turnover	\$0.01	14.34	12.64	RTF Workbook
Small Retail	Food Preparation	Fryer	1 unit	Existing	3,280.18	10	\$782.02	76%	at stock turnover	\$0.03	12.32	10.86	RTF Workbook
Small Retail	Food Preparation	Dishwasher	1 unit	Existing	1,535.09	15	\$564.57	43%	at stock turnover	\$0.04	3.67	3.31	ENERGY STAR
Small Retail	Food Preparation	Hot Food Container	1 unit	Existing	913.35	20	\$490.95	43%	at stock turnover	\$0.05	5.44	4.93	RTF Workbook
Small Retail	Food Preparation	Steamer	1 unit	Existing	75,356.70	9	\$837.45	43%	at stock turnover	\$0.00	65.39	57.50	RTF Workbook
Small Retail	Office Equipment	Desktop Computer	1 unit	Existing	140.62	5	\$0.01	100%	at stock turnover	\$0.00	213.03	172.12	7th Power Plan
Small Retail	Office Equipment	Laptop	1 unit	Existing	41.96	4	\$0.01	100%	at stock turnover	\$0.00	26.32	22.22	7th Power Plan
Small Retail	Office Equipment	Monitor	1 unit	Existing	34.90	5	\$0.01	100%	at stock turnover	\$0.00	13.34	10.78	7th Power Plan
Small Retail	Office Equipment	Server	1 unit	Existing	84.36	4	\$0.01	100%	at stock turnover	\$0.00	240.11	203.73	AEG Research
Small Retail	Office Equipment	Printer/Copier/Fax	1 unit	Existing	253.89	6	\$0.01	100%	at stock turnover	\$0.00	4.95	4.28	ENERGY STAR
Small Retail	Office Equipment	POS Terminal	1 unit	Existing	140.62	5	\$0.01	40%	at stock turnover	\$0.00	98.05	83.42	7th Power Plan
Small Retail	Miscellaneous	Non-HVAC Motors	1 unit	Existing	0.00	15	\$0.00	90%	at stock turnover	\$0.00	0.00	0.00	N/A
Small Retail	Miscellaneous	Pool Pump	1 unit	Existing	0.00	10	\$246.30	0%	at stock turnover	\$0.00	0.00	0.00	Southern California Edison
Small Retail	Miscellaneous	Pool Heater	1 unit	Existing	0.00	15	\$3,546.07	0%	at stock turnover	\$0.00	0.00	0.00	AEG Research
Small Retail	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Small Retail	Cooling	Air-Cooled Chiller	1 kBTU/hr	New	0.00	20	\$26.36	20%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Small Retail	Cooling	Water-Cooled Chiller	1 kBTU/hr	New	0.00	25	\$12.65	12%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Small Retail	Cooling	RTU	1 kBTU/hr	New	2.51	15	\$6.75	64%	at stock turnover	\$0.29	391.51	348.81	Annual Energy Outlook, 2015

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Small Retail	Cooling	Room AC	1 kBTU/hr	New	8.50	15	\$23.62	3%	at stock turnover	\$0.30	41.03	36.56	Annual Energy Outlook, 2015
Small Retail	Cooling	Evaporative AC	11 per TR	New	0.00	15	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	New Buildings Institute Study, 2006
Small Retail	Cooling	Air-Source Heat Pump	1 kBTU/hr	New	4.71	15	\$21.65	3%	at stock turnover	\$0.28	20.00	18.41	Annual Energy Outlook, 2015
Small Retail	Heating	Air-Source Heat Pump	1 kBTU/hr	New	3.84	15	\$21.65	3%	at stock turnover	\$0.28	16.34	15.04	Annual Energy Outlook, 2015
Small Retail	Cooling	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	2%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Small Retail	Heating	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	2%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Small Retail	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	1%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Small Retail	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	18%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Small Retail	Ventilation	Ventilation	1000 CFM	New	2,502.63	20	\$1,219.71	100%	at stock turnover	\$0.05	891.96	819.34	AEG-BEST
Small Retail	Water Heating	Water Heater	65 gallons	New	2,478.08	13	\$3,537.01	45%	at stock turnover	\$0.17	1,065.66	960.49	7th Power Plan
Small Retail	Interior Lighting	Screw-in	lamps	New	59.61	8	\$3.95	100%	at stock turnover	\$0.00	399.49	367.92	7th Power Plan
Small Retail	Interior Lighting	Linear Lighting	lamps	New	112.45	17	\$52.83	100%	at stock turnover	\$0.03	3,981.78	3,437.18	7th Power Plan
Small Retail	Interior Lighting	High-Bay Fixtures	lamps	New	689.24	15	\$123.86	100%	at stock turnover	\$0.02	3,081.07	2,604.14	Annual Energy Outlook, 2015
Small Retail	Exterior Lighting	Screw-in	lamps	New	79.75	8	\$3.95	100%	at stock turnover	\$0.00	216.29	199.20	7th Power Plan
Small Retail	Exterior Lighting	Linear Lighting	lamps	New	160.67	17	\$52.83	100%	at stock turnover	\$0.02	160.11	138.21	7th Power Plan
Small Retail	Exterior Lighting	Area Lighting	lamps	New	1,334.42	15	\$44.55	100%	at stock turnover	\$0.00	2,257.53	1,940.58	Annual Energy Outlook, 2015
Small Retail	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	New	0.00	11	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Small Retail	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	New	605.00	15	\$0.00	17%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Small Retail	Refrigeration	Glass Door Display	1 unit	New	767.00	15	\$0.00	93%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Small Retail	Refrigeration	Open Display Case	1 unit	New	1,438.00	10	\$0.00	93%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Small Retail	Refrigeration	Icemaker	1 unit	New	488.61	9	\$1,056.09	54%	at stock turnover	\$0.33	2.48	2.26	ENERGY STAR
Small Retail	Refrigeration	Vending Machine	1 unit	New	92.75	10	\$42.81	54%	at stock turnover	\$0.06	0.94	0.86	EIA 2011-2012 Ref. Case
Small Retail	Food Preparation	Oven	1 unit	New	17,296.56	10	\$1,067.99	79%	at stock turnover	\$0.01	11.43	10.42	RTF Workbook
Small Retail	Food Preparation	Fryer	1 unit	New	3,299.18	10	\$782.02	92%	at stock turnover	\$0.03	7.72	7.04	RTF Workbook
Small Retail	Food Preparation	Dishwasher	1 unit	New	1,543.99	15	\$564.57	52%	at stock turnover	\$0.04	2.30	2.10	ENERGY STAR
Small Retail	Food Preparation	Hot Food Container	1 unit	New	918.64	20	\$490.95	52%	at stock turnover	\$0.05	4.07	3.71	RTF Workbook
Small Retail	Food Preparation	Steamer	1 unit	New	75,793.27	9	\$837.45	52%	at stock turnover	\$0.00	41.93	38.05	RTF Workbook
Small Retail	Office Equipment	Desktop Computer	1 unit	New	140.62	5	\$0.01	125%	at stock turnover	\$0.00	73.60	62.81	7th Power Plan
Small Retail	Office Equipment	Laptop	1 unit	New	41.96	4	\$0.01	125%	at stock turnover	\$0.00	10.01	8.76	7th Power Plan
Small Retail	Office Equipment	Monitor	1 unit	New	34.90	5	\$0.01	125%	at stock turnover	\$0.00	4.61	3.93	7th Power Plan
Small Retail	Office Equipment	Server	1 unit	New	84.36	4	\$0.01	125%	at stock turnover	\$0.00	92.23	81.14	AEG Research
Small Retail	Office Equipment	Printer/Copier/Fax	1 unit	New	253.89	6	\$0.01	125%	at stock turnover	\$0.00	2.15	1.94	ENERGY STAR
Small Retail	Office Equipment	POS Terminal	1 unit	New	141.44	5	\$0.01	44%	at stock turnover	\$0.00	46.79	41.60	7th Power Plan
Small Retail	Miscellaneous	Non-HVAC Motors	1 unit	New	0.00	15	\$0.00	107%	at stock turnover	\$0.00	0.00	0.00	N/A
Small Retail	Miscellaneous	Pool Pump	1 unit	New	0.00	10	\$246.30	0%	at stock turnover	\$0.00	0.00	0.00	Southern California Edison
Small Retail	Miscellaneous	Pool Heater	1 unit	New	0.00	15	\$3,546.07	0%	at stock turnover	\$0.00	0.00	0.00	AEG Research
Small Retail	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Restaurant	Cooling	Air-Cooled Chiller	1 kBtu/hr	Existing	0.00	20	\$26.36	17%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Restaurant	Cooling	Water-Cooled Chiller	1 kBTU/hr	Existing	0.00	25	\$12.65	11%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Restaurant	Cooling	RTU	1 kBTU/hr	Existing	2.90	15	\$6.75	56%	at stock turnover	\$0.25	168.11	146.56	Annual Energy Outlook, 2015
Restaurant	Cooling	Room AC	1 kBTU/hr	Existing	12.30	15	\$23.62	3%	at stock turnover	\$0.21	26.06	22.72	Annual Energy Outlook, 2015
Restaurant	Cooling	Evaporative AC	11 per TR	Existing	0.00	15	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	New Buildings Institute Study, 2006
Restaurant	Cooling	Air-Source Heat Pump	1 kBTU/hr	Existing	5.59	15	\$21.65	3%	at stock turnover	\$0.29	13.69	12.39	Annual Energy Outlook, 2015
Restaurant	Heating	Air-Source Heat Pump	1 kBTU/hr	Existing	2.52	15	\$21.65	3%	at stock turnover	\$0.29	6.17	5.58	Annual Energy Outlook, 2015
Restaurant	Cooling	Geothermal Heat Pump	1 kBTU/hr	Existing	13.60	25	\$26.36	2%	at stock turnover	\$0.11	11.41	10.41	Annual Energy Outlook, 2015
Restaurant	Heating	Geothermal Heat Pump	1 kBTU/hr	Existing	7.98	25	\$26.36	2%	at stock turnover	\$0.11	6.69	6.11	Annual Energy Outlook, 2015
Restaurant	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	1%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Restaurant	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	18%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Restaurant	Ventilation	Ventilation	1000 CFM	Existing	1,061.23	20	\$1,219.71	100%	at stock turnover	\$0.11	339.37	309.85	AEG-BEST
Restaurant	Water Heating	Water Heater	65 gallons	Existing	2,463.79	13	\$3,537.01	45%	at stock turnover	\$0.17	1,636.20	1,437.19	7th Power Plan
Restaurant	Interior Lighting	Screw-in	lamps	Existing	101.88	8	\$3.95	100%	at stock turnover	\$0.00	760.97	906.50	7th Power Plan
Restaurant	Interior Lighting	Linear Lighting	lamps	Existing	193.04	17	\$52.83	100%	at stock turnover	\$0.02	1,592.48	1,351.14	7th Power Plan
Restaurant	Interior Lighting	High-Bay Fixtures	lamps	Existing	1,729.87	15	\$123.86	100%	at stock turnover	\$0.01	3,221.49	2,675.62	Annual Energy Outlook, 2015
Restaurant	Exterior Lighting	Screw-in	lamps	Existing	84.89	8	\$3.95	100%	at stock turnover	\$0.00	131.80	157.00	7th Power Plan
Restaurant	Exterior Lighting	Linear Lighting	lamps	Existing	160.16	17	\$52.83	100%	at stock turnover	\$0.02	343.78	291.68	7th Power Plan
Restaurant	Exterior Lighting	Area Lighting	lamps	Existing	1,299.24	15	\$44.55	100%	at stock turnover	\$0.00	1,923.91	1,597.91	Annual Energy Outlook, 2015
Restaurant	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	Existing	1,507.00	11	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Restaurant	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	Existing	605.00	15	\$0.00	14%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Restaurant	Refrigeration	Glass Door Display	1 unit	Existing	767.00	15	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Restaurant	Refrigeration	Open Display Case	1 unit	Existing	1,438.00	10	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Restaurant	Refrigeration	Icemaker	1 unit	Existing	499.39	9	\$1,056.09	45%	at stock turnover	\$0.33	232.47	206.13	ENERGY STAR
Restaurant	Refrigeration	Vending Machine	1 unit	Existing	92.22	10	\$42.81	45%	at stock turnover	\$0.06	60.94	53.70	EIA 2011-2012 Ref. Case
Restaurant	Food Preparation	Oven	1 unit	Existing	17,196.93	10	\$1,067.99	66%	at stock turnover	\$0.01	364.89	321.57	RTF Workbook
Restaurant	Food Preparation	Fryer	1 unit	Existing	3,280.18	10	\$782.02	76%	at stock turnover	\$0.03	1,136.66	1,001.73	RTF Workbook
Restaurant	Food Preparation	Dishwasher	1 unit	Existing	1,535.09	15	\$564.57	43%	at stock turnover	\$0.04	108.52	97.81	ENERGY STAR
Restaurant	Food Preparation	Hot Food Container	1 unit	Existing	913.35	20	\$490.95	43%	at stock turnover	\$0.05	257.09	232.93	RTF Workbook
Restaurant	Food Preparation	Steamer	1 unit	Existing	75,356.70	9	\$837.45	43%	at stock turnover	\$0.00	588.50	517.50	RTF Workbook
Restaurant	Office Equipment	Desktop Computer	1 unit	Existing	140.62	5	\$0.01	100%	at stock turnover	\$0.00	117.71	95.11	7th Power Plan
Restaurant	Office Equipment	Laptop	1 unit	Existing	41.96	4	\$0.01	100%	at stock turnover	\$0.00	11.64	9.82	7th Power Plan
Restaurant	Office Equipment	Monitor	1 unit	Existing	34.90	5	\$0.01	100%	at stock turnover	\$0.00	7.37	5.95	7th Power Plan
Restaurant	Office Equipment	Server	1 unit	Existing	84.36	4	\$0.01	100%	at stock turnover	\$0.00	88.66	75.52	AEG Research
Restaurant	Office Equipment	Printer/Copier/Fax	1 unit	Existing	253.89	6	\$0.01	100%	at stock turnover	\$0.00	5.47	4.73	ENERGY STAR
Restaurant	Office Equipment	POS Terminal	1 unit	Existing	140.62	5	\$0.01	40%	at stock turnover	\$0.00	54.18	46.10	7th Power Plan
Restaurant	Miscellaneous	Non-HVAC Motors	1 unit	Existing	0.00	15	\$0.00	90%	at stock turnover	\$0.00	0.00	0.00	N/A
Restaurant	Miscellaneous	Pool Pump	1 unit	Existing	0.00	10	\$246.30	0%	at stock turnover	\$0.00	0.00	0.00	Southern California Edison
Restaurant	Miscellaneous	Pool Heater	1 unit	Existing	0.00	15	\$3,546.07	0%	at stock turnover	\$0.00	0.00	0.00	AEG Research

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Restaurant	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Restaurant	Cooling	Air-Cooled Chiller	1 kBTU/hr	New	0.00	20	\$26.36	20%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Restaurant	Cooling	Water-Cooled Chiller	1 kBTU/hr	New	0.00	25	\$12.65	12%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Restaurant	Cooling	RTU	1 kBTU/hr	New	2.24	15	\$6.75	64%	at stock turnover	\$0.33	79.15	70.52	Annual Energy Outlook, 2015
Restaurant	Cooling	Room AC	1 kBTU/hr	New	9.15	15	\$23.62	3%	at stock turnover	\$0.28	11.82	10.53	Annual Energy Outlook, 2015
Restaurant	Cooling	Evaporative AC	11 per TR	New	0.00	15	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	New Buildings Institute Study, 2006
Restaurant	Cooling	Air-Source Heat Pump	1 kBTU/hr	New	4.32	15	\$21.65	3%	at stock turnover	\$0.34	6.77	6.23	Annual Energy Outlook, 2015
Restaurant	Heating	Air-Source Heat Pump	1 kBTU/hr	New	2.58	15	\$21.65	3%	at stock turnover	\$0.34	4.04	3.72	Annual Energy Outlook, 2015
Restaurant	Cooling	Geothermal Heat Pump	1 kBTU/hr	New	13.14	25	\$26.36	2%	at stock turnover	\$0.11	7.85	7.16	Annual Energy Outlook, 2015
Restaurant	Heating	Geothermal Heat Pump	1 kBTU/hr	New	8.27	25	\$26.36	2%	at stock turnover	\$0.11	4.94	4.51	Annual Energy Outlook, 2015
Restaurant	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	1%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Restaurant	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	18%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Restaurant	Ventilation	Ventilation	1000 CFM	New	926.02	20	\$1,219.71	100%	at stock turnover	\$0.12	127.95	117.53	AEG-BEST
Restaurant	Water Heating	Water Heater	65 gallons	New	2,478.06	13	\$3,537.01	45%	at stock turnover	\$0.17	774.60	698.16	7th Power Plan
Restaurant	Interior Lighting	Screw-in	lamps	New	101.21	8	\$3.95	100%	at stock turnover	\$0.00	345.43	319.50	7th Power Plan
Restaurant	Interior Lighting	Linear Lighting	lamps	New	196.46	17	\$52.83	100%	at stock turnover	\$0.02	686.63	592.72	7th Power Plan
Restaurant	Interior Lighting	High-Bay Fixtures	lamps	New	1,744.95	15	\$123.86	100%	at stock turnover	\$0.01	1,663.90	1,430.29	Annual Energy Outlook, 2015
Restaurant	Exterior Lighting	Screw-in	lamps	New	84.34	8	\$3.95	100%	at stock turnover	\$0.00	59.83	55.34	7th Power Plan
Restaurant	Exterior Lighting	Linear Lighting	lamps	New	163.00	17	\$52.83	100%	at stock turnover	\$0.02	148.23	127.96	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Restaurant	Exterior Lighting	Area Lighting	lamps	New	1,310.56	15	\$44.55	100%	at stock turnover	\$0.00	993.70	854.18	Annual Energy Outlook, 2015
Restaurant	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	New	1,507.00	11	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Restaurant	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	New	605.00	15	\$0.00	17%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Restaurant	Refrigeration	Glass Door Display	1 unit	New	767.00	15	\$0.00	93%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Restaurant	Refrigeration	Open Display Case	1 unit	New	1,438.00	10	\$0.00	93%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Restaurant	Refrigeration	Icemaker	1 unit	New	488.61	9	\$1,056.09	54%	at stock turnover	\$0.33	75.19	68.52	ENERGY STAR
Restaurant	Refrigeration	Vending Machine	1 unit	New	92.75	10	\$42.81	54%	at stock turnover	\$0.06	38.91	35.48	EIA 2011-2012 Ref. Case
Restaurant	Food Preparation	Oven	1 unit	New	17,296.56	10	\$1,067.99	79%	at stock turnover	\$0.01	198.03	180.57	RTF Workbook
Restaurant	Food Preparation	Fryer	1 unit	New	3,299.18	10	\$782.02	92%	at stock turnover	\$0.03	711.80	649.02	RTF Workbook
Restaurant	Food Preparation	Dishwasher	1 unit	New	1,543.99	15	\$564.57	52%	at stock turnover	\$0.04	67.84	61.95	ENERGY STAR
Restaurant	Food Preparation	Hot Food Container	1 unit	New	918.64	20	\$490.95	52%	at stock turnover	\$0.05	192.27	175.14	RTF Workbook
Restaurant	Food Preparation	Steamer	1 unit	New	75,793.27	9	\$837.45	52%	at stock turnover	\$0.00	377.37	342.43	RTF Workbook
Restaurant	Office Equipment	Desktop Computer	1 unit	New	140.62	5	\$0.01	125%	at stock turnover	\$0.00	40.67	34.71	7th Power Plan
Restaurant	Office Equipment	Laptop	1 unit	New	41.96	4	\$0.01	125%	at stock turnover	\$0.00	4.42	3.87	7th Power Plan
Restaurant	Office Equipment	Monitor	1 unit	New	34.90	5	\$0.01	125%	at stock turnover	\$0.00	2.55	2.17	7th Power Plan
Restaurant	Office Equipment	Server	1 unit	New	84.36	4	\$0.01	125%	at stock turnover	\$0.00	30.87	27.32	AEG Research
Restaurant	Office Equipment	Printer/Copier/Fax	1 unit	New	253.89	6	\$0.01	125%	at stock turnover	\$0.00	2.37	2.14	ENERGY STAR
Restaurant	Office Equipment	POS Terminal	1 unit	New	141.44	5	\$0.01	44%	at stock turnover	\$0.00	24.82	22.07	7th Power Plan
Restaurant	Miscellaneous	Non-HVAC Motors	1 unit	New	0.00	15	\$0.00	107%	at stock turnover	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Restaurant	Miscellaneous	Pool Pump	1 unit	New	0.00	10	\$246.30	0%	at stock turnover	\$0.00	0.00	0.00	Southern California Edison
Restaurant	Miscellaneous	Pool Heater	1 unit	New	0.00	15	\$3,546.07	0%	at stock turnover	\$0.00	0.00	0.00	AEG Research
Restaurant	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Grocery	Cooling	Air-Cooled Chiller	1 kBTU/hr	Existing	35.56	20	\$26.36	17%	at stock turnover	\$0.07	4.06	3.62	Annual Energy Outlook, 2015
Grocery	Cooling	Water-Cooled Chiller	1 kBTU/hr	Existing	53.31	25	\$12.65	11%	at stock turnover	\$0.02	3.75	3.34	Annual Energy Outlook, 2015
Grocery	Cooling	RTU	1 kBTU/hr	Existing	5.60	15	\$6.75	56%	at stock turnover	\$0.13	105.32	91.68	Annual Energy Outlook, 2015
Grocery	Cooling	Room AC	1 kBTU/hr	Existing	23.71	15	\$23.62	3%	at stock turnover	\$0.11	13.32	11.59	Annual Energy Outlook, 2015
Grocery	Cooling	Evaporative AC	11 per TR	Existing	0.00	15	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	New Buildings Institute Study, 2006
Grocery	Cooling	Air-Source Heat Pump	1 kBTU/hr	Existing	10.10	15	\$21.65	3%	at stock turnover	\$0.17	4.15	3.75	Annual Energy Outlook, 2015
Grocery	Heating	Air-Source Heat Pump	1 kBTU/hr	Existing	3.40	15	\$21.65	3%	at stock turnover	\$0.17	1.40	1.26	Annual Energy Outlook, 2015
Grocery	Cooling	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	2%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Grocery	Heating	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	2%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Grocery	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	1%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Grocery	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	18%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Grocery	Ventilation	Ventilation	1000 CFM	Existing	10,914.64	20	\$1,219.71	100%	at stock turnover	\$0.01	371.97	339.37	AEG-BEST
Grocery	Water Heating	Water Heater	65 gallons	Existing	2,463.77	13	\$3,537.01	45%	at stock turnover	\$0.17	679.44	595.88	7th Power Plan
Grocery	Interior Lighting	Screw-in	lamps	Existing	128.82	8	\$3.95	100%	at stock turnover	\$0.00	112.20	130.65	7th Power Plan
Grocery	Interior Lighting	Linear Lighting	lamps	Existing	237.69	17	\$52.83	100%	at stock turnover	\$0.02	2,414.36	2,043.76	7th Power Plan
Grocery	Interior Lighting	High-Bay Fixtures	lamps	Existing	1,384.55	15	\$123.86	100%	at stock turnover	\$0.01	897.32	725.29	Annual Energy Outlook, 2015

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Grocery	Exterior Lighting	Screw-in	lamps	Existing	79.78	8	\$3.95	100%	at stock turnover	\$0.00	65.11	75.82	7th Power Plan
Grocery	Exterior Lighting	Linear Lighting	lamps	Existing	155.27	17	\$52.83	100%	at stock turnover	\$0.02	183.42	155.26	7th Power Plan
Grocery	Exterior Lighting	Area Lighting	lamps	Existing	1,280.45	15	\$44.55	100%	at stock turnover	\$0.00	848.97	703.20	Annual Energy Outlook, 2015
Grocery	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	Existing	1,507.00	11	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Grocery	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	Existing	605.00	15	\$0.00	14%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Grocery	Refrigeration	Glass Door Display	1 unit	Existing	767.00	15	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Grocery	Refrigeration	Open Display Case	1 unit	Existing	1,438.00	10	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Grocery	Refrigeration	Icemaker	1 unit	Existing	499.39	9	\$1,056.09	45%	at stock turnover	\$0.33	26.98	23.89	ENERGY STAR
Grocery	Refrigeration	Vending Machine	1 unit	Existing	92.22	10	\$42.81	45%	at stock turnover	\$0.06	10.73	9.44	EIA 2011-2012 Ref. Case
Grocery	Food Preparation	Oven	1 unit	Existing	17,196.93	10	\$1,067.99	66%	at stock turnover	\$0.01	9.32	8.21	RTF Workbook
Grocery	Food Preparation	Fryer	1 unit	Existing	3,280.18	10	\$782.02	76%	at stock turnover	\$0.03	104.09	91.62	RTF Workbook
Grocery	Food Preparation	Dishwasher	1 unit	Existing	1,535.09	15	\$564.57	43%	at stock turnover	\$0.04	19.61	17.66	ENERGY STAR
Grocery	Food Preparation	Hot Food Container	1 unit	Existing	913.35	20	\$490.95	43%	at stock turnover	\$0.05	38.74	35.08	RTF Workbook
Grocery	Food Preparation	Steamer	1 unit	Existing	75,356.70	9	\$837.45	43%	at stock turnover	\$0.00	126.62	111.17	RTF Workbook
Grocery	Office Equipment	Desktop Computer	1 unit	Existing	140.62	5	\$0.01	100%	at stock turnover	\$0.00	34.92	28.20	7th Power Plan
Grocery	Office Equipment	Laptop	1 unit	Existing	41.96	4	\$0.01	100%	at stock turnover	\$0.00	2.84	2.40	7th Power Plan
Grocery	Office Equipment	Monitor	1 unit	Existing	34.90	5	\$0.01	100%	at stock turnover	\$0.00	2.19	1.77	7th Power Plan
Grocery	Office Equipment	Server	1 unit	Existing	84.36	4	\$0.01	100%	at stock turnover	\$0.00	19.45	16.49	AEG Research
Grocery	Office Equipment	Printer/Copier/Fax	1 unit	Existing	253.89	6	\$0.01	100%	at stock turnover	\$0.00	0.80	0.69	ENERGY STAR

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Grocery	Office Equipment	POS Terminal	1 unit	Existing	140.62	5	\$0.01	40%	at stock turnover	\$0.00	19.89	16.91	7th Power Plan
Grocery	Miscellaneous	Non-HVAC Motors	1 unit	Existing	0.00	15	\$0.00	90%	at stock turnover	\$0.00	0.00	0.00	N/A
Grocery	Miscellaneous	Pool Pump	1 unit	Existing	0.00	10	\$246.30	0%	at stock turnover	\$0.00	0.00	0.00	Southern California Edison
Grocery	Miscellaneous	Pool Heater	1 unit	Existing	0.00	15	\$3,546.07	0%	at stock turnover	\$0.00	0.00	0.00	AEG Research
Grocery	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Grocery	Cooling	Air-Cooled Chiller	1 kBTU/hr	New	30.25	20	\$26.36	20%	at stock turnover	\$0.08	2.70	2.43	Annual Energy Outlook, 2015
Grocery	Cooling	Water-Cooled Chiller	1 kBTU/hr	New	45.63	25	\$12.65	12%	at stock turnover	\$0.03	2.23	1.98	Annual Energy Outlook, 2015
Grocery	Cooling	RTU	1 kBTU/hr	New	5.12	15	\$6.75	64%	at stock turnover	\$0.14	57.55	51.23	Annual Energy Outlook, 2015
Grocery	Cooling	Room AC	1 kBTU/hr	New	17.65	15	\$23.62	3%	at stock turnover	\$0.15	5.64	5.02	Annual Energy Outlook, 2015
Grocery	Cooling	Evaporative AC	11 per TR	New	0.00	15	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	New Buildings Institute Study, 2006
Grocery	Cooling	Air-Source Heat Pump	1 kBTU/hr	New	6.99	15	\$21.65	3%	at stock turnover	\$0.23	1.71	1.58	Annual Energy Outlook, 2015
Grocery	Heating	Air-Source Heat Pump	1 kBTU/hr	New	3.32	15	\$21.65	3%	at stock turnover	\$0.23	0.82	0.75	Annual Energy Outlook, 2015
Grocery	Cooling	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	2%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Grocery	Heating	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	2%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Grocery	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	1%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Grocery	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	18%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Grocery	Ventilation	Ventilation	1000 CFM	New	9,451.26	20	\$1,219.71	100%	at stock turnover	\$0.01	158.51	145.55	AEG-BEST
Grocery	Water Heating	Water Heater	65 gallons	New	2,478.04	13	\$3,537.01	45%	at stock turnover	\$0.17	343.79	309.72	7th Power Plan
Grocery	Interior Lighting	Screw-in	lamps	New	128.57	8	\$3.95	100%	at stock turnover	\$0.00	57.11	52.85	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Grocery	Interior Lighting	Linear Lighting	lamps	New	241.90	17	\$52.83	100%	at stock turnover	\$0.02	1,163.07	1,002.59	7th Power Plan
Grocery	Interior Lighting	High-Bay Fixtures	lamps	New	1,409.91	15	\$123.86	100%	at stock turnover	\$0.01	520.71	439.23	Annual Energy Outlook, 2015
Grocery	Exterior Lighting	Screw-in	lamps	New	79.63	8	\$3.95	100%	at stock turnover	\$0.00	33.14	30.67	7th Power Plan
Grocery	Exterior Lighting	Linear Lighting	lamps	New	158.02	17	\$52.83	100%	at stock turnover	\$0.02	88.36	76.17	7th Power Plan
Grocery	Exterior Lighting	Area Lighting	lamps	New	1,291.60	15	\$44.55	100%	at stock turnover	\$0.00	490.53	421.09	Annual Energy Outlook, 2015
Grocery	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	New	1,507.00	11	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Grocery	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	New	605.00	15	\$0.00	17%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Grocery	Refrigeration	Glass Door Display	1 unit	New	767.00	15	\$0.00	93%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Grocery	Refrigeration	Open Display Case	1 unit	New	1,438.00	10	\$0.00	93%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Grocery	Refrigeration	Icemaker	1 unit	New	488.61	9	\$1,056.09	54%	at stock turnover	\$0.33	14.08	12.82	ENERGY STAR
Grocery	Refrigeration	Vending Machine	1 unit	New	92.75	10	\$42.81	54%	at stock turnover	\$0.06	5.45	4.97	EIA 2011-2012 Ref. Case
Grocery	Food Preparation	Oven	1 unit	New	17,296.56	10	\$1,067.99	79%	at stock turnover	\$0.01	21.56	19.65	RTF Workbook
Grocery	Food Preparation	Fryer	1 unit	New	3,299.18	10	\$782.02	92%	at stock turnover	\$0.03	73.25	66.77	RTF Workbook
Grocery	Food Preparation	Dishwasher	1 unit	New	1,543.99	15	\$564.57	52%	at stock turnover	\$0.04	13.73	12.53	ENERGY STAR
Grocery	Food Preparation	Hot Food Container	1 unit	New	918.64	20	\$490.95	52%	at stock turnover	\$0.05	32.32	29.43	RTF Workbook
Grocery	Food Preparation	Steamer	1 unit	New	75,793.27	9	\$837.45	52%	at stock turnover	\$0.00	91.47	82.97	RTF Workbook
Grocery	Office Equipment	Desktop Computer	1 unit	New	140.62	5	\$0.01	125%	at stock turnover	\$0.00	13.41	11.43	7th Power Plan
Grocery	Office Equipment	Laptop	1 unit	New	41.96	4	\$0.01	125%	at stock turnover	\$0.00	1.22	1.07	7th Power Plan
Grocery	Office Equipment	Monitor	1 unit	New	34.90	5	\$0.01	125%	at stock turnover	\$0.00	0.84	0.72	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Grocery	Office Equipment	Server	1 unit	New	84.36	4	\$0.01	125%	at stock turnover	\$0.00	7.88	6.93	AEG Research
Grocery	Office Equipment	Printer/Copier/Fax	1 unit	New	253.89	6	\$0.01	125%	at stock turnover	\$0.00	0.39	0.35	ENERGY STAR
Grocery	Office Equipment	POS Terminal	1 unit	New	141.44	5	\$0.01	44%	at stock turnover	\$0.00	9.35	8.30	7th Power Plan
Grocery	Miscellaneous	Non-HVAC Motors	1 unit	New	0.00	15	\$0.00	107%	at stock turnover	\$0.00	0.00	0.00	N/A
Grocery	Miscellaneous	Pool Pump	1 unit	New	0.00	10	\$246.30	0%	at stock turnover	\$0.00	0.00	0.00	Southern California Edison
Grocery	Miscellaneous	Pool Heater	1 unit	New	0.00	15	\$3,546.07	0%	at stock turnover	\$0.00	0.00	0.00	AEG Research
Grocery	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Health	Cooling	Air-Cooled Chiller	1 kBTU/hr	Existing	38.44	20	\$26.36	17%	at stock turnover	\$0.06	454.66	405.06	Annual Energy Outlook, 2015
Health	Cooling	Water-Cooled Chiller	1 kBTU/hr	Existing	65.58	25	\$12.65	11%	at stock turnover	\$0.02	3,102.22	2,763.81	Annual Energy Outlook, 2015
Health	Cooling	RTU	1 kBTU/hr	Existing	5.33	15	\$6.75	56%	at stock turnover	\$0.14	49.28	42.87	Annual Energy Outlook, 2015
Health	Cooling	Room AC	1 kBTU/hr	Existing	22.57	15	\$23.62	3%	at stock turnover	\$0.11	7.32	6.37	Annual Energy Outlook, 2015
Health	Cooling	Evaporative AC	11 per TR	Existing	0.00	15	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	New Buildings Institute Study, 2006
Health	Cooling	Air-Source Heat Pump	1 kBTU/hr	Existing	10.25	15	\$21.65	3%	at stock turnover	\$0.12	6.84	6.19	Annual Energy Outlook, 2015
Health	Heating	Air-Source Heat Pump	1 kBTU/hr	Existing	8.87	15	\$21.65	3%	at stock turnover	\$0.12	5.92	5.36	Annual Energy Outlook, 2015
Health	Cooling	Geothermal Heat Pump	1 kBTU/hr	Existing	24.88	25	\$26.36	2%	at stock turnover	\$0.04	10.11	9.22	Annual Energy Outlook, 2015
Health	Heating	Geothermal Heat Pump	1 kBTU/hr	Existing	29.69	25	\$26.36	2%	at stock turnover	\$0.04	12.06	11.00	Annual Energy Outlook, 2015
Health	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	1%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Health	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	18%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Health	Ventilation	Ventilation	1000 CFM	Existing	8,885.37	20	\$1,219.71	100%	at stock turnover	\$0.01	1,095.40	999.16	AEG-BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Health	Water Heating	Water Heater	65 gallons	Existing	2,463.76	13	\$3,537.01	45%	at stock turnover	\$0.17	1,746.06	1,530.54	7th Power Plan
Health	Interior Lighting	Screw-in	lamps	Existing	120.53	8	\$3.95	100%	at stock turnover	\$0.00	652.37	790.10	7th Power Plan
Health	Interior Lighting	Linear Lighting	lamps	Existing	204.02	17	\$52.83	100%	at stock turnover	\$0.02	6,040.64	5,109.47	7th Power Plan
Health	Interior Lighting	High-Bay Fixtures	lamps	Existing	1,345.04	15	\$123.86	100%	at stock turnover	\$0.01	3,977.42	3,222.08	Annual Energy Outlook, 2015
Health	Exterior Lighting	Screw-in	lamps	Existing	85.24	8	\$3.95	100%	at stock turnover	\$0.00	40.49	49.03	7th Power Plan
Health	Exterior Lighting	Linear Lighting	lamps	Existing	154.38	17	\$52.83	100%	at stock turnover	\$0.02	121.72	102.96	7th Power Plan
Health	Exterior Lighting	Area Lighting	lamps	Existing	1,272.89	15	\$44.55	100%	at stock turnover	\$0.00	967.87	800.94	Annual Energy Outlook, 2015
Health	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	Existing	1,507.00	11	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Health	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	Existing	605.00	15	\$0.00	14%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Health	Refrigeration	Glass Door Display	1 unit	Existing	767.00	15	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Health	Refrigeration	Open Display Case	1 unit	Existing	1,438.00	10	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Health	Refrigeration	Icemaker	1 unit	Existing	499.39	9	\$1,056.09	45%	at stock turnover	\$0.33	12.71	11.26	ENERGY STAR
Health	Refrigeration	Vending Machine	1 unit	Existing	92.22	10	\$42.81	45%	at stock turnover	\$0.06	8.99	7.91	EIA 2011-2012 Ref. Case
Health	Food Preparation	Oven	1 unit	Existing	17,196.93	10	\$1,067.99	66%	at stock turnover	\$0.01	233.56	205.52	RTF Workbook
Health	Food Preparation	Fryer	1 unit	Existing	3,280.18	10	\$782.02	76%	at stock turnover	\$0.03	248.93	219.03	RTF Workbook
Health	Food Preparation	Dishwasher	1 unit	Existing	1,535.09	15	\$564.57	43%	at stock turnover	\$0.04	49.31	44.39	ENERGY STAR
Health	Food Preparation	Hot Food Container	1 unit	Existing	913.35	20	\$490.95	43%	at stock turnover	\$0.05	73.27	66.32	RTF Workbook
Health	Food Preparation	Steamer	1 unit	Existing	75,356.70	9	\$837.45	43%	at stock turnover	\$0.00	871.89	765.12	RTF Workbook
Health	Office Equipment	Desktop Computer	1 unit	Existing	140.62	5	\$0.01	100%	at stock turnover	\$0.00	313.32	252.92	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Health	Office Equipment	Laptop	1 unit	Existing	41.96	4	\$0.01	100%	at stock turnover	\$0.00	15.33	12.93	7th Power Plan
Health	Office Equipment	Monitor	1 unit	Existing	34.90	5	\$0.01	100%	at stock turnover	\$0.00	19.62	15.83	7th Power Plan
Health	Office Equipment	Server	1 unit	Existing	84.36	4	\$0.01	100%	at stock turnover	\$0.00	34.75	29.46	AEG Research
Health	Office Equipment	Printer/Copier/Fax	1 unit	Existing	253.89	6	\$0.01	100%	at stock turnover	\$0.00	7.13	6.15	ENERGY STAR
Health	Office Equipment	POS Terminal	1 unit	Existing	140.62	5	\$0.01	40%	at stock turnover	\$0.00	35.57	30.22	7th Power Plan
Health	Miscellaneous	Non-HVAC Motors	1 unit	Existing	0.00	15	\$0.00	90%	at stock turnover	\$0.00	0.00	0.00	N/A
Health	Miscellaneous	Pool Pump	1 unit	Existing	0.00	10	\$246.30	0%	at stock turnover	\$0.00	0.00	0.00	Southern California Edison
Health	Miscellaneous	Pool Heater	1 unit	Existing	0.00	15	\$3,546.07	0%	at stock turnover	\$0.00	0.00	0.00	AEG Research
Health	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Health	Cooling	Air-Cooled Chiller	1 kBTU/hr	New	28.24	20	\$26.36	20%	at stock turnover	\$0.09	257.53	231.61	Annual Energy Outlook, 2015
Health	Cooling	Water-Cooled Chiller	1 kBTU/hr	New	48.83	25	\$12.65	12%	at stock turnover	\$0.02	1,579.34	1,407.30	Annual Energy Outlook, 2015
Health	Cooling	RTU	1 kBTU/hr	New	4.10	15	\$6.75	64%	at stock turnover	\$0.18	22.37	19.91	Annual Energy Outlook, 2015
Health	Cooling	Room AC	1 kBTU/hr	New	16.79	15	\$23.62	3%	at stock turnover	\$0.15	3.21	2.86	Annual Energy Outlook, 2015
Health	Cooling	Evaporative AC	11 per TR	New	0.00	15	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	New Buildings Institute Study, 2006
Health	Cooling	Air-Source Heat Pump	1 kBTU/hr	New	7.56	15	\$21.65	3%	at stock turnover	\$0.15	3.13	2.87	Annual Energy Outlook, 2015
Health	Heating	Air-Source Heat Pump	1 kBTU/hr	New	8.66	15	\$21.65	3%	at stock turnover	\$0.15	3.58	3.29	Annual Energy Outlook, 2015
Health	Cooling	Geothermal Heat Pump	1 kBTU/hr	New	24.00	25	\$26.36	2%	at stock turnover	\$0.06	6.67	6.08	Annual Energy Outlook, 2015
Health	Heating	Geothermal Heat Pump	1 kBTU/hr	New	14.55	25	\$26.36	2%	at stock turnover	\$0.06	4.04	3.69	Annual Energy Outlook, 2015
Health	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	1%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Health	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	18%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Health	Ventilation	Ventilation	1000 CFM	New	7,694.07	20	\$1,219.71	100%	at stock turnover	\$0.02	868.00	796.88	AEG-BEST
Health	Water Heating	Water Heater	65 gallons	New	2,478.04	13	\$3,537.01	45%	at stock turnover	\$0.17	916.09	825.16	7th Power Plan
Health	Interior Lighting	Screw-in	lamps	New	117.37	8	\$3.95	100%	at stock turnover	\$0.00	342.00	316.56	7th Power Plan
Health	Interior Lighting	Linear Lighting	lamps	New	207.63	17	\$52.83	100%	at stock turnover	\$0.02	3,012.76	2,595.83	7th Power Plan
Health	Interior Lighting	High-Bay Fixtures	lamps	New	1,392.52	15	\$123.86	100%	at stock turnover	\$0.01	2,433.65	2,058.57	Annual Energy Outlook, 2015
Health	Exterior Lighting	Screw-in	lamps	New	83.01	8	\$3.95	100%	at stock turnover	\$0.00	21.22	19.65	7th Power Plan
Health	Exterior Lighting	Linear Lighting	lamps	New	157.12	17	\$52.83	100%	at stock turnover	\$0.02	60.71	52.31	7th Power Plan
Health	Exterior Lighting	Area Lighting	lamps	New	1,283.98	15	\$44.55	100%	at stock turnover	\$0.00	579.24	497.00	Annual Energy Outlook, 2015
Health	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	New	1,507.00	11	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Health	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	New	605.00	15	\$0.00	17%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Health	Refrigeration	Glass Door Display	1 unit	New	767.00	15	\$0.00	93%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Health	Refrigeration	Open Display Case	1 unit	New	1,438.00	10	\$0.00	93%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Health	Refrigeration	Icemaker	1 unit	New	488.61	9	\$1,056.09	54%	at stock turnover	\$0.33	9.96	9.07	ENERGY STAR
Health	Refrigeration	Vending Machine	1 unit	New	92.75	10	\$42.81	54%	at stock turnover	\$0.06	5.16	4.70	EIA 2011-2012 Ref. Case
Health	Food Preparation	Oven	1 unit	New	17,296.56	10	\$1,067.99	79%	at stock turnover	\$0.01	365.40	333.03	RTF Workbook
Health	Food Preparation	Fryer	1 unit	New	3,299.18	10	\$782.02	92%	at stock turnover	\$0.03	181.73	165.63	RTF Workbook
Health	Food Preparation	Dishwasher	1 unit	New	1,543.99	15	\$564.57	52%	at stock turnover	\$0.04	35.75	32.63	ENERGY STAR
Health	Food Preparation	Hot Food Container	1 unit	New	918.64	20	\$490.95	52%	at stock turnover	\$0.05	63.25	57.58	RTF Workbook

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Health	Food Preparation	Steamer	1 unit	New	75,793.27	9	\$837.45	52%	at stock turnover	\$0.00	653.95	593.09	RTF Workbook
Health	Office Equipment	Desktop Computer	1 unit	New	140.62	5	\$0.01	125%	at stock turnover	\$0.00	139.87	119.21	7th Power Plan
Health	Office Equipment	Laptop	1 unit	New	41.96	4	\$0.01	125%	at stock turnover	\$0.00	7.61	6.65	7th Power Plan
Health	Office Equipment	Monitor	1 unit	New	34.90	5	\$0.01	125%	at stock turnover	\$0.00	8.76	7.46	7th Power Plan
Health	Office Equipment	Server	1 unit	New	84.36	4	\$0.01	125%	at stock turnover	\$0.00	16.03	14.09	AEG Research
Health	Office Equipment	Printer/Copier/Fax	1 unit	New	253.89	6	\$0.01	125%	at stock turnover	\$0.00	4.02	3.62	ENERGY STAR
Health	Office Equipment	POS Terminal	1 unit	New	141.44	5	\$0.01	44%	at stock turnover	\$0.00	17.31	15.38	7th Power Plan
Health	Miscellaneous	Non-HVAC Motors	1 unit	New	0.00	15	\$0.00	107%	at stock turnover	\$0.00	0.00	0.00	N/A
Health	Miscellaneous	Pool Pump	1 unit	New	0.00	10	\$246.30	0%	at stock turnover	\$0.00	0.00	0.00	Southern California Edison
Health	Miscellaneous	Pool Heater	1 unit	New	0.00	15	\$3,546.07	0%	at stock turnover	\$0.00	0.00	0.00	AEG Research
Health	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
College	Cooling	Air-Cooled Chiller	1 kBTU/hr	Existing	33.51	20	\$26.36	17%	at stock turnover	\$0.07	1,688.18	1,503.35	Annual Energy Outlook, 2015
College	Cooling	Water-Cooled Chiller	1 kBTU/hr	Existing	0.00	25	\$12.65	11%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
College	Cooling	RTU	1 kBTU/hr	Existing	2.60	15	\$6.75	56%	at stock turnover	\$0.28	254.62	221.35	Annual Energy Outlook, 2015
College	Cooling	Room AC	1 kBTU/hr	Existing	10.99	15	\$23.62	3%	at stock turnover	\$0.23	70.01	60.86	Annual Energy Outlook, 2015
College	Cooling	Evaporative AC	11 per TR	Existing	0.00	15	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	New Buildings Institute Study, 2006
College	Cooling	Air-Source Heat Pump	1 kBTU/hr	Existing	4.99	15	\$21.65	3%	at stock turnover	\$0.21	25.91	23.41	Annual Energy Outlook, 2015
College	Heating	Air-Source Heat Pump	1 kBTU/hr	Existing	6.09	15	\$21.65	3%	at stock turnover	\$0.21	31.61	28.57	Annual Energy Outlook, 2015
College	Cooling	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	2%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
College	Heating	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	2%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
College	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	1%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
College	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	18%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
College	Ventilation	Ventilation	1000 CFM	Existing	2,066.20	20	\$1,219.71	100%	at stock turnover	\$0.06	2,211.37	2,016.29	AEG-BEST
College	Water Heating	Water Heater	65 gallons	Existing	2,463.71	13	\$3,537.01	45%	at stock turnover	\$0.17	1,433.93	1,255.84	7th Power Plan
College	Interior Lighting	Screw-in	lamps	Existing	67.67	8	\$3.95	100%	at stock turnover	\$0.00	222.81	264.37	7th Power Plan
College	Interior Lighting	Linear Lighting	lamps	Existing	114.09	17	\$52.83	100%	at stock turnover	\$0.03	6,576.85	5,555.84	7th Power Plan
College	Interior Lighting	High-Bay Fixtures	lamps	Existing	763.24	15	\$123.86	100%	at stock turnover	\$0.02	4,191.90	3,396.26	Annual Energy Outlook, 2015
College	Exterior Lighting	Screw-in	lamps	Existing	82.42	8	\$3.95	100%	at stock turnover	\$0.00	27.28	32.37	7th Power Plan
College	Exterior Lighting	Linear Lighting	lamps	Existing	144.91	17	\$52.83	100%	at stock turnover	\$0.03	2,252.38	1,902.72	7th Power Plan
College	Exterior Lighting	Area Lighting	lamps	Existing	965.36	15	\$44.55	100%	at stock turnover	\$0.00	818.74	676.49	Annual Energy Outlook, 2015
College	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	Existing	1,507.00	11	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
College	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	Existing	605.00	15	\$0.00	14%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
College	Refrigeration	Glass Door Display	1 unit	Existing	767.00	15	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
College	Refrigeration	Open Display Case	1 unit	Existing	1,438.00	10	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
College	Refrigeration	Icemaker	1 unit	Existing	499.39	9	\$1,056.09	45%	at stock turnover	\$0.33	4.38	3.88	ENERGY STAR
College	Refrigeration	Vending Machine	1 unit	Existing	92.22	10	\$42.81	45%	at stock turnover	\$0.06	4.49	3.95	EIA 2011-2012 Ref. Case
College	Food Preparation	Oven	1 unit	Existing	17,196.93	10	\$1,067.99	66%	at stock turnover	\$0.01	160.07	140.75	RTF Workbook
College	Food Preparation	Fryer	1 unit	Existing	3,280.18	10	\$782.02	76%	at stock turnover	\$0.03	68.76	60.46	RTF Workbook

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
College	Food Preparation	Dishwasher	1 unit	Existing	1,535.09	15	\$564.57	43%	at stock turnover	\$0.04	20.58	18.52	ENERGY STAR
College	Food Preparation	Hot Food Container	1 unit	Existing	913.35	20	\$490.95	43%	at stock turnover	\$0.05	30.62	27.71	RTF Workbook
College	Food Preparation	Steamer	1 unit	Existing	75,356.70	9	\$837.45	43%	at stock turnover	\$0.00	362.91	318.20	RTF Workbook
College	Office Equipment	Desktop Computer	1 unit	Existing	140.62	5	\$0.01	100%	at stock turnover	\$0.00	770.70	621.90	7th Power Plan
College	Office Equipment	Laptop	1 unit	Existing	41.96	4	\$0.01	100%	at stock turnover	\$0.00	28.16	23.74	7th Power Plan
College	Office Equipment	Monitor	1 unit	Existing	34.90	5	\$0.01	100%	at stock turnover	\$0.00	48.25	38.94	7th Power Plan
College	Office Equipment	Server	1 unit	Existing	84.36	4	\$0.01	100%	at stock turnover	\$0.00	84.88	71.94	AEG Research
College	Office Equipment	Printer/Copier/Fax	1 unit	Existing	253.89	6	\$0.01	100%	at stock turnover	\$0.00	21.72	18.73	ENERGY STAR
College	Office Equipment	POS Terminal	1 unit	Existing	140.62	5	\$0.01	40%	at stock turnover	\$0.00	43.49	36.94	7th Power Plan
College	Miscellaneous	Non-HVAC Motors	1 unit	Existing	0.00	15	\$0.00	90%	at stock turnover	\$0.00	0.00	0.00	N/A
College	Miscellaneous	Pool Pump	1 unit	Existing	1,630.69	10	\$246.30	0%	at stock turnover	\$0.02	77.92	70.95	Southern California Edison
College	Miscellaneous	Pool Heater	1 unit	Existing	17,393.75	15	\$3,546.07	0%	at stock turnover	\$0.02	54.42	49.90	AEG Research
College	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
College	Cooling	Air-Cooled Chiller	1 kBtu/hr	New	29.10	20	\$26.36	20%	at stock turnover	\$0.09	1,352.46	1,215.95	Annual Energy Outlook, 2015
College	Cooling	Water-Cooled Chiller	1 kBtu/hr	New	0.00	25	\$12.65	12%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
College	Cooling	RTU	1 kBtu/hr	New	1.91	15	\$6.75	64%	at stock turnover	\$0.38	132.71	118.07	Annual Energy Outlook, 2015
College	Cooling	Room AC	1 kBtu/hr	New	8.51	15	\$23.62	3%	at stock turnover	\$0.30	33.78	30.06	Annual Energy Outlook, 2015
College	Cooling	Evaporative AC	11 per TR	New	0.00	15	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	New Buildings Institute Study, 2006
College	Cooling	Air-Source Heat Pump	1 kBtu/hr	New	3.68	15	\$21.65	3%	at stock turnover	\$0.25	14.19	13.04	Annual Energy Outlook, 2015

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
College	Heating	Air-Source Heat Pump	1 kBTU/hr	New	5.94	15	\$21.65	3%	at stock turnover	\$0.25	22.90	21.05	Annual Energy Outlook, 2015
College	Cooling	Geothermal Heat Pump	1 kBTU/hr	New	11.17	25	\$26.36	2%	at stock turnover	\$0.08	5.43	4.95	Annual Energy Outlook, 2015
College	Heating	Geothermal Heat Pump	1 kBTU/hr	New	21.10	25	\$26.36	2%	at stock turnover	\$0.08	10.27	9.36	Annual Energy Outlook, 2015
College	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	1%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
College	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	18%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
College	Ventilation	Ventilation	1000 CFM	New	2,103.91	20	\$1,219.71	100%	at stock turnover	\$0.05	1,782.02	1,635.60	AEG-BEST
College	Water Heating	Water Heater	65 gallons	New	2,477.98	13	\$3,537.01	45%	at stock turnover	\$0.17	796.89	717.60	7th Power Plan
College	Interior Lighting	Screw-in	lamps	New	65.80	8	\$3.95	100%	at stock turnover	\$0.00	123.36	113.37	7th Power Plan
College	Interior Lighting	Linear Lighting	lamps	New	116.11	17	\$52.83	100%	at stock turnover	\$0.03	3,465.78	2,983.78	7th Power Plan
College	Interior Lighting	High-Bay Fixtures	lamps	New	780.85	15	\$123.86	100%	at stock turnover	\$0.02	2,684.40	2,270.54	Annual Energy Outlook, 2015
College	Exterior Lighting	Screw-in	lamps	New	80.15	8	\$3.95	100%	at stock turnover	\$0.00	15.11	13.88	7th Power Plan
College	Exterior Lighting	Linear Lighting	lamps	New	147.48	17	\$52.83	100%	at stock turnover	\$0.03	1,186.93	1,021.86	7th Power Plan
College	Exterior Lighting	Area Lighting	lamps	New	973.77	15	\$44.55	100%	at stock turnover	\$0.00	518.08	444.19	Annual Energy Outlook, 2015
College	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	New	1,507.00	11	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
College	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	New	605.00	15	\$0.00	17%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
College	Refrigeration	Glass Door Display	1 unit	New	767.00	15	\$0.00	93%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
College	Refrigeration	Open Display Case	1 unit	New	1,438.00	10	\$0.00	93%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
College	Refrigeration	Icemaker	1 unit	New	0.00	9	\$1,056.09	54%	at stock turnover	\$0.00	0.00	0.00	ENERGY STAR
College	Refrigeration	Vending Machine	1 unit	New	92.75	10	\$42.81	54%	at stock turnover	\$0.06	3.47	3.16	EIA 2011-2012 Ref. Case

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
College	Food Preparation	Oven	1 unit	New	17,296.56	10	\$1,067.99	79%	at stock turnover	\$0.01	123.88	112.89	RTF Workbook
College	Food Preparation	Fryer	1 unit	New	3,299.18	10	\$782.02	92%	at stock turnover	\$0.03	53.22	48.49	RTF Workbook
College	Food Preparation	Dishwasher	1 unit	New	1,543.99	15	\$564.57	52%	at stock turnover	\$0.04	15.78	14.40	ENERGY STAR
College	Food Preparation	Hot Food Container	1 unit	New	918.64	20	\$490.95	52%	at stock turnover	\$0.05	27.91	25.40	RTF Workbook
College	Food Preparation	Steamer	1 unit	New	75,793.27	9	\$837.45	52%	at stock turnover	\$0.00	288.95	262.00	RTF Workbook
College	Office Equipment	Desktop Computer	1 unit	New	140.62	5	\$0.01	125%	at stock turnover	\$0.00	362.38	308.74	7th Power Plan
College	Office Equipment	Laptop	1 unit	New	41.96	4	\$0.01	125%	at stock turnover	\$0.00	14.78	12.93	7th Power Plan
College	Office Equipment	Monitor	1 unit	New	34.90	5	\$0.01	125%	at stock turnover	\$0.00	22.69	19.33	7th Power Plan
College	Office Equipment	Server	1 unit	New	84.36	4	\$0.01	125%	at stock turnover	\$0.00	41.51	36.48	AEG Research
College	Office Equipment	Printer/Copier/Fax	1 unit	New	253.89	6	\$0.01	125%	at stock turnover	\$0.00	13.01	11.71	ENERGY STAR
College	Office Equipment	POS Terminal	1 unit	New	141.44	5	\$0.01	44%	at stock turnover	\$0.00	22.38	19.87	7th Power Plan
College	Miscellaneous	Non-HVAC Motors	1 unit	New	0.00	15	\$0.00	107%	at stock turnover	\$0.00	0.00	0.00	N/A
College	Miscellaneous	Pool Pump	1 unit	New	1,640.13	10	\$246.30	0%	at stock turnover	\$0.02	59.61	55.14	Southern California Edison
College	Miscellaneous	Pool Heater	1 unit	New	17,494.52	15	\$3,546.07	0%	at stock turnover	\$0.02	42.77	39.71	AEG Research
College	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
School	Cooling	Air-Cooled Chiller	1 kBTU/hr	Existing	17.50	20	\$26.36	17%	at stock turnover	\$0.14	786.46	700.86	Annual Energy Outlook, 2015
School	Cooling	Water-Cooled Chiller	1 kBTU/hr	Existing	0.00	25	\$12.65	11%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
School	Cooling	RTU	1 kBTU/hr	Existing	1.36	15	\$6.75	56%	at stock turnover	\$0.54	119.03	103.62	Annual Energy Outlook, 2015
School	Cooling	Room AC	1 kBTU/hr	Existing	5.74	15	\$23.62	3%	at stock turnover	\$0.45	32.73	28.49	Annual Energy Outlook, 2015

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
School	Cooling	Evaporative AC	11 per TR	Existing	0.00	15	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	New Buildings Institute Study, 2006
School	Cooling	Air-Source Heat Pump	1 kBTU/hr	Existing	2.61	15	\$21.65	3%	at stock turnover	\$0.36	20.74	18.76	Annual Energy Outlook, 2015
School	Heating	Air-Source Heat Pump	1 kBTU/hr	Existing	3.86	15	\$21.65	3%	at stock turnover	\$0.36	30.77	27.83	Annual Energy Outlook, 2015
School	Cooling	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	2%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
School	Heating	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	2%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
School	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	1%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
School	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	18%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
School	Ventilation	Ventilation	1000 CFM	Existing	1,231.39	20	\$1,219.71	100%	at stock turnover	\$0.09	1,325.35	1,209.19	AEG-BEST
School	Water Heating	Water Heater	65 gallons	Existing	2,463.71	13	\$3,537.01	45%	at stock turnover	\$0.17	794.56	696.84	7th Power Plan
School	Interior Lighting	Screw-in	lamps	Existing	48.98	8	\$3.95	100%	at stock turnover	\$0.00	290.64	342.69	7th Power Plan
School	Interior Lighting	Linear Lighting	lamps	Existing	87.47	17	\$52.83	100%	at stock turnover	\$0.04	5,320.93	4,504.19	7th Power Plan
School	Interior Lighting	High-Bay Fixtures	lamps	Existing	571.83	15	\$123.86	100%	at stock turnover	\$0.02	2,880.91	2,340.92	Annual Energy Outlook, 2015
School	Exterior Lighting	Screw-in	lamps	Existing	84.18	8	\$3.95	100%	at stock turnover	\$0.00	10.06	11.86	7th Power Plan
School	Exterior Lighting	Linear Lighting	lamps	Existing	148.33	17	\$52.83	100%	at stock turnover	\$0.03	2,310.71	1,956.03	7th Power Plan
School	Exterior Lighting	Area Lighting	lamps	Existing	884.25	15	\$44.55	100%	at stock turnover	\$0.01	385.26	319.11	Annual Energy Outlook, 2015
School	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	Existing	1,507.00	11	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
School	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	Existing	605.00	15	\$0.00	14%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
School	Refrigeration	Glass Door Display	1 unit	Existing	767.00	15	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
School	Refrigeration	Open Display Case	1 unit	Existing	1,438.00	10	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
School	Refrigeration	Icemaker	1 unit	Existing	499.39	9	\$1,056.09	45%	at stock turnover	\$0.33	14.39	12.74	ENERGY STAR
School	Refrigeration	Vending Machine	1 unit	Existing	92.22	10	\$42.81	45%	at stock turnover	\$0.06	14.70	12.94	EIA 2011-2012 Ref. Case
School	Food Preparation	Oven	1 unit	Existing	17,196.93	10	\$1,067.99	66%	at stock turnover	\$0.01	298.18	262.48	RTF Workbook
School	Food Preparation	Fryer	1 unit	Existing	3,280.18	10	\$782.02	76%	at stock turnover	\$0.03	115.83	101.96	RTF Workbook
School	Food Preparation	Dishwasher	1 unit	Existing	1,535.09	15	\$564.57	43%	at stock turnover	\$0.04	30.90	27.83	ENERGY STAR
School	Food Preparation	Hot Food Container	1 unit	Existing	913.35	20	\$490.95	43%	at stock turnover	\$0.05	45.88	41.54	RTF Workbook
School	Food Preparation	Steamer	1 unit	Existing	75,356.70	9	\$837.45	43%	at stock turnover	\$0.00	547.29	480.52	RTF Workbook
School	Office Equipment	Desktop Computer	1 unit	Existing	140.62	5	\$0.01	100%	at stock turnover	\$0.00	599.79	484.26	7th Power Plan
School	Office Equipment	Laptop	1 unit	Existing	41.96	4	\$0.01	100%	at stock turnover	\$0.00	29.43	24.82	7th Power Plan
School	Office Equipment	Monitor	1 unit	Existing	34.90	5	\$0.01	100%	at stock turnover	\$0.00	37.55	30.32	7th Power Plan
School	Office Equipment	Server	1 unit	Existing	84.36	4	\$0.01	100%	at stock turnover	\$0.00	133.59	113.29	AEG Research
School	Office Equipment	Printer/Copier/Fax	1 unit	Existing	253.89	6	\$0.01	100%	at stock turnover	\$0.00	13.71	11.84	ENERGY STAR
School	Office Equipment	POS Terminal	1 unit	Existing	140.62	5	\$0.01	40%	at stock turnover	\$0.00	10.10	8.59	7th Power Plan
School	Miscellaneous	Non-HVAC Motors	1 unit	Existing	0.00	15	\$0.00	90%	at stock turnover	\$0.00	0.00	0.00	N/A
School	Miscellaneous	Pool Pump	1 unit	Existing	1,630.69	10	\$246.30	0%	at stock turnover	\$0.02	6.75	6.15	Southern California Edison
School	Miscellaneous	Pool Heater	1 unit	Existing	17,393.75	15	\$3,546.07	0%	at stock turnover	\$0.02	0.98	0.90	AEG Research
School	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
School	Cooling	Air-Cooled Chiller	1 kBTU/hr	New	15.20	20	\$26.36	20%	at stock turnover	\$0.16	534.31	480.61	Annual Energy Outlook, 2015
School	Cooling	Water-Cooled Chiller	1 kBTU/hr	New	0.00	25	\$12.65	12%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
School	Cooling	RTU	1 kBTU/hr	New	1.00	15	\$6.75	64%	at stock turnover	\$0.74	55.00	48.96	Annual Energy Outlook, 2015
School	Cooling	Room AC	1 kBTU/hr	New	4.44	15	\$23.62	3%	at stock turnover	\$0.58	14.42	12.84	Annual Energy Outlook, 2015
School	Cooling	Evaporative AC	11 per TR	New	0.00	15	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	New Buildings Institute Study, 2006
School	Cooling	Air-Source Heat Pump	1 kBTU/hr	New	1.92	15	\$21.65	3%	at stock turnover	\$0.41	10.97	10.09	Annual Energy Outlook, 2015
School	Heating	Air-Source Heat Pump	1 kBTU/hr	New	3.77	15	\$21.65	3%	at stock turnover	\$0.41	21.53	19.80	Annual Energy Outlook, 2015
School	Cooling	Geothermal Heat Pump	1 kBTU/hr	New	5.83	25	\$26.36	2%	at stock turnover	\$0.13	20.68	18.86	Annual Energy Outlook, 2015
School	Heating	Geothermal Heat Pump	1 kBTU/hr	New	13.40	25	\$26.36	2%	at stock turnover	\$0.13	47.50	43.33	Annual Energy Outlook, 2015
School	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	1%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
School	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	18%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
School	Ventilation	Ventilation	1000 CFM	New	1,253.87	20	\$1,219.71	100%	at stock turnover	\$0.09	977.17	897.23	AEG-BEST
School	Water Heating	Water Heater	65 gallons	New	2,477.98	13	\$3,537.01	45%	at stock turnover	\$0.17	402.04	362.19	7th Power Plan
School	Interior Lighting	Screw-in	lamps	New	47.63	8	\$3.95	100%	at stock turnover	\$0.00	147.15	135.19	7th Power Plan
School	Interior Lighting	Linear Lighting	lamps	New	89.02	17	\$52.83	100%	at stock turnover	\$0.04	2,563.25	2,209.58	7th Power Plan
School	Interior Lighting	High-Bay Fixtures	lamps	New	585.02	15	\$123.86	100%	at stock turnover	\$0.02	1,684.41	1,426.81	Annual Energy Outlook, 2015
School	Exterior Lighting	Screw-in	lamps	New	81.86	8	\$3.95	100%	at stock turnover	\$0.00	5.09	4.68	7th Power Plan
School	Exterior Lighting	Linear Lighting	lamps	New	150.96	17	\$52.83	100%	at stock turnover	\$0.03	1,113.14	959.55	7th Power Plan
School	Exterior Lighting	Area Lighting	lamps	New	891.95	15	\$44.55	100%	at stock turnover	\$0.01	222.60	191.09	Annual Energy Outlook, 2015
School	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	New	1,507.00	11	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
School	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	New	605.00	15	\$0.00	17%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
School	Refrigeration	Glass Door Display	1 unit	New	767.00	15	\$0.00	93%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
School	Refrigeration	Open Display Case	1 unit	New	1,438.00	10	\$0.00	93%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
School	Refrigeration	Icemaker	1 unit	New	0.00	9	\$1,056.09	54%	at stock turnover	\$0.00	0.00	0.00	ENERGY STAR
School	Refrigeration	Vending Machine	1 unit	New	92.75	10	\$42.81	54%	at stock turnover	\$0.06	10.35	9.43	EIA 2011-2012 Ref. Case
School	Food Preparation	Oven	1 unit	New	17,296.56	10	\$1,067.99	79%	at stock turnover	\$0.01	209.85	191.28	RTF Workbook
School	Food Preparation	Fryer	1 unit	New	3,299.18	10	\$782.02	92%	at stock turnover	\$0.03	81.52	74.30	RTF Workbook
School	Food Preparation	Dishwasher	1 unit	New	1,543.99	15	\$564.57	52%	at stock turnover	\$0.04	21.63	19.74	ENERGY STAR
School	Food Preparation	Hot Food Container	1 unit	New	918.64	20	\$490.95	52%	at stock turnover	\$0.05	38.27	34.85	RTF Workbook
School	Food Preparation	Steamer	1 unit	New	75,793.27	9	\$837.45	52%	at stock turnover	\$0.00	395.37	358.62	RTF Workbook
School	Office Equipment	Desktop Computer	1 unit	New	140.62	5	\$0.01	125%	at stock turnover	\$0.00	259.11	220.89	7th Power Plan
School	Office Equipment	Laptop	1 unit	New	41.96	4	\$0.01	125%	at stock turnover	\$0.00	14.09	12.33	7th Power Plan
School	Office Equipment	Monitor	1 unit	New	34.90	5	\$0.01	125%	at stock turnover	\$0.00	16.22	13.83	7th Power Plan
School	Office Equipment	Server	1 unit	New	84.36	4	\$0.01	125%	at stock turnover	\$0.00	59.43	52.24	AEG Research
School	Office Equipment	Printer/Copier/Fax	1 unit	New	253.89	6	\$0.01	125%	at stock turnover	\$0.00	7.46	6.72	ENERGY STAR
School	Office Equipment	POS Terminal	1 unit	New	141.44	5	\$0.01	44%	at stock turnover	\$0.00	4.20	3.73	7th Power Plan
School	Miscellaneous	Non-HVAC Motors	1 unit	New	0.00	15	\$0.00	107%	at stock turnover	\$0.00	0.00	0.00	N/A
School	Miscellaneous	Pool Pump	1 unit	New	1,640.13	10	\$246.30	0%	at stock turnover	\$0.02	4.69	4.34	Southern California Edison
School	Miscellaneous	Pool Heater	1 unit	New	17,494.52	15	\$3,546.07	0%	at stock turnover	\$0.02	0.70	0.65	AEG Research
School	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Lodging	Cooling	Air-Cooled Chiller	1 kBTU/hr	Existing	5.86	20	\$26.36	17%	at stock turnover	\$0.42	16.61	14.82	Annual Energy Outlook, 2015
Lodging	Cooling	Water-Cooled Chiller	1 kBTU/hr	Existing	10.16	25	\$12.65	11%	at stock turnover	\$0.11	104.46	93.20	Annual Energy Outlook, 2015
Lodging	Cooling	RTU	1 kBTU/hr	Existing	2.43	15	\$6.75	56%	at stock turnover	\$0.30	64.77	56.49	Annual Energy Outlook, 2015
Lodging	Cooling	Room AC	1 kBTU/hr	Existing	10.08	15	\$23.62	3%	at stock turnover	\$0.25	660.26	575.92	Annual Energy Outlook, 2015
Lodging	Cooling	Evaporative AC	11 per TR	Existing	0.00	15	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	New Buildings Institute Study, 2006
Lodging	Cooling	Air-Source Heat Pump	1 kBTU/hr	Existing	4.73	15	\$21.65	3%	at stock turnover	\$0.27	13.48	12.21	Annual Energy Outlook, 2015
Lodging	Heating	Air-Source Heat Pump	1 kBTU/hr	Existing	3.91	15	\$21.65	3%	at stock turnover	\$0.27	11.13	10.08	Annual Energy Outlook, 2015
Lodging	Cooling	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	2%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Lodging	Heating	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	2%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Lodging	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	1%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Lodging	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	18%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Lodging	Ventilation	Ventilation	1000 CFM	Existing	2,893.46	20	\$1,219.71	100%	at stock turnover	\$0.04	1,016.05	927.89	AEG-BEST
Lodging	Water Heating	Water Heater	65 gallons	Existing	2,463.74	13	\$3,537.01	45%	at stock turnover	\$0.17	3,423.65	3,008.88	7th Power Plan
Lodging	Interior Lighting	Screw-in	lamps	Existing	57.83	8	\$3.95	100%	at stock turnover	\$0.00	1,995.24	2,337.77	7th Power Plan
Lodging	Interior Lighting	Linear Lighting	lamps	Existing	95.53	17	\$52.83	100%	at stock turnover	\$0.04	1,303.85	1,107.16	7th Power Plan
Lodging	Interior Lighting	High-Bay Fixtures	lamps	Existing	773.35	15	\$123.86	100%	at stock turnover	\$0.02	4,997.20	4,078.96	Annual Energy Outlook, 2015
Lodging	Exterior Lighting	Screw-in	lamps	Existing	83.43	8	\$3.95	100%	at stock turnover	\$0.00	78.58	92.07	7th Power Plan
Lodging	Exterior Lighting	Linear Lighting	lamps	Existing	151.24	17	\$52.83	100%	at stock turnover	\$0.02	73.17	62.13	7th Power Plan
Lodging	Exterior Lighting	Area Lighting	lamps	Existing	1,335.14	15	\$44.55	100%	at stock turnover	\$0.00	5,197.09	4,320.68	Annual Energy Outlook, 2015

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Lodging	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	Existing	1,507.00	11	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Lodging	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	Existing	605.00	15	\$0.00	14%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Lodging	Refrigeration	Glass Door Display	1 unit	Existing	767.00	15	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Lodging	Refrigeration	Open Display Case	1 unit	Existing	1,438.00	10	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Lodging	Refrigeration	Icemaker	1 unit	Existing	499.39	9	\$1,056.09	45%	at stock turnover	\$0.33	30.68	27.22	ENERGY STAR
Lodging	Refrigeration	Vending Machine	1 unit	Existing	92.22	10	\$42.81	45%	at stock turnover	\$0.06	35.43	31.24	EIA 2011-2012 Ref. Case
Lodging	Food Preparation	Oven	1 unit	Existing	17,196.93	10	\$1,067.99	66%	at stock turnover	\$0.01	81.06	71.47	RTF Workbook
Lodging	Food Preparation	Fryer	1 unit	Existing	3,280.18	10	\$782.02	76%	at stock turnover	\$0.03	109.98	96.97	RTF Workbook
Lodging	Food Preparation	Dishwasher	1 unit	Existing	1,535.09	15	\$564.57	43%	at stock turnover	\$0.04	46.84	42.23	ENERGY STAR
Lodging	Food Preparation	Hot Food Container	1 unit	Existing	913.35	20	\$490.95	43%	at stock turnover	\$0.05	69.30	62.80	RTF Workbook
Lodging	Food Preparation	Steamer	1 unit	Existing	75,356.70	9	\$837.45	43%	at stock turnover	\$0.00	835.06	734.70	RTF Workbook
Lodging	Office Equipment	Desktop Computer	1 unit	Existing	140.62	5	\$0.01	100%	at stock turnover	\$0.00	193.71	156.56	7th Power Plan
Lodging	Office Equipment	Laptop	1 unit	Existing	41.96	4	\$0.01	100%	at stock turnover	\$0.00	23.99	20.26	7th Power Plan
Lodging	Office Equipment	Monitor	1 unit	Existing	34.90	5	\$0.01	100%	at stock turnover	\$0.00	12.13	9.80	7th Power Plan
Lodging	Office Equipment	Server	1 unit	Existing	84.36	4	\$0.01	100%	at stock turnover	\$0.00	109.59	93.00	AEG Research
Lodging	Office Equipment	Printer/Copier/Fax	1 unit	Existing	253.89	6	\$0.01	100%	at stock turnover	\$0.00	4.53	3.92	ENERGY STAR
Lodging	Office Equipment	POS Terminal	1 unit	Existing	140.62	5	\$0.01	40%	at stock turnover	\$0.00	26.21	22.32	7th Power Plan
Lodging	Miscellaneous	Non-HVAC Motors	1 unit	Existing	0.00	15	\$0.00	90%	at stock turnover	\$0.00	0.00	0.00	N/A
Lodging	Miscellaneous	Pool Pump	1 unit	Existing	1,630.69	10	\$246.30	0%	at stock turnover	\$0.02	36.84	33.61	Southern California Edison

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Lodging	Miscellaneous	Pool Heater	1 unit	Existing	17,393.75	15	\$3,546.07	0%	at stock turnover	\$0.02	22.60	20.75	AEG Research
Lodging	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Lodging	Cooling	Air-Cooled Chiller	1 kBTU/hr	New	5.33	20	\$26.36	20%	at stock turnover	\$0.47	11.59	10.43	Annual Energy Outlook, 2015
Lodging	Cooling	Water-Cooled Chiller	1 kBTU/hr	New	9.30	25	\$12.65	12%	at stock turnover	\$0.13	65.13	58.11	Annual Energy Outlook, 2015
Lodging	Cooling	RTU	1 kBTU/hr	New	2.46	15	\$6.75	64%	at stock turnover	\$0.30	38.18	34.02	Annual Energy Outlook, 2015
Lodging	Cooling	Room AC	1 kBTU/hr	New	7.50	15	\$23.62	3%	at stock turnover	\$0.34	286.61	255.42	Annual Energy Outlook, 2015
Lodging	Cooling	Evaporative AC	11 per TR	New	0.00	15	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	New Buildings Institute Study, 2006
Lodging	Cooling	Air-Source Heat Pump	1 kBTU/hr	New	4.78	15	\$21.65	3%	at stock turnover	\$0.28	8.07	7.43	Annual Energy Outlook, 2015
Lodging	Heating	Air-Source Heat Pump	1 kBTU/hr	New	3.50	15	\$21.65	3%	at stock turnover	\$0.28	5.90	5.43	Annual Energy Outlook, 2015
Lodging	Cooling	Geothermal Heat Pump	1 kBTU/hr	New	17.56	25	\$26.36	2%	at stock turnover	\$0.09	11.79	10.76	Annual Energy Outlook, 2015
Lodging	Heating	Geothermal Heat Pump	1 kBTU/hr	New	10.27	25	\$26.36	2%	at stock turnover	\$0.09	6.89	6.29	Annual Energy Outlook, 2015
Lodging	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	1%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Lodging	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	18%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Lodging	Ventilation	Ventilation	1000 CFM	New	2,445.69	20	\$1,219.71	100%	at stock turnover	\$0.05	540.65	496.71	AEG-BEST
Lodging	Water Heating	Water Heater	65 gallons	New	2,478.02	13	\$3,537.01	45%	at stock turnover	\$0.17	1,476.09	1,330.65	7th Power Plan
Lodging	Interior Lighting	Screw-in	lamps	New	56.65	8	\$3.95	100%	at stock turnover	\$0.00	867.26	799.36	7th Power Plan
Lodging	Interior Lighting	Linear Lighting	lamps	New	97.22	17	\$52.83	100%	at stock turnover	\$0.04	538.45	465.04	7th Power Plan
Lodging	Interior Lighting	High-Bay Fixtures	lamps	New	811.65	15	\$123.86	100%	at stock turnover	\$0.02	2,566.49	2,181.75	Annual Energy Outlook, 2015
Lodging	Exterior Lighting	Screw-in	lamps	New	81.74	8	\$3.95	100%	at stock turnover	\$0.00	34.16	31.48	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Lodging	Exterior Lighting	Linear Lighting	lamps	New	153.92	17	\$52.83	100%	at stock turnover	\$0.02	30.22	26.10	7th Power Plan
Lodging	Exterior Lighting	Area Lighting	lamps	New	1,346.78	15	\$44.55	100%	at stock turnover	\$0.00	2,569.82	2,210.09	Annual Energy Outlook, 2015
Lodging	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	New	1,507.00	11	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Lodging	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	New	605.00	15	\$0.00	17%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Lodging	Refrigeration	Glass Door Display	1 unit	New	767.00	15	\$0.00	93%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Lodging	Refrigeration	Open Display Case	1 unit	New	1,438.00	10	\$0.00	93%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Lodging	Refrigeration	Icemaker	1 unit	New	488.61	9	\$1,056.09	54%	at stock turnover	\$0.33	19.02	17.34	ENERGY STAR
Lodging	Refrigeration	Vending Machine	1 unit	New	92.75	10	\$42.81	54%	at stock turnover	\$0.06	19.68	17.95	EIA 2011-2012 Ref. Case
Lodging	Food Preparation	Oven	1 unit	New	17,296.56	10	\$1,067.99	79%	at stock turnover	\$0.01	43.62	39.78	RTF Workbook
Lodging	Food Preparation	Fryer	1 unit	New	3,299.18	10	\$782.02	92%	at stock turnover	\$0.03	61.10	55.72	RTF Workbook
Lodging	Food Preparation	Dishwasher	1 unit	New	1,543.99	15	\$564.57	52%	at stock turnover	\$0.04	26.02	23.77	ENERGY STAR
Lodging	Food Preparation	Hot Food Container	1 unit	New	918.64	20	\$490.95	52%	at stock turnover	\$0.05	46.12	42.02	RTF Workbook
Lodging	Food Preparation	Steamer	1 unit	New	75,793.27	9	\$837.45	52%	at stock turnover	\$0.00	474.81	430.91	RTF Workbook
Lodging	Office Equipment	Desktop Computer	1 unit	New	140.62	5	\$0.01	125%	at stock turnover	\$0.00	72.23	61.63	7th Power Plan
Lodging	Office Equipment	Laptop	1 unit	New	41.96	4	\$0.01	125%	at stock turnover	\$0.00	9.82	8.59	7th Power Plan
Lodging	Office Equipment	Monitor	1 unit	New	34.90	5	\$0.01	125%	at stock turnover	\$0.00	4.52	3.86	7th Power Plan
Lodging	Office Equipment	Server	1 unit	New	84.36	4	\$0.01	125%	at stock turnover	\$0.00	41.47	36.48	AEG Research
Lodging	Office Equipment	Printer/Copier/Fax	1 unit	New	253.89	6	\$0.01	125%	at stock turnover	\$0.00	2.09	1.88	ENERGY STAR
Lodging	Office Equipment	POS Terminal	1 unit	New	141.44	5	\$0.01	44%	at stock turnover	\$0.00	10.43	9.27	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Lodging	Miscellaneous	Non-HVAC Motors	1 unit	New	0.00	15	\$0.00	107%	at stock turnover	\$0.00	0.00	0.00	N/A
Lodging	Miscellaneous	Pool Pump	1 unit	New	1,640.13	10	\$246.30	0%	at stock turnover	\$0.02	21.71	20.10	Southern California Edison
Lodging	Miscellaneous	Pool Heater	1 unit	New	17,494.52	15	\$3,546.07	0%	at stock turnover	\$0.02	13.85	12.87	AEG Research
Lodging	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Warehouse	Cooling	Air-Cooled Chiller	1 kBTU/hr	Existing	0.00	20	\$26.36	17%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Warehouse	Cooling	Water-Cooled Chiller	1 kBTU/hr	Existing	0.00	25	\$12.65	11%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Warehouse	Cooling	RTU	1 kBTU/hr	Existing	2.91	15	\$6.75	56%	at stock turnover	\$0.25	107.24	93.41	Annual Energy Outlook, 2015
Warehouse	Cooling	Room AC	1 kBTU/hr	Existing	12.31	15	\$23.62	3%	at stock turnover	\$0.21	29.80	25.96	Annual Energy Outlook, 2015
Warehouse	Cooling	Evaporative AC	11 per TR	Existing	0.00	15	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	New Buildings Institute Study, 2006
Warehouse	Cooling	Air-Source Heat Pump	1 kBTU/hr	Existing	5.60	15	\$21.65	3%	at stock turnover	\$0.16	26.84	24.29	Annual Energy Outlook, 2015
Warehouse	Heating	Air-Source Heat Pump	1 kBTU/hr	Existing	9.20	15	\$21.65	3%	at stock turnover	\$0.16	44.12	39.92	Annual Energy Outlook, 2015
Warehouse	Cooling	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	2%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Warehouse	Heating	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	2%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Warehouse	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	1%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Warehouse	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	18%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Warehouse	Ventilation	Ventilation	1000 CFM	Existing	1,342.57	20	\$1,219.71	100%	at stock turnover	\$0.09	444.86	406.00	AEG-BEST
Warehouse	Water Heating	Water Heater	65 gallons	Existing	2,463.77	13	\$3,537.01	45%	at stock turnover	\$0.17	506.00	444.08	7th Power Plan
Warehouse	Interior Lighting	Screw-in	lamps	Existing	61.61	8	\$3.95	100%	at stock turnover	\$0.00	439.69	663.86	7th Power Plan
Warehouse	Interior Lighting	Linear Lighting	lamps	Existing	86.96	17	\$52.83	100%	at stock turnover	\$0.04	2,141.93	1,815.07	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Warehouse	Interior Lighting	High-Bay Fixtures	lamps	Existing	519.75	15	\$123.86	100%	at stock turnover	\$0.03	11,186.88	9,041.57	Annual Energy Outlook, 2015
Warehouse	Exterior Lighting	Screw-in	lamps	Existing	107.67	8	\$3.95	100%	at stock turnover	\$0.00	134.56	203.16	7th Power Plan
Warehouse	Exterior Lighting	Linear Lighting	lamps	Existing	161.34	17	\$52.83	100%	at stock turnover	\$0.02	578.86	490.53	7th Power Plan
Warehouse	Exterior Lighting	Area Lighting	lamps	Existing	1,169.98	15	\$44.55	100%	at stock turnover	\$0.00	2,908.95	2,412.49	Annual Energy Outlook, 2015
Warehouse	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	Existing	1,507.00	11	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Warehouse	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	Existing	605.00	15	\$0.00	14%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Warehouse	Refrigeration	Glass Door Display	1 unit	Existing	767.00	15	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Warehouse	Refrigeration	Open Display Case	1 unit	Existing	1,438.00	10	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Warehouse	Refrigeration	Icemaker	1 unit	Existing	499.39	9	\$1,056.09	45%	at stock turnover	\$0.33	15.03	13.32	ENERGY STAR
Warehouse	Refrigeration	Vending Machine	1 unit	Existing	92.22	10	\$42.81	45%	at stock turnover	\$0.06	2.98	2.63	EIA 2011-2012 Ref. Case
Warehouse	Food Preparation	Oven	1 unit	Existing	17,196.93	10	\$1,067.99	66%	at stock turnover	\$0.01	2.94	2.59	RTF Workbook
Warehouse	Food Preparation	Fryer	1 unit	Existing	3,280.18	10	\$782.02	76%	at stock turnover	\$0.03	1.26	1.11	RTF Workbook
Warehouse	Food Preparation	Dishwasher	1 unit	Existing	1,535.09	15	\$564.57	43%	at stock turnover	\$0.04	0.38	0.34	ENERGY STAR
Warehouse	Food Preparation	Hot Food Container	1 unit	Existing	913.35	20	\$490.95	43%	at stock turnover	\$0.05	0.56	0.51	RTF Workbook
Warehouse	Food Preparation	Steamer	1 unit	Existing	75,356.70	9	\$837.45	43%	at stock turnover	\$0.00	6.69	5.88	RTF Workbook
Warehouse	Office Equipment	Desktop Computer	1 unit	Existing	140.62	5	\$0.01	100%	at stock turnover	\$0.00	162.54	131.27	7th Power Plan
Warehouse	Office Equipment	Laptop	1 unit	Existing	41.96	4	\$0.01	100%	at stock turnover	\$0.00	16.01	13.51	7th Power Plan
Warehouse	Office Equipment	Monitor	1 unit	Existing	34.90	5	\$0.01	100%	at stock turnover	\$0.00	10.18	8.22	7th Power Plan
Warehouse	Office Equipment	Server	1 unit	Existing	84.36	4	\$0.01	100%	at stock turnover	\$0.00	168.52	143.01	AEG Research

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Warehouse	Office Equipment	Printer/Copier/Fax	1 unit	Existing	253.89	6	\$0.01	100%	at stock turnover	\$0.00	3.74	3.23	ENERGY STAR
Warehouse	Office Equipment	POS Terminal	1 unit	Existing	140.62	5	\$0.01	40%	at stock turnover	\$0.00	57.56	48.95	7th Power Plan
Warehouse	Miscellaneous	Non-HVAC Motors	1 unit	Existing	0.00	15	\$0.00	90%	at stock turnover	\$0.00	0.00	0.00	N/A
Warehouse	Miscellaneous	Pool Pump	1 unit	Existing	0.00	10	\$246.30	0%	at stock turnover	\$0.00	0.00	0.00	Southern California Edison
Warehouse	Miscellaneous	Pool Heater	1 unit	Existing	0.00	15	\$3,546.07	0%	at stock turnover	\$0.00	0.00	0.00	AEG Research
Warehouse	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Warehouse	Cooling	Air-Cooled Chiller	1 kBTU/hr	New	0.00	20	\$26.36	20%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Warehouse	Cooling	Water-Cooled Chiller	1 kBTU/hr	New	0.00	25	\$12.65	12%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Warehouse	Cooling	RTU	1 kBTU/hr	New	2.48	15	\$6.75	64%	at stock turnover	\$0.30	49.61	44.18	Annual Energy Outlook, 2015
Warehouse	Cooling	Room AC	1 kBTU/hr	New	9.16	15	\$23.62	3%	at stock turnover	\$0.28	12.01	10.69	Annual Energy Outlook, 2015
Warehouse	Cooling	Evaporative AC	11 per TR	New	0.00	15	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	New Buildings Institute Study, 2006
Warehouse	Cooling	Air-Source Heat Pump	1 kBTU/hr	New	4.75	15	\$21.65	3%	at stock turnover	\$0.17	12.94	11.90	Annual Energy Outlook, 2015
Warehouse	Heating	Air-Source Heat Pump	1 kBTU/hr	New	8.98	15	\$21.65	3%	at stock turnover	\$0.17	24.46	22.50	Annual Energy Outlook, 2015
Warehouse	Cooling	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	2%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Warehouse	Heating	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	2%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Warehouse	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	1%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Warehouse	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	18%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Warehouse	Ventilation	Ventilation	1000 CFM	New	1,162.56	20	\$1,219.71	100%	at stock turnover	\$0.10	223.25	205.03	AEG-BEST
Warehouse	Water Heating	Water Heater	65 gallons	New	2,478.04	13	\$3,537.01	45%	at stock turnover	\$0.17	243.18	219.13	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Warehouse	Interior Lighting	Screw-in	lamps	New	59.41	8	\$3.95	100%	at stock turnover	\$0.00	211.98	209.98	7th Power Plan
Warehouse	Interior Lighting	Linear Lighting	lamps	New	88.50	17	\$52.83	100%	at stock turnover	\$0.04	982.08	847.12	7th Power Plan
Warehouse	Interior Lighting	High-Bay Fixtures	lamps	New	528.87	15	\$123.86	100%	at stock turnover	\$0.03	6,183.67	5,214.44	Annual Energy Outlook, 2015
Warehouse	Exterior Lighting	Screw-in	lamps	New	103.82	8	\$3.95	100%	at stock turnover	\$0.00	64.87	64.26	7th Power Plan
Warehouse	Exterior Lighting	Linear Lighting	lamps	New	164.20	17	\$52.83	100%	at stock turnover	\$0.02	265.41	228.93	7th Power Plan
Warehouse	Exterior Lighting	Area Lighting	lamps	New	1,180.17	15	\$44.55	100%	at stock turnover	\$0.00	1,598.79	1,373.32	Annual Energy Outlook, 2015
Warehouse	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	New	1,507.00	11	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Warehouse	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	New	605.00	15	\$0.00	17%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Warehouse	Refrigeration	Glass Door Display	1 unit	New	767.00	15	\$0.00	93%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Warehouse	Refrigeration	Open Display Case	1 unit	New	1,438.00	10	\$0.00	93%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Warehouse	Refrigeration	Icemaker	1 unit	New	488.61	9	\$1,056.09	54%	at stock turnover	\$0.33	8.82	8.04	ENERGY STAR
Warehouse	Refrigeration	Vending Machine	1 unit	New	92.75	10	\$42.81	54%	at stock turnover	\$0.06	1.71	1.56	EIA 2011-2012 Ref. Case
Warehouse	Food Preparation	Oven	1 unit	New	17,296.56	10	\$1,067.99	79%	at stock turnover	\$0.01	1.68	1.53	RTF Workbook
Warehouse	Food Preparation	Fryer	1 unit	New	3,299.18	10	\$782.02	92%	at stock turnover	\$0.03	0.66	0.60	RTF Workbook
Warehouse	Food Preparation	Dishwasher	1 unit	New	1,543.99	15	\$564.57	52%	at stock turnover	\$0.04	0.21	0.20	ENERGY STAR
Warehouse	Food Preparation	Hot Food Container	1 unit	New	918.64	20	\$490.95	52%	at stock turnover	\$0.05	0.35	0.32	RTF Workbook
Warehouse	Food Preparation	Steamer	1 unit	New	75,793.27	9	\$837.45	52%	at stock turnover	\$0.00	3.60	3.27	RTF Workbook
Warehouse	Office Equipment	Desktop Computer	1 unit	New	140.62	5	\$0.01	125%	at stock turnover	\$0.00	67.01	57.14	7th Power Plan
Warehouse	Office Equipment	Laptop	1 unit	New	41.96	4	\$0.01	125%	at stock turnover	\$0.00	7.29	6.38	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Warehouse	Office Equipment	Monitor	1 unit	New	34.90	5	\$0.01	125%	at stock turnover	\$0.00	4.20	3.58	7th Power Plan
Warehouse	Office Equipment	Server	1 unit	New	84.36	4	\$0.01	125%	at stock turnover	\$0.00	70.58	62.10	AEG Research
Warehouse	Office Equipment	Printer/Copier/Fax	1 unit	New	253.89	6	\$0.01	125%	at stock turnover	\$0.00	1.93	1.74	ENERGY STAR
Warehouse	Office Equipment	POS Terminal	1 unit	New	141.44	5	\$0.01	44%	at stock turnover	\$0.00	25.61	22.76	7th Power Plan
Warehouse	Miscellaneous	Non-HVAC Motors	1 unit	New	0.00	15	\$0.00	107%	at stock turnover	\$0.00	0.00	0.00	N/A
Warehouse	Miscellaneous	Pool Pump	1 unit	New	0.00	10	\$246.30	0%	at stock turnover	\$0.00	0.00	0.00	Southern California Edison
Warehouse	Miscellaneous	Pool Heater	1 unit	New	0.00	15	\$3,546.07	0%	at stock turnover	\$0.00	0.00	0.00	AEG Research
Warehouse	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Warehouse, Controlled Atm.	Cooling	Air-Cooled Chiller	1 kBTU/hr	Existing	15.23	20	\$26.36	17%	at stock turnover	\$0.16	3.46	3.09	Annual Energy Outlook, 2015
Warehouse, Controlled Atm.	Cooling	Water-Cooled Chiller	1 kBTU/hr	Existing	22.72	25	\$12.65	11%	at stock turnover	\$0.05	0.57	0.51	Annual Energy Outlook, 2015
Warehouse, Controlled Atm.	Cooling	RTU	1 kBTU/hr	Existing	2.30	15	\$6.75	56%	at stock turnover	\$0.32	0.82	0.71	Annual Energy Outlook, 2015
Warehouse, Controlled Atm.	Cooling	Room AC	1 kBTU/hr	Existing	9.72	15	\$23.62	3%	at stock turnover	\$0.26	0.21	0.18	Annual Energy Outlook, 2015
Warehouse, Controlled Atm.	Cooling	Evaporative AC	11 per TR	Existing	0.00	15	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	New Buildings Institute Study, 2006
Warehouse, Controlled Atm.	Cooling	Air-Source Heat Pump	1 kBTU/hr	Existing	4.42	15	\$21.65	3%	at stock turnover	\$0.20	0.11	0.10	Annual Energy Outlook, 2015
Warehouse, Controlled Atm.	Heating	Air-Source Heat Pump	1 kBTU/hr	Existing	7.53	15	\$21.65	3%	at stock turnover	\$0.20	0.19	0.17	Annual Energy Outlook, 2015
Warehouse, Controlled Atm.	Cooling	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	2%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Warehouse, Controlled Atm.	Heating	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	2%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Warehouse, Controlled Atm.	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	1%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Warehouse, Controlled Atm.	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	18%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Warehouse, Controlled Atm.	Ventilation	Ventilation	1000 CFM	Existing	5,863.74	20	\$1,219.71	100%	at stock turnover	\$0.02	14.54	13.27	AEG-BEST
Warehouse, Controlled Atm.	Water Heating	Water Heater	65 gallons	Existing	2,463.77	13	\$3,537.01	45%	at stock turnover	\$0.17	11.39	10.00	7th Power Plan
Warehouse, Controlled Atm.	Interior Lighting	Screw-in	lamps	Existing	61.61	8	\$3.95	100%	at stock turnover	\$0.00	3.29	4.97	7th Power Plan
Warehouse, Controlled Atm.	Interior Lighting	Linear Lighting	lamps	Existing	86.96	17	\$52.83	100%	at stock turnover	\$0.04	16.03	13.59	7th Power Plan
Warehouse, Controlled Atm.	Interior Lighting	High-Bay Fixtures	lamps	Existing	519.75	15	\$123.86	100%	at stock turnover	\$0.03	83.74	67.68	Annual Energy Outlook, 2015
Warehouse, Controlled Atm.	Exterior Lighting	Screw-in	lamps	Existing	107.67	8	\$3.95	100%	at stock turnover	\$0.00	1.01	1.52	7th Power Plan
Warehouse, Controlled Atm.	Exterior Lighting	Linear Lighting	lamps	Existing	161.34	17	\$52.83	100%	at stock turnover	\$0.02	4.33	3.67	7th Power Plan
Warehouse, Controlled Atm.	Exterior Lighting	Area Lighting	lamps	Existing	1,169.98	15	\$44.55	100%	at stock turnover	\$0.00	21.78	18.06	Annual Energy Outlook, 2015
Warehouse, Controlled Atm.	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	Existing	1,507.00	11	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Warehouse, Controlled Atm.	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	Existing	605.00	15	\$0.00	14%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Warehouse, Controlled Atm.	Refrigeration	Glass Door Display	1 unit	Existing	767.00	15	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Warehouse, Controlled Atm.	Refrigeration	Open Display Case	1 unit	Existing	1,438.00	10	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Warehouse, Controlled Atm.	Refrigeration	Icemaker	1 unit	Existing	499.39	9	\$1,056.09	45%	at stock turnover	\$0.33	9.96	8.82	ENERGY STAR
Warehouse, Controlled Atm.	Refrigeration	Vending Machine	1 unit	Existing	92.22	10	\$42.81	45%	at stock turnover	\$0.06	1.98	1.74	EIA 2011-2012 Ref. Case
Warehouse, Controlled Atm.	Food Preparation	Oven	1 unit	Existing	17,196.93	10	\$1,067.99	66%	at stock turnover	\$0.01	1.00	0.88	RTF Workbook
Warehouse, Controlled Atm.	Food Preparation	Fryer	1 unit	Existing	3,280.18	10	\$782.02	76%	at stock turnover	\$0.03	0.43	0.38	RTF Workbook
Warehouse, Controlled Atm.	Food Preparation	Dishwasher	1 unit	Existing	1,535.09	15	\$564.57	43%	at stock turnover	\$0.04	0.13	0.12	ENERGY STAR
Warehouse, Controlled Atm.	Food Preparation	Hot Food Container	1 unit	Existing	913.35	20	\$490.95	43%	at stock turnover	\$0.05	0.19	0.17	RTF Workbook
Warehouse, Controlled Atm.	Food Preparation	Steamer	1 unit	Existing	75,356.70	9	\$837.45	43%	at stock turnover	\$0.00	2.27	1.99	RTF Workbook

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Warehouse, Controlled Atm.	Office Equipment	Desktop Computer	1 unit	Existing	140.62	5	\$0.01	100%	at stock turnover	\$0.00	1.38	1.12	7th Power Plan
Warehouse, Controlled Atm.	Office Equipment	Laptop	1 unit	Existing	41.96	4	\$0.01	100%	at stock turnover	\$0.00	0.14	0.12	7th Power Plan
Warehouse, Controlled Atm.	Office Equipment	Monitor	1 unit	Existing	34.90	5	\$0.01	100%	at stock turnover	\$0.00	0.09	0.07	7th Power Plan
Warehouse, Controlled Atm.	Office Equipment	Server	1 unit	Existing	84.36	4	\$0.01	100%	at stock turnover	\$0.00	1.44	1.22	AEG Research
Warehouse, Controlled Atm.	Office Equipment	Printer/Copier/Fax	1 unit	Existing	253.89	6	\$0.01	100%	at stock turnover	\$0.00	0.03	0.03	ENERGY STAR
Warehouse, Controlled Atm.	Office Equipment	POS Terminal	1 unit	Existing	140.62	5	\$0.01	40%	at stock turnover	\$0.00	0.49	0.42	7th Power Plan
Warehouse, Controlled Atm.	Miscellaneous	Non-HVAC Motors	1 unit	Existing	0.00	15	\$0.00	90%	at stock turnover	\$0.00	0.00	0.00	N/A
Warehouse, Controlled Atm.	Miscellaneous	Pool Pump	1 unit	Existing	0.00	10	\$246.30	0%	at stock turnover	\$0.00	0.00	0.00	Southern California Edison
Warehouse, Controlled Atm.	Miscellaneous	Pool Heater	1 unit	Existing	0.00	15	\$3,546.07	0%	at stock turnover	\$0.00	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Warehouse, Controlled Atm.	Cooling	Air-Cooled Chiller	1 kBTU/hr	New	12.95	20	\$26.36	20%	at stock turnover	\$0.19	2.09	1.88	Annual Energy Outlook, 2015
Warehouse, Controlled Atm.	Cooling	Water-Cooled Chiller	1 kBTU/hr	New	19.45	25	\$12.65	12%	at stock turnover	\$0.06	0.31	0.28	Annual Energy Outlook, 2015
Warehouse, Controlled Atm.	Cooling	RTU	1 kBTU/hr	New	1.96	15	\$6.75	64%	at stock turnover	\$0.37	0.38	0.34	Annual Energy Outlook, 2015
Warehouse, Controlled Atm.	Cooling	Room AC	1 kBTU/hr	New	7.23	15	\$23.62	3%	at stock turnover	\$0.36	0.08	0.07	Annual Energy Outlook, 2015
Warehouse, Controlled Atm.	Cooling	Evaporative AC	11 per TR	New	0.00	15	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	New Buildings Institute Study, 2006
Warehouse, Controlled Atm.	Cooling	Air-Source Heat Pump	1 kBTU/hr	New	3.75	15	\$21.65	3%	at stock turnover	\$0.21	0.05	0.05	Annual Energy Outlook, 2015
Warehouse, Controlled Atm.	Heating	Air-Source Heat Pump	1 kBTU/hr	New	7.35	15	\$21.65	3%	at stock turnover	\$0.21	0.10	0.09	Annual Energy Outlook, 2015
Warehouse, Controlled Atm.	Cooling	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	2%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Warehouse, Controlled Atm.	Heating	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	2%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Warehouse, Controlled Atm.	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	1%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Warehouse, Controlled Atm.	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	18%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Warehouse, Controlled Atm.	Ventilation	Ventilation	1000 CFM	New	5,077.56	20	\$1,219.71	100%	at stock turnover	\$0.02	7.30	6.70	AEG-BEST
Warehouse, Controlled Atm.	Water Heating	Water Heater	65 gallons	New	2,478.04	13	\$3,537.01	45%	at stock turnover	\$0.17	5.48	4.93	7th Power Plan
Warehouse, Controlled Atm.	Interior Lighting	Screw-in	lamps	New	59.41	8	\$3.95	100%	at stock turnover	\$0.00	1.59	1.57	7th Power Plan
Warehouse, Controlled Atm.	Interior Lighting	Linear Lighting	lamps	New	88.50	17	\$52.83	100%	at stock turnover	\$0.04	7.35	6.34	7th Power Plan
Warehouse, Controlled Atm.	Interior Lighting	High-Bay Fixtures	lamps	New	528.87	15	\$123.86	100%	at stock turnover	\$0.03	46.29	39.04	Annual Energy Outlook, 2015
Warehouse, Controlled Atm.	Exterior Lighting	Screw-in	lamps	New	103.82	8	\$3.95	100%	at stock turnover	\$0.00	0.49	0.48	7th Power Plan
Warehouse, Controlled Atm.	Exterior Lighting	Linear Lighting	lamps	New	164.20	17	\$52.83	100%	at stock turnover	\$0.02	1.99	1.71	7th Power Plan
Warehouse, Controlled Atm.	Exterior Lighting	Area Lighting	lamps	New	1,180.17	15	\$44.55	100%	at stock turnover	\$0.00	11.97	10.28	Annual Energy Outlook, 2015
Warehouse, Controlled Atm.	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	New	1,507.00	11	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Warehouse, Controlled Atm.	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	New	605.00	15	\$0.00	17%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Warehouse, Controlled Atm.	Refrigeration	Glass Door Display	1 unit	New	767.00	15	\$0.00	93%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Warehouse, Controlled Atm.	Refrigeration	Open Display Case	1 unit	New	1,438.00	10	\$0.00	93%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Warehouse, Controlled Atm.	Refrigeration	Icemaker	1 unit	New	488.61	9	\$1,056.09	54%	at stock turnover	\$0.33	5.84	5.33	ENERGY STAR
Warehouse, Controlled Atm.	Refrigeration	Vending Machine	1 unit	New	92.75	10	\$42.81	54%	at stock turnover	\$0.06	1.13	1.03	EIA 2011-2012 Ref. Case
Warehouse, Controlled Atm.	Food Preparation	Oven	1 unit	New	17,296.56	10	\$1,067.99	79%	at stock turnover	\$0.01	0.57	0.52	RTF Workbook
Warehouse, Controlled Atm.	Food Preparation	Fryer	1 unit	New	3,299.18	10	\$782.02	92%	at stock turnover	\$0.03	0.22	0.20	RTF Workbook
Warehouse, Controlled Atm.	Food Preparation	Dishwasher	1 unit	New	1,543.99	15	\$564.57	52%	at stock turnover	\$0.04	0.07	0.07	ENERGY STAR

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Warehouse, Controlled Atm.	Food Preparation	Hot Food Container	1 unit	New	918.64	20	\$490.95	52%	at stock turnover	\$0.05	0.12	0.11	RTF Workbook
Warehouse, Controlled Atm.	Food Preparation	Steamer	1 unit	New	75,793.27	9	\$837.45	52%	at stock turnover	\$0.00	1.22	1.11	RTF Workbook
Warehouse, Controlled Atm.	Office Equipment	Desktop Computer	1 unit	New	140.62	5	\$0.01	125%	at stock turnover	\$0.00	0.57	0.49	7th Power Plan
Warehouse, Controlled Atm.	Office Equipment	Laptop	1 unit	New	41.96	4	\$0.01	125%	at stock turnover	\$0.00	0.06	0.05	7th Power Plan
Warehouse, Controlled Atm.	Office Equipment	Monitor	1 unit	New	34.90	5	\$0.01	125%	at stock turnover	\$0.00	0.04	0.03	7th Power Plan
Warehouse, Controlled Atm.	Office Equipment	Server	1 unit	New	84.36	4	\$0.01	125%	at stock turnover	\$0.00	0.60	0.53	AEG Research
Warehouse, Controlled Atm.	Office Equipment	Printer/Copier/Fax	1 unit	New	253.89	6	\$0.01	125%	at stock turnover	\$0.00	0.02	0.01	ENERGY STAR
Warehouse, Controlled Atm.	Office Equipment	POS Terminal	1 unit	New	141.44	5	\$0.01	44%	at stock turnover	\$0.00	0.22	0.19	7th Power Plan
Warehouse, Controlled Atm.	Miscellaneous	Non-HVAC Motors	1 unit	New	0.00	15	\$0.00	107%	at stock turnover	\$0.00	0.00	0.00	N/A
Warehouse, Controlled Atm.	Miscellaneous	Pool Pump	1 unit	New	0.00	10	\$246.30	0%	at stock turnover	\$0.00	0.00	0.00	Southern California Edison
Warehouse, Controlled Atm.	Miscellaneous	Pool Heater	1 unit	New	0.00	15	\$3,546.07	0%	at stock turnover	\$0.00	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Data Center	Cooling	Air-Cooled Chiller	1 kBTU/hr	Existing	97.74	20	\$26.36	17%	at stock turnover	\$0.03	0.21	0.19	Annual Energy Outlook, 2015
Data Center	Cooling	Water-Cooled Chiller	1 kBTU/hr	Existing	147.43	25	\$12.65	11%	at stock turnover	\$0.01	0.19	0.17	Annual Energy Outlook, 2015
Data Center	Cooling	RTU	1 kBTU/hr	Existing	14.59	15	\$6.75	56%	at stock turnover	\$0.05	0.12	0.11	Annual Energy Outlook, 2015
Data Center	Cooling	Room AC	1 kBTU/hr	Existing	61.78	15	\$23.62	3%	at stock turnover	\$0.04	0.03	0.02	Annual Energy Outlook, 2015
Data Center	Cooling	Evaporative AC	11 per TR	Existing	0.00	15	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	New Buildings Institute Study, 2006
Data Center	Cooling	Air-Source Heat Pump	1 kBTU/hr	Existing	28.12	15	\$21.65	3%	at stock turnover	\$0.08	0.01	0.01	Annual Energy Outlook, 2015
Data Center	Heating	Air-Source Heat Pump	1 kBTU/hr	Existing	0.71	15	\$21.65	3%	at stock turnover	\$0.08	0.00	0.00	Annual Energy Outlook, 2015

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Data Center	Cooling	Geothermal Heat Pump	1 kBTU/hr	Existing	68.31	25	\$26.36	2%	at stock turnover	\$0.03	0.01	0.01	Annual Energy Outlook, 2015
Data Center	Heating	Geothermal Heat Pump	1 kBTU/hr	Existing	2.75	25	\$26.36	2%	at stock turnover	\$0.03	0.00	0.00	Annual Energy Outlook, 2015
Data Center	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	1%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Data Center	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	18%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Data Center	Ventilation	Ventilation	1000 CFM	Existing	4,541.29	20	\$1,219.71	100%	at stock turnover	\$0.03	0.85	0.78	AEG-BEST
Data Center	Water Heating	Water Heater	65 gallons	Existing	2,463.77	13	\$3,537.01	45%	at stock turnover	\$0.17	0.03	0.03	7th Power Plan
Data Center	Interior Lighting	Screw-in	lamps	Existing	75.98	8	\$3.95	100%	at stock turnover	\$0.00	0.03	0.05	7th Power Plan
Data Center	Interior Lighting	Linear Lighting	lamps	Existing	107.86	17	\$52.83	100%	at stock turnover	\$0.03	0.34	0.29	7th Power Plan
Data Center	Interior Lighting	High-Bay Fixtures	lamps	Existing	684.50	15	\$123.86	100%	at stock turnover	\$0.02	0.24	0.19	Annual Energy Outlook, 2015
Data Center	Exterior Lighting	Screw-in	lamps	Existing	99.48	8	\$3.95	100%	at stock turnover	\$0.00	0.00	0.01	7th Power Plan
Data Center	Exterior Lighting	Linear Lighting	lamps	Existing	140.55	17	\$52.83	100%	at stock turnover	\$0.03	0.02	0.02	7th Power Plan
Data Center	Exterior Lighting	Area Lighting	lamps	Existing	1,246.66	15	\$44.55	100%	at stock turnover	\$0.00	0.10	0.08	Annual Energy Outlook, 2015
Data Center	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	Existing	1,507.00	11	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Data Center	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	Existing	605.00	15	\$0.00	14%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Data Center	Refrigeration	Glass Door Display	1 unit	Existing	767.00	15	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Data Center	Refrigeration	Open Display Case	1 unit	Existing	1,438.00	10	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Data Center	Refrigeration	Icemaker	1 unit	Existing	499.39	9	\$1,056.09	45%	at stock turnover	\$0.33	0.00	0.00	ENERGY STAR
Data Center	Refrigeration	Vending Machine	1 unit	Existing	92.22	10	\$42.81	45%	at stock turnover	\$0.06	0.00	0.00	EIA 2011-2012 Ref. Case
Data Center	Food Preparation	Oven	1 unit	Existing	17,196.93	10	\$1,067.99	66%	at stock turnover	\$0.01	0.00	0.00	RTF Workbook

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Data Center	Food Preparation	Fryer	1 unit	Existing	3,280.18	10	\$782.02	76%	at stock turnover	\$0.03	0.00	0.00	RTF Workbook
Data Center	Food Preparation	Dishwasher	1 unit	Existing	1,535.09	15	\$564.57	43%	at stock turnover	\$0.04	0.00	0.00	ENERGY STAR
Data Center	Food Preparation	Hot Food Container	1 unit	Existing	913.35	20	\$490.95	43%	at stock turnover	\$0.05	0.00	0.00	RTF Workbook
Data Center	Food Preparation	Steamer	1 unit	Existing	75,356.70	9	\$837.45	43%	at stock turnover	\$0.00	0.00	0.00	RTF Workbook
Data Center	Office Equipment	Desktop Computer	1 unit	Existing	140.62	5	\$0.01	100%	at stock turnover	\$0.00	0.18	0.15	7th Power Plan
Data Center	Office Equipment	Laptop	1 unit	Existing	41.96	4	\$0.01	100%	at stock turnover	\$0.00	0.01	0.01	7th Power Plan
Data Center	Office Equipment	Monitor	1 unit	Existing	34.90	5	\$0.01	100%	at stock turnover	\$0.00	0.01	0.01	7th Power Plan
Data Center	Office Equipment	Server	1 unit	Existing	84.36	4	\$0.01	100%	at stock turnover	\$0.00	2.06	1.75	AEG Research
Data Center	Office Equipment	Printer/Copier/Fax	1 unit	Existing	253.89	6	\$0.01	100%	at stock turnover	\$0.00	0.00	0.00	ENERGY STAR
Data Center	Office Equipment	POS Terminal	1 unit	Existing	140.62	5	\$0.01	40%	at stock turnover	\$0.00	0.00	0.00	7th Power Plan
Data Center	Miscellaneous	Non-HVAC Motors	1 unit	Existing	0.00	15	\$0.00	90%	at stock turnover	\$0.00	0.00	0.00	N/A
Data Center	Miscellaneous	Pool Pump	1 unit	Existing	0.00	10	\$246.30	0%	at stock turnover	\$0.00	0.00	0.00	Southern California Edison
Data Center	Miscellaneous	Pool Heater	1 unit	Existing	0.00	15	\$3,546.07	0%	at stock turnover	\$0.00	0.00	0.00	AEG Research
Data Center	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Data Center	Cooling	Air-Cooled Chiller	1 kBTU/hr	New	83.15	20	\$26.36	20%	at stock turnover	\$0.03	0.12	0.11	Annual Energy Outlook, 2015
Data Center	Cooling	Water-Cooled Chiller	1 kBTU/hr	New	126.19	25	\$12.65	12%	at stock turnover	\$0.01	0.12	0.11	Annual Energy Outlook, 2015
Data Center	Cooling	RTU	1 kBTU/hr	New	12.46	15	\$6.75	64%	at stock turnover	\$0.06	0.05	0.05	Annual Energy Outlook, 2015
Data Center	Cooling	Room AC	1 kBTU/hr	New	45.97	15	\$23.62	3%	at stock turnover	\$0.06	0.01	0.01	Annual Energy Outlook, 2015
Data Center	Cooling	Evaporative AC	11 per TR	New	0.00	15	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	New Buildings Institute Study, 2006

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Data Center	Cooling	Air-Source Heat Pump	1 kBTU/hr	New	23.85	15	\$21.65	3%	at stock turnover	\$0.10	0.00	0.00	Annual Energy Outlook, 2015
Data Center	Heating	Air-Source Heat Pump	1 kBTU/hr	New	0.70	15	\$21.65	3%	at stock turnover	\$0.10	0.00	0.00	Annual Energy Outlook, 2015
Data Center	Cooling	Geothermal Heat Pump	1 kBTU/hr	New	52.40	25	\$26.36	2%	at stock turnover	\$0.04	0.00	0.00	Annual Energy Outlook, 2015
Data Center	Heating	Geothermal Heat Pump	1 kBTU/hr	New	1.72	25	\$26.36	2%	at stock turnover	\$0.04	0.00	0.00	Annual Energy Outlook, 2015
Data Center	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	1%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Data Center	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	18%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Data Center	Ventilation	Ventilation	1000 CFM	New	3,932.41	20	\$1,219.71	100%	at stock turnover	\$0.03	0.43	0.40	AEG-BEST
Data Center	Water Heating	Water Heater	65 gallons	New	2,478.04	13	\$3,537.01	45%	at stock turnover	\$0.17	0.01	0.01	7th Power Plan
Data Center	Interior Lighting	Screw-in	lamps	New	73.26	8	\$3.95	100%	at stock turnover	\$0.00	0.02	0.02	7th Power Plan
Data Center	Interior Lighting	Linear Lighting	lamps	New	109.77	17	\$52.83	100%	at stock turnover	\$0.03	0.16	0.14	7th Power Plan
Data Center	Interior Lighting	High-Bay Fixtures	lamps	New	696.52	15	\$123.86	100%	at stock turnover	\$0.02	0.13	0.11	Annual Energy Outlook, 2015
Data Center	Exterior Lighting	Screw-in	lamps	New	95.92	8	\$3.95	100%	at stock turnover	\$0.00	0.00	0.00	7th Power Plan
Data Center	Exterior Lighting	Linear Lighting	lamps	New	143.04	17	\$52.83	100%	at stock turnover	\$0.03	0.01	0.01	7th Power Plan
Data Center	Exterior Lighting	Area Lighting	lamps	New	1,257.53	15	\$44.55	100%	at stock turnover	\$0.00	0.05	0.05	Annual Energy Outlook, 2015
Data Center	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	New	1,507.00	11	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Data Center	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	New	605.00	15	\$0.00	17%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Data Center	Refrigeration	Glass Door Display	1 unit	New	767.00	15	\$0.00	93%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Data Center	Refrigeration	Open Display Case	1 unit	New	1,438.00	10	\$0.00	93%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Data Center	Refrigeration	Icemaker	1 unit	New	488.61	9	\$1,056.09	54%	at stock turnover	\$0.33	0.00	0.00	ENERGY STAR

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Data Center	Refrigeration	Vending Machine	1 unit	New	92.75	10	\$42.81	54%	at stock turnover	\$0.06	0.00	0.00	EIA 2011-2012 Ref. Case
Data Center	Food Preparation	Oven	1 unit	New	17,296.56	10	\$1,067.99	79%	at stock turnover	\$0.01	0.00	0.00	RTF Workbook
Data Center	Food Preparation	Fryer	1 unit	New	3,299.18	10	\$782.02	92%	at stock turnover	\$0.03	0.00	0.00	RTF Workbook
Data Center	Food Preparation	Dishwasher	1 unit	New	1,543.99	15	\$564.57	52%	at stock turnover	\$0.04	0.00	0.00	ENERGY STAR
Data Center	Food Preparation	Hot Food Container	1 unit	New	918.64	20	\$490.95	52%	at stock turnover	\$0.05	0.00	0.00	RTF Workbook
Data Center	Food Preparation	Steamer	1 unit	New	75,793.27	9	\$837.45	52%	at stock turnover	\$0.00	0.00	0.00	RTF Workbook
Data Center	Office Equipment	Desktop Computer	1 unit	New	140.62	5	\$0.01	125%	at stock turnover	\$0.00	0.08	0.07	7th Power Plan
Data Center	Office Equipment	Laptop	1 unit	New	41.96	4	\$0.01	125%	at stock turnover	\$0.00	0.00	0.00	7th Power Plan
Data Center	Office Equipment	Monitor	1 unit	New	34.90	5	\$0.01	125%	at stock turnover	\$0.00	0.00	0.00	7th Power Plan
Data Center	Office Equipment	Server	1 unit	New	84.36	4	\$0.01	125%	at stock turnover	\$0.00	0.88	0.78	AEG Research
Data Center	Office Equipment	Printer/Copier/Fax	1 unit	New	253.89	6	\$0.01	125%	at stock turnover	\$0.00	0.00	0.00	ENERGY STAR
Data Center	Office Equipment	POS Terminal	1 unit	New	141.44	5	\$0.01	44%	at stock turnover	\$0.00	0.00	0.00	7th Power Plan
Data Center	Miscellaneous	Non-HVAC Motors	1 unit	New	0.00	15	\$0.00	107%	at stock turnover	\$0.00	0.00	0.00	N/A
Data Center	Miscellaneous	Pool Pump	1 unit	New	0.00	10	\$246.30	0%	at stock turnover	\$0.00	0.00	0.00	Southern California Edison
Data Center	Miscellaneous	Pool Heater	1 unit	New	0.00	15	\$3,546.07	0%	at stock turnover	\$0.00	0.00	0.00	AEG Research
Data Center	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Miscellaneous	Cooling	Air-Cooled Chiller	1 kBTU/hr	Existing	11.45	20	\$26.36	17%	at stock turnover	\$0.22	438.11	390.14	Annual Energy Outlook, 2015
Miscellaneous	Cooling	Water-Cooled Chiller	1 kBTU/hr	Existing	17.16	25	\$12.65	11%	at stock turnover	\$0.07	339.98	302.75	Annual Energy Outlook, 2015
Miscellaneous	Cooling	RTU	1 kBTU/hr	Existing	1.80	15	\$6.75	56%	at stock turnover	\$0.41	481.65	418.71	Annual Energy Outlook, 2015

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Miscellaneous	Cooling	Room AC	1 kBTU/hr	Existing	7.64	15	\$23.62	3%	at stock turnover	\$0.34	182.32	158.50	Annual Energy Outlook, 2015
Miscellaneous	Cooling	Evaporative AC	11 per TR	Existing	0.00	15	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	New Buildings Institute Study, 2006
Miscellaneous	Cooling	Air-Source Heat Pump	1 kBTU/hr	Existing	3.47	15	\$21.65	3%	at stock turnover	\$0.35	39.29	35.50	Annual Energy Outlook, 2015
Miscellaneous	Heating	Air-Source Heat Pump	1 kBTU/hr	Existing	3.19	15	\$21.65	3%	at stock turnover	\$0.35	36.03	32.56	Annual Energy Outlook, 2015
Miscellaneous	Cooling	Geothermal Heat Pump	1 kBTU/hr	Existing	8.44	25	\$26.36	2%	at stock turnover	\$0.12	45.99	41.93	Annual Energy Outlook, 2015
Miscellaneous	Heating	Geothermal Heat Pump	1 kBTU/hr	Existing	11.62	25	\$26.36	2%	at stock turnover	\$0.12	63.30	57.72	Annual Energy Outlook, 2015
Miscellaneous	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	1%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Miscellaneous	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	18%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Miscellaneous	Ventilation	Ventilation	1000 CFM	Existing	4,135.81	20	\$1,219.71	100%	at stock turnover	\$0.03	1,223.19	1,115.28	AEG-BEST
Miscellaneous	Water Heating	Water Heater	65 gallons	Existing	2,463.81	13	\$3,537.01	45%	at stock turnover	\$0.17	4,259.85	3,730.82	7th Power Plan
Miscellaneous	Interior Lighting	Screw-in	lamps	Existing	92.42	8	\$3.95	100%	at stock turnover	\$0.00	1,546.24	2,354.86	7th Power Plan
Miscellaneous	Interior Lighting	Linear Lighting	lamps	Existing	138.87	17	\$52.83	100%	at stock turnover	\$0.03	8,024.92	6,779.11	7th Power Plan
Miscellaneous	Interior Lighting	High-Bay Fixtures	lamps	Existing	891.61	15	\$123.86	100%	at stock turnover	\$0.01	8,079.40	6,526.75	Annual Energy Outlook, 2015
Miscellaneous	Exterior Lighting	Screw-in	lamps	Existing	101.72	8	\$3.95	100%	at stock turnover	\$0.00	299.50	456.13	7th Power Plan
Miscellaneous	Exterior Lighting	Linear Lighting	lamps	Existing	160.50	17	\$52.83	100%	at stock turnover	\$0.02	322.94	272.81	7th Power Plan
Miscellaneous	Exterior Lighting	Area Lighting	lamps	Existing	1,322.90	15	\$44.55	100%	at stock turnover	\$0.00	3,934.83	3,251.18	Annual Energy Outlook, 2015
Miscellaneous	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	Existing	1,507.00	11	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Miscellaneous	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	Existing	605.00	15	\$0.00	14%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Miscellaneous	Refrigeration	Glass Door Display	1 unit	Existing	767.00	15	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Miscellaneous	Refrigeration	Open Display Case	1 unit	Existing	1,438.00	10	\$0.00	77%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Miscellaneous	Refrigeration	Icemaker	1 unit	Existing	499.39	9	\$1,056.09	45%	at stock turnover	\$0.33	59.68	52.79	ENERGY STAR
Miscellaneous	Refrigeration	Vending Machine	1 unit	Existing	92.22	10	\$42.81	45%	at stock turnover	\$0.06	23.79	20.92	EIA 2011-2012 Ref. Case
Miscellaneous	Food Preparation	Oven	1 unit	Existing	17,196.93	10	\$1,067.99	66%	at stock turnover	\$0.01	251.32	220.99	RTF Workbook
Miscellaneous	Food Preparation	Fryer	1 unit	Existing	3,280.18	10	\$782.02	76%	at stock turnover	\$0.03	54.80	48.19	RTF Workbook
Miscellaneous	Food Preparation	Dishwasher	1 unit	Existing	1,535.09	15	\$564.57	43%	at stock turnover	\$0.04	8.46	7.61	ENERGY STAR
Miscellaneous	Food Preparation	Hot Food Container	1 unit	Existing	913.35	20	\$490.95	43%	at stock turnover	\$0.05	12.58	11.38	RTF Workbook
Miscellaneous	Food Preparation	Steamer	1 unit	Existing	75,356.70	9	\$837.45	43%	at stock turnover	\$0.00	149.07	130.71	RTF Workbook
Miscellaneous	Office Equipment	Desktop Computer	1 unit	Existing	140.62	5	\$0.01	100%	at stock turnover	\$0.00	510.87	412.24	7th Power Plan
Miscellaneous	Office Equipment	Laptop	1 unit	Existing	41.96	4	\$0.01	100%	at stock turnover	\$0.00	62.22	52.45	7th Power Plan
Miscellaneous	Office Equipment	Monitor	1 unit	Existing	34.90	5	\$0.01	100%	at stock turnover	\$0.00	31.98	25.81	7th Power Plan
Miscellaneous	Office Equipment	Server	1 unit	Existing	84.36	4	\$0.01	100%	at stock turnover	\$0.00	216.65	183.96	AEG Research
Miscellaneous	Office Equipment	Printer/Copier/Fax	1 unit	Existing	253.89	6	\$0.01	100%	at stock turnover	\$0.00	11.52	9.93	ENERGY STAR
Miscellaneous	Office Equipment	POS Terminal	1 unit	Existing	140.62	5	\$0.01	40%	at stock turnover	\$0.00	33.51	28.50	7th Power Plan
Miscellaneous	Miscellaneous	Non-HVAC Motors	1 unit	Existing	0.00	15	\$0.00	90%	at stock turnover	\$0.00	0.00	0.00	N/A
Miscellaneous	Miscellaneous	Pool Pump	1 unit	Existing	1,630.69	10	\$246.30	0%	at stock turnover	\$0.02	2.61	2.37	Southern California Edison
Miscellaneous	Miscellaneous	Pool Heater	1 unit	Existing	17,393.75	15	\$3,546.07	0%	at stock turnover	\$0.02	1.13	1.04	AEG Research
Miscellaneous	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Miscellaneous	Cooling	Air-Cooled Chiller	1 kBTU/hr	New	9.74	20	\$26.36	20%	at stock turnover	\$0.26	412.04	370.46	Annual Energy Outlook, 2015

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Miscellaneous	Cooling	Water-Cooled Chiller	1 kBTU/hr	New	14.69	25	\$12.65	12%	at stock turnover	\$0.08	285.03	253.88	Annual Energy Outlook, 2015
Miscellaneous	Cooling	RTU	1 kBTU/hr	New	1.37	15	\$6.75	64%	at stock turnover	\$0.54	309.37	275.25	Annual Energy Outlook, 2015
Miscellaneous	Cooling	Room AC	1 kBTU/hr	New	5.68	15	\$23.62	3%	at stock turnover	\$0.45	114.84	102.17	Annual Energy Outlook, 2015
Miscellaneous	Cooling	Evaporative AC	11 per TR	New	0.00	15	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	New Buildings Institute Study, 2006
Miscellaneous	Cooling	Air-Source Heat Pump	1 kBTU/hr	New	2.56	15	\$21.65	3%	at stock turnover	\$0.42	25.78	23.70	Annual Energy Outlook, 2015
Miscellaneous	Heating	Air-Source Heat Pump	1 kBTU/hr	New	3.11	15	\$21.65	3%	at stock turnover	\$0.42	31.28	28.76	Annual Energy Outlook, 2015
Miscellaneous	Cooling	Geothermal Heat Pump	1 kBTU/hr	New	8.01	25	\$26.36	2%	at stock turnover	\$0.15	42.79	39.02	Annual Energy Outlook, 2015
Miscellaneous	Heating	Geothermal Heat Pump	1 kBTU/hr	New	8.09	25	\$26.36	2%	at stock turnover	\$0.15	43.19	39.38	Annual Energy Outlook, 2015
Miscellaneous	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	1%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Miscellaneous	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	18%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Miscellaneous	Ventilation	Ventilation	1000 CFM	New	3,854.60	20	\$1,219.71	100%	at stock turnover	\$0.03	890.51	817.34	AEG-BEST
Miscellaneous	Water Heating	Water Heater	65 gallons	New	2,478.08	13	\$3,537.01	45%	at stock turnover	\$0.17	2,367.37	2,131.81	7th Power Plan
Miscellaneous	Interior Lighting	Screw-in	lamps	New	88.23	8	\$3.95	100%	at stock turnover	\$0.00	853.97	841.57	7th Power Plan
Miscellaneous	Interior Lighting	Linear Lighting	lamps	New	141.33	17	\$52.83	100%	at stock turnover	\$0.03	4,228.86	3,640.74	7th Power Plan
Miscellaneous	Interior Lighting	High-Bay Fixtures	lamps	New	893.13	15	\$123.86	100%	at stock turnover	\$0.01	5,074.89	4,279.04	Annual Energy Outlook, 2015
Miscellaneous	Exterior Lighting	Screw-in	lamps	New	97.10	8	\$3.95	100%	at stock turnover	\$0.00	165.41	163.01	7th Power Plan
Miscellaneous	Exterior Lighting	Linear Lighting	lamps	New	163.34	17	\$52.83	100%	at stock turnover	\$0.02	170.18	146.51	7th Power Plan
Miscellaneous	Exterior Lighting	Area Lighting	lamps	New	1,334.42	15	\$44.55	100%	at stock turnover	\$0.00	2,489.89	2,134.74	Annual Energy Outlook, 2015
Miscellaneous	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	New	1,507.00	11	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case

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Miscellaneous	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	New	605.00	15	\$0.00	17%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Miscellaneous	Refrigeration	Glass Door Display	1 unit	New	767.00	15	\$0.00	93%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Miscellaneous	Refrigeration	Open Display Case	1 unit	New	1,438.00	10	\$0.00	93%	at stock turnover	\$0.00	0.00	0.00	EIA 2011-2012 Ref. Case
Miscellaneous	Refrigeration	Icemaker	1 unit	New	488.61	9	\$1,056.09	54%	at stock turnover	\$0.33	47.51	43.27	ENERGY STAR
Miscellaneous	Refrigeration	Vending Machine	1 unit	New	92.75	10	\$42.81	54%	at stock turnover	\$0.06	18.41	16.78	EIA 2011-2012 Ref. Case
Miscellaneous	Food Preparation	Oven	1 unit	New	17,296.56	10	\$1,067.99	79%	at stock turnover	\$0.01	194.51	177.24	RTF Workbook
Miscellaneous	Food Preparation	Fryer	1 unit	New	3,299.18	10	\$782.02	92%	at stock turnover	\$0.03	42.42	38.65	RTF Workbook
Miscellaneous	Food Preparation	Dishwasher	1 unit	New	1,543.99	15	\$564.57	52%	at stock turnover	\$0.04	6.48	5.92	ENERGY STAR
Miscellaneous	Food Preparation	Hot Food Container	1 unit	New	918.64	20	\$490.95	52%	at stock turnover	\$0.05	11.46	10.43	RTF Workbook
Miscellaneous	Food Preparation	Steamer	1 unit	New	75,793.27	9	\$837.45	52%	at stock turnover	\$0.00	118.69	107.62	RTF Workbook
Miscellaneous	Office Equipment	Desktop Computer	1 unit	New	140.62	5	\$0.01	125%	at stock turnover	\$0.00	240.21	204.65	7th Power Plan
Miscellaneous	Office Equipment	Laptop	1 unit	New	41.96	4	\$0.01	125%	at stock turnover	\$0.00	32.66	28.56	7th Power Plan
Miscellaneous	Office Equipment	Monitor	1 unit	New	34.90	5	\$0.01	125%	at stock turnover	\$0.00	15.04	12.81	7th Power Plan
Miscellaneous	Office Equipment	Server	1 unit	New	84.36	4	\$0.01	125%	at stock turnover	\$0.00	102.78	90.55	AEG Research
Miscellaneous	Office Equipment	Printer/Copier/Fax	1 unit	New	253.89	6	\$0.01	125%	at stock turnover	\$0.00	6.90	6.21	ENERGY STAR
Miscellaneous	Office Equipment	POS Terminal	1 unit	New	141.44	5	\$0.01	44%	at stock turnover	\$0.00	18.13	16.10	7th Power Plan
Miscellaneous	Miscellaneous	Non-HVAC Motors	1 unit	New	0.00	15	\$0.00	107%	at stock turnover	\$0.00	0.00	0.00	N/A
Miscellaneous	Miscellaneous	Pool Pump	1 unit	New	1,640.13	10	\$246.30	0%	at stock turnover	\$0.02	1.92	1.77	Southern California Edison
Miscellaneous	Miscellaneous	Pool Heater	1 unit	New	17,494.52	15	\$3,546.07	0%	at stock turnover	\$0.02	0.86	0.80	AEG Research

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Miscellaneous	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Large Office	Cooling	Insulation - Ceiling	sqft roof	Existing	0.08	45	\$1.28	15%	35%	\$0.04	21.46	20.00	Building Energy Simulation Tool
Large Office	Heating	Insulation - Ceiling	sqft roof	Existing	1.56	45	\$1.28	15%	35%	\$0.04	116.93	104.38	Building Energy Simulation Tool
Large Office	Ventilation	Insulation - Ceiling	sqft roof	Existing	0.67	45	\$1.28	15%	35%	\$0.04	200.69	198.98	Building Energy Simulation Tool
Large Office	Cooling	Insulation - Ducting	sqft duct	Existing	0.12	20	\$0.84	15%	35%	\$0.00	49.99	48.84	Building Energy Simulation Tool
Large Office	Heating	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.84	15%	35%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Large Office	Ventilation	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.84	15%	35%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Large Office	Cooling	Building Shell - Cool Roofs	sqft roof	Existing	0.38	20	\$0.78	45%	50%	\$10.00	24.87	25.93	Building Energy Simulation Tool
Large Office	Heating	Building Shell - Cool Roofs	sqft roof	Existing	-0.69	20	\$0.78	45%	50%	\$10.00	-12.40	-11.79	Building Energy Simulation Tool
Large Office	Ventilation	Building Shell - Cool Roofs	sqft roof	Existing	-0.32	20	\$0.78	45%	50%	\$10.00	-23.08	-23.78	Building Energy Simulation Tool
Large Office	Cooling	Insulation - Wall Cavity	sqft wall	Existing	-0.25	45	\$0.78	15%	35%	\$0.02	-60.17	-55.73	Building Energy Simulation Tool
Large Office	Heating	Insulation - Wall Cavity	sqft wall	Existing	2.46	45	\$0.78	15%	35%	\$0.02	159.14	140.56	Building Energy Simulation Tool
Large Office	Ventilation	Insulation - Wall Cavity	sqft wall	Existing	1.07	45	\$0.78	15%	35%	\$0.02	275.75	269.03	Building Energy Simulation Tool
Large Office	Cooling	HVAC - Duct Repair and Sealing	tonCool	Existing	4.55	18	\$0.57	15%	50%	\$10.00	17.86	18.61	Building Energy Simulation Tool
Large Office	Heating	HVAC - Duct Repair and Sealing	tonCool	Existing	-12.29	18	\$0.57	15%	50%	\$10.00	-13.31	-12.67	Building Energy Simulation Tool
Large Office	Ventilation	HVAC - Duct Repair and Sealing	tonCool	Existing	-5.69	18	\$0.57	15%	50%	\$10.00	-24.79	-25.57	Building Energy Simulation Tool
Large Office	Cooling	Windows - High Efficiency Glazing	sqft window	Existing	5.73	30	\$35.93	48%	48%	\$0.07	0.00	0.00	7th Power Plan
Large Office	Heating	Windows - High Efficiency Glazing	sqft window	Existing	27.64	30	\$35.93	48%	48%	\$0.07	0.00	0.00	7th Power Plan
Large Office	Ventilation	Windows - High Efficiency Glazing	sqft window	Existing	7.05	30	\$35.93	48%	48%	\$0.07	0.00	0.00	7th Power Plan

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Large Office	Cooling	Chiller - Chilled Water Reset	ChillCtrl	Existing	3,131.44	10	\$884.85	15%	75%	\$0.04	40.72	37.05	AEG-BEST
Large Office	Cooling	Chiller - Chilled Water Variable-Flow System	HP cool	Existing	373.00	15	\$332.55	15%	75%	\$0.09	670.16	620.01	AEG-BEST
Large Office	Cooling	Chiller - Variable Speed Fans	HP fan	Existing	817.68	15	\$208.36	15%	75%	\$0.03	148.31	133.91	New Jersey TRM
Large Office	Cooling	Water-Cooled Chiller - Condenser Water Reset	ChillCtrl	Existing	38,705.71	10	\$884.85	15%	75%	\$0.00	191.54	173.63	AEG-BEST
Large Office	Cooling	HVAC - Economizer	HP cool	Existing	103.52	10	\$168.42	18%	75%	\$0.19	556.35	527.93	AEG-BEST
Large Office	Heating	Space Heating - Heat Recovery Ventilator	CFM	Existing	5.64	14	\$5.08	3%	75%	\$0.10	445.14	388.33	7th Power Plan
Large Office	Ventilation	Ventilation - ECM on VAV Boxes	sqft	Existing	0.56	18	\$0.25	15%	20%	\$0.04	124.93	123.24	7th Power Plan
Large Office	Ventilation	Ventilation - Variable Speed Control	sqft	Existing	0.05	15	\$181.39	13%	50%	\$346.80	85.94	89.88	AEG-BEST
Large Office	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.03	15	\$0.25	15%	75%	\$0.85	82.32	83.37	7th Power Plan
Large Office	Cooling	Destratification Fans (HVLS)	Strat Fan	Existing	3,362.45	15	\$7,270.90	15%	30%	\$0.04	199.99	182.51	AEG Research
Large Office	Heating	Destratification Fans (HVLS)	Strat Fan	Existing	14,542.18	15	\$7,270.90	15%	30%	\$0.04	229.26	196.56	AEG Research
Large Office	Cooling	RTU - Maintenance	tonCool	Existing	72.58	3	\$35.00	15%	45%	\$0.13	168.55	173.79	AEG Research
Large Office	Cooling	RTU - Advanced Controls	sqft	Existing	0.12	15	\$0.07	15%	45%	\$0.06	94.25	87.58	7th Power Plan
Large Office	Cooling	RTU - Evaporative Precooler	tonCool	Existing	149.28	15	\$681.62	15%	75%	\$0.42	627.97	610.44	AEG Research
Large Office	Cooling	Ductless Mini Split Heat Pump	tonCool	Existing	333.18	15	\$3,359.26	15%	25%	\$0.51	12.72	13.51	7th Power Plan
Large Office	Heating	Ductless Mini Split Heat Pump	tonCool	Existing	273.27	15	\$3,359.26	15%	25%	\$0.51	69.99	63.82	7th Power Plan
Large Office	Cooling	Thermostat - WiFi/Interactive	sqft	Existing	0.34	5	\$0.66	30%	40%	\$0.09	135.53	138.23	7th Power Plan
Large Office	Heating	Thermostat - WiFi/Interactive	sqft	Existing	0.81	5	\$0.66	30%	40%	\$0.09	88.90	82.59	7th Power Plan
Large Office	Ventilation	Thermostat - WiFi/Interactive	sqft	Existing	0.37	5	\$0.66	30%	40%	\$0.09	163.79	165.56	7th Power Plan
Large Office	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	Existing	94.22	10	\$8.35	25%	65%	\$0.01	18.54	27.66	Illinois TRM
Large Office	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	Existing	97.61	10	\$11.64	25%	65%	\$0.01	9.57	14.40	7th Power Plan

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Large Office	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	Existing	66.40	15	\$36.75	15%	25%	\$0.03	2.76	3.68	Hawaii TRM
Large Office	Water Heating	Water Heater - Pipe Insulation	PipeFeet	Existing	299.80	15	\$14.88	16%	75%	\$0.00	36.65	51.76	AEG-BEST
Large Office	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	Existing	64.66	4	\$144.04	25%	65%	\$0.33	12.41	18.71	7th Power Plan
Large Office	Water Heating	Water Heater - Thermostat Setback	WHunits	Existing	66.45	2	\$5.00	15%	75%	\$0.02	18.04	26.97	Illinois TRM
Large Office	Water Heating	Water Heater - Solar System	PipeFeet	Existing	1,038.81	20	\$215.28	1%	30%	\$0.01	61.74	88.57	AEG-BEST
Large Office	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.35	15	\$0.35	3%	23%	\$0.08	388.92	433.92	7th Power Plan
Large Office	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.48	15	\$0.58	3%	23%	\$0.09	524.52	597.34	7th Power Plan
Large Office	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	Existing	170.18	15	\$54.41	1%	3%	\$0.02	11.25	13.75	7th Power Plan
Large Office	Interior Lighting	Interior Lighting - Timeclocks and Timers	occ sens	Existing	0.00	8	\$111.67	7%	15%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Large Office	Interior Lighting	Interior Lighting - Skylights	1000 sqft	Existing	0.00	15	\$1,006.35	15%	25%	\$0.00	0.00	0.00	AEG Research
Large Office	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	1000 sqft	Existing	233.90	16	\$1,807.69	5%	15%	\$0.56	100.96	131.11	7th Power Plan
Large Office	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	Existing	2,229.85	11	\$30.80	15%	50%	\$0.00	356.22	421.11	Illinois TRM
Large Office	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	ELtg Watts	Existing	1.31	8	\$0.63	15%	25%	\$0.05	240.75	310.00	7th Power Plan
Large Office	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	Existing	81.09	8	\$55.10	15%	25%	\$0.07	121.74	161.39	Pacific Gas and Electric Research
Large Office	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	Existing	97.15	7	\$3,400.00	15%	30%	\$3.93	215.37	295.45	AEG Research
Large Office	Refrigeration	Refrigeration - Anti-Sweat Heater	Fridge Feet	Existing	13.29	8	\$48.18	0%	0%	\$0.57	0.00	0.00	7th Power Plan
Large Office	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	Existing	18.55	4	\$10.44	0%	0%	\$0.15	0.00	0.00	Michigan Energy Measures Database
Large Office	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	Existing	153.73	16	\$165.20	0%	0%	\$0.11	0.00	0.00	7th Power Plan
Large Office	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	Existing	27.47	15	\$335.85	0%	0%	\$1.31	0.00	0.00	7th Power Plan

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Large Office	Refrigeration	Refrigeration - Strip Curtain	Walkin Door	Existing	19.71	2	\$10.41	0%	0%	\$0.25	0.00	0.00	7th Power Plan
Large Office	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	Existing	0.43	15	\$45.43	0%	0%	\$10.85	0.00	0.00	Annual Energy Outlook, 2015
Large Office	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	Existing	9.27	15	\$313.82	0%	0%	\$3.62	0.00	0.00	Annual Energy Outlook, 2015
Large Office	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	Existing	101.66	10	\$506.05	0%	0%	\$0.67	0.00	0.00	Vermont TRM
Large Office	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	Existing	9.55	6	\$45.41	0%	0%	\$0.91	0.00	0.00	7th Power Plan
Large Office	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	Existing	0.77	8	\$3.72	0%	0%	\$0.76	0.00	0.00	7th Power Plan
Large Office	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	Existing	133.84	5	\$45.85	0%	0%	\$0.08	0.00	0.00	Illinois TRM
Large Office	Refrigeration	Grocery - ECMs for Display Cases	Fridge Case	Existing	39.55	16	\$165.20	0%	0%	\$0.43	0.00	0.00	7th Power Plan
Large Office	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	Existing	1,458.05	5	\$187.94	25%	75%	\$0.03	21.31	18.26	Illinois TRM
Large Office	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	Existing	4,671.39	18	\$8,526.67	25%	50%	\$0.17	209.27	209.21	7th Power Plan
Large Office	Office Equipment	Office Equipment - Smart Power Strips	Smart Strip	Existing	128.04	4	\$41.63	10%	50%	\$0.08	564.29	452.84	7th Power Plan
Large Office	Cooling	Lodging - Guest Room Controls	LodgUnit	Existing	274.10	15	\$260.00	0%	0%	\$0.17	0.00	0.00	AEG-BEST
Large Office	Heating	Lodging - Guest Room Controls	LodgUnit	Existing	-127.40	15	\$260.00	0%	0%	\$0.17	0.00	0.00	AEG-BEST
Large Office	Office Equipment	Data Center - Best Practice Measures	sqft	Existing	0.04	5	\$0.00	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Office	Cooling	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Office	Ventilation	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Office	Interior Lighting	Data Center - Commercially Available Measures	sqft	Existing	0.03	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Office	Office Equipment	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Office	Cooling	Data Center - Cutting Edge Measures	sqft	Existing	0.04	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx

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Large Office	Office Equipment	Data Center - Cutting Edge Measures	sqft	Existing	0.00	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Office	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	Existing	7,915.25	18	\$4,092.80	0%	0%	\$0.05	0.00	0.00	7th Power Plan
Large Office	Miscellaneous	Pool Pump - Timer	perBldg	Existing	0.00	10	\$85.22	15%	75%	\$0.00	0.00	0.00	Ontario Power TRM
Large Office	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	Existing	7,073.00	6	\$35.93	1%	3%	\$0.00	0.00	26.61	7th Power Plan
Large Office	Cooling	Advanced New Construction Designs	sqft	Existing	0.58	25	\$4.11	0%	0%	\$0.07	0.00	0.00	AEG Research
Large Office	Heating	Advanced New Construction Designs	sqft	Existing	1.68	25	\$4.11	0%	0%	\$0.07	0.00	0.00	AEG Research
Large Office	Ventilation	Advanced New Construction Designs	sqft	Existing	0.63	25	\$4.11	0%	0%	\$0.07	0.00	0.00	AEG Research
Large Office	Water Heating	Advanced New Construction Designs	sqft	Existing	0.19	25	\$4.11	0%	0%	\$0.07	0.00	0.00	AEG Research
Large Office	Interior Lighting	Advanced New Construction Designs	sqft	Existing	0.80	25	\$4.11	0%	0%	\$0.07	0.00	0.00	AEG Research
Large Office	Exterior Lighting	Advanced New Construction Designs	sqft	Existing	0.35	25	\$4.11	0%	0%	\$0.07	0.00	0.00	AEG Research
Large Office	Cooling	Strategic Energy Management	sqft	Existing	0.11	3	\$0.22	3%	14%	\$0.07	54.51	57.26	AEG Research
Large Office	Heating	Strategic Energy Management	sqft	Existing	0.27	3	\$0.22	3%	14%	\$0.07	35.43	32.58	AEG Research
Large Office	Ventilation	Strategic Energy Management	sqft	Existing	0.13	3	\$0.22	3%	14%	\$0.07	65.96	67.71	AEG Research
Large Office	Water Heating	Strategic Energy Management	sqft	Existing	0.03	3	\$0.22	3%	14%	\$0.07	6.39	9.70	AEG Research
Large Office	Interior Lighting	Strategic Energy Management	sqft	Existing	0.11	3	\$0.22	3%	14%	\$0.07	50.65	66.78	AEG Research
Large Office	Exterior Lighting	Strategic Energy Management	sqft	Existing	0.05	3	\$0.22	3%	14%	\$0.07	24.21	32.59	AEG Research
Large Office	Refrigeration	Strategic Energy Management	sqft	Existing	0.01	3	\$0.22	3%	14%	\$0.07	5.39	5.05	AEG Research
Large Office	Office Equipment	Strategic Energy Management	sqft	Existing	0.17	3	\$0.22	3%	14%	\$0.07	101.68	82.94	AEG Research
Large Office	Cooling	Commissioning	sqft	Existing	0.15	3	\$0.60	0%	0%	\$0.18	0.00	0.00	AEG Research
Large Office	Heating	Commissioning	sqft	Existing	0.36	3	\$0.60	0%	0%	\$0.18	0.00	0.00	AEG Research
Large Office	Ventilation	Commissioning	sqft	Existing	0.17	3	\$0.60	0%	0%	\$0.18	0.00	0.00	AEG Research

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Large Office	Water Heating	Commissioning	sqft	Existing	0.01	3	\$0.60	0%	0%	\$0.18	0.00	0.00	AEG Research
Large Office	Interior Lighting	Commissioning	sqft	Existing	0.12	3	\$0.60	0%	0%	\$0.18	0.00	0.00	AEG Research
Large Office	Exterior Lighting	Commissioning	sqft	Existing	0.06	3	\$0.60	0%	0%	\$0.18	0.00	0.00	AEG Research
Large Office	Refrigeration	Commissioning	sqft	Existing	0.02	3	\$0.60	0%	0%	\$0.18	0.00	0.00	AEG Research
Large Office	Cooling	Retrocommissioning	sqft	Existing	0.16	3	\$0.38	11%	59%	\$0.11	327.60	345.15	AEG Research
Large Office	Heating	Retrocommissioning	sqft	Existing	0.37	3	\$0.38	11%	59%	\$0.11	212.93	196.37	AEG Research
Large Office	Ventilation	Retrocommissioning	sqft	Existing	0.17	3	\$0.38	11%	59%	\$0.11	396.40	408.16	AEG Research
Large Office	Water Heating	Retrocommissioning	sqft	Existing	0.01	3	\$0.38	11%	59%	\$0.11	12.81	19.49	AEG Research
Large Office	Interior Lighting	Retrocommissioning	sqft	Existing	0.12	3	\$0.38	11%	59%	\$0.11	253.68	335.47	AEG Research
Large Office	Exterior Lighting	Retrocommissioning	sqft	Existing	0.06	3	\$0.38	11%	59%	\$0.11	121.26	163.74	AEG Research
Large Office	Refrigeration	Retrocommissioning	sqft	Existing	0.02	3	\$0.38	11%	59%	\$0.11	53.98	50.76	AEG Research
Large Office	Interior Lighting	Fruit Storage - Lighting Controls	sqft	Existing	0.09	10	\$0.09	0%	0%	\$0.09	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Office	Refrigeration	Fruit Storage Refrigeration Retrofit	sqft	Existing	0.07	10	\$1.09	0%	0%	\$2.03	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Office	Refrigeration	Fruit Storage Refrigeration Tuneup	sqft	Existing	0.02	3	\$0.23	0%	0%	\$4.15	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Office	Refrigeration	Fruit Storage Retrofit - CO2 Scrub	sqft	Existing	0.03	10	\$3.13	0%	0%	\$12.01	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Office	Refrigeration	Fruit Storage Retrofit - Membrane	sqft	Existing	0.01	10	\$0.68	0%	0%	\$13.03	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Office	Cooling	Insulation - Ceiling	sqft roof	New	0.00	45	\$1.28	15%	50%	\$0.13	0.00	0.00	Building Energy Simulation Tool
Large Office	Heating	Insulation - Ceiling	sqft roof	New	0.57	45	\$1.28	15%	50%	\$0.13	18.43	16.98	Building Energy Simulation Tool
Large Office	Ventilation	Insulation - Ceiling	sqft roof	New	0.20	45	\$1.28	15%	50%	\$0.13	29.24	27.77	Building Energy Simulation Tool
Large Office	Cooling	Insulation - Ducting	sqft duct	New	0.16	20	\$0.84	15%	50%	\$0.00	34.27	32.12	Building Energy Simulation Tool
Large Office	Heating	Insulation - Ducting	sqft duct	New	0.00	20	\$0.84	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Large Office	Ventilation	Insulation - Ducting	sqft duct	New	0.00	20	\$0.84	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Large Office	Cooling	Building Shell - Cool Roofs	sqft roof	New	0.05	20	\$0.78	45%	50%	\$10.00	1.07	1.01	Building Energy Simulation Tool
Large Office	Heating	Building Shell - Cool Roofs	sqft roof	New	-0.27	20	\$0.78	45%	50%	\$10.00	-1.27	-1.17	Building Energy Simulation Tool
Large Office	Ventilation	Building Shell - Cool Roofs	sqft roof	New	-0.10	20	\$0.78	45%	50%	\$10.00	-2.04	-1.96	Building Energy Simulation Tool
Large Office	Cooling	Insulation - Wall Cavity	sqft wall	New	0.00	45	\$0.78	15%	50%	\$0.08	-0.43	-0.40	Building Energy Simulation Tool
Large Office	Heating	Insulation - Wall Cavity	sqft wall	New	0.55	45	\$0.78	15%	50%	\$0.08	15.07	13.87	Building Energy Simulation Tool
Large Office	Ventilation	Insulation - Wall Cavity	sqft wall	New	0.19	45	\$0.78	15%	50%	\$0.08	24.02	22.75	Building Energy Simulation Tool
Large Office	Cooling	HVAC - Duct Repair and Sealing	tonCool	New	11.92	18	\$0.57	15%	35%	\$0.00	8.12	7.57	Building Energy Simulation Tool
Large Office	Heating	HVAC - Duct Repair and Sealing	tonCool	New	17.26	18	\$0.57	15%	35%	\$0.00	2.64	2.43	Building Energy Simulation Tool
Large Office	Ventilation	HVAC - Duct Repair and Sealing	tonCool	New	6.04	18	\$0.57	15%	35%	\$0.00	4.21	3.99	Building Energy Simulation Tool
Large Office	Cooling	Windows - High Efficiency Glazing	sqft window	New	3.92	30	\$35.93	66%	66%	\$0.08	0.00	0.00	7th Power Plan
Large Office	Heating	Windows - High Efficiency Glazing	sqft window	New	27.12	30	\$35.93	66%	66%	\$0.08	0.00	0.00	7th Power Plan
Large Office	Ventilation	Windows - High Efficiency Glazing	sqft window	New	5.51	30	\$35.93	66%	66%	\$0.08	0.00	0.00	7th Power Plan
Large Office	Cooling	Chiller - Chilled Water Reset	ChillCtrl	New	2,397.38	10	\$884.85	15%	75%	\$0.04	3.62	3.15	AEG-BEST
Large Office	Cooling	Chiller - Chilled Water Variable-Flow System	HP cool	New	289.51	15	\$332.55	15%	75%	\$0.10	77.69	68.44	AEG-BEST
Large Office	Cooling	Chiller - Variable Speed Fans	HP fan	New	625.17	15	\$208.36	15%	75%	\$0.03	16.74	14.74	New Jersey TRM
Large Office	Cooling	Water-Cooled Chiller - Condenser Water Reset	ChillCtrl	New	36,002.53	10	\$884.85	15%	75%	\$0.00	20.66	17.96	AEG-BEST
Large Office	Cooling	HVAC - Economizer	HP cool	New	66.86	10	\$168.42	18%	75%	\$0.26	40.93	38.22	AEG-BEST
Large Office	Heating	Space Heating - Heat Recovery Ventilator	CFM	New	5.54	14	\$5.08	6%	75%	\$0.10	50.99	43.50	7th Power Plan

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Large Office	Ventilation	Ventilation - ECM on VAV Boxes	sqft	New	0.47	18	\$0.25	15%	20%	\$0.04	28.62	27.10	7th Power Plan
Large Office	Ventilation	Ventilation - Variable Speed Control	sqft	New	0.04	15	\$181.39	19%	50%	\$364.04	8.95	8.29	AEG-BEST
Large Office	Ventilation	Ventilation - Demand Controlled	sqft	New	0.02	15	\$0.25	15%	75%	\$0.89	9.80	9.10	7th Power Plan
Large Office	Cooling	Destratification Fans (HVLS)	Strat Fan	New	2,229.48	15	\$7,270.90	15%	30%	\$0.05	19.61	17.29	AEG Research
Large Office	Heating	Destratification Fans (HVLS)	Strat Fan	New	14,049.51	15	\$7,270.90	15%	30%	\$0.05	27.67	23.72	AEG Research
Large Office	Cooling	RTU - Maintenance	tonCool	New	86.36	3	\$35.00	15%	45%	\$0.11	4.93	4.61	AEG Research
Large Office	Cooling	RTU - Advanced Controls	sqft	New	0.14	15	\$0.07	15%	45%	\$0.04	29.28	26.53	7th Power Plan
Large Office	Cooling	RTU - Evaporative Precooler	tonCool	New	181.05	15	\$681.62	15%	75%	\$0.33	257.20	239.03	AEG Research
Large Office	Cooling	Ductless Mini Split Heat Pump	tonCool	New	399.87	15	\$3,359.26	15%	25%	\$0.44	3.09	2.87	7th Power Plan
Large Office	Heating	Ductless Mini Split Heat Pump	tonCool	New	286.58	15	\$3,359.26	15%	25%	\$0.44	12.07	10.60	7th Power Plan
Large Office	Cooling	Thermostat - WiFi/Interactive	sqft	New	0.23	5	\$0.66	30%	40%	\$0.10	3.51	3.26	7th Power Plan
Large Office	Heating	Thermostat - WiFi/Interactive	sqft	New	0.80	5	\$0.66	30%	40%	\$0.10	2.72	2.32	7th Power Plan
Large Office	Ventilation	Thermostat - WiFi/Interactive	sqft	New	0.29	5	\$0.66	30%	40%	\$0.10	4.39	4.01	7th Power Plan
Large Office	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	New	20.85	10	\$8.35	25%	65%	\$0.02	1.48	1.73	Illinois TRM
Large Office	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	New	21.75	10	\$11.64	25%	65%	\$0.03	0.77	0.90	7th Power Plan
Large Office	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	New	44.67	15	\$36.75	15%	25%	\$0.03	0.61	0.65	Hawaii TRM
Large Office	Water Heating	Water Heater - Pipe Insulation	PipeFeet	New	193.55	15	\$14.88	1%	75%	\$0.00	5.59	6.34	AEG-BEST
Large Office	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	New	14.30	4	\$144.04	25%	65%	\$0.99	0.47	0.59	7th Power Plan
Large Office	Water Heating	Water Heater - Thermostat Setback	WHunits	New	44.64	2	\$5.00	15%	75%	\$0.02	0.20	0.25	Illinois TRM
Large Office	Water Heating	Water Heater - Solar System	PipeFeet	New	676.65	20	\$215.28	1%	30%	\$0.01	7.92	8.94	AEG-BEST
Large Office	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.30	15	\$0.35	11%	23%	\$0.08	100.14	101.69	7th Power Plan

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Large Office	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.41	15	\$0.58	11%	23%	\$0.09	137.71	140.23	7th Power Plan
Large Office	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	New	144.32	15	\$54.41	1%	3%	\$0.02	1.13	1.19	7th Power Plan
Large Office	Interior Lighting	Interior Lighting - Timeclocks and Timers	occ sens	New	0.00	8	\$111.67	7%	15%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Large Office	Interior Lighting	Interior Lighting - Skylights	1000 sqft	New	0.00	15	\$1,006.35	18%	25%	\$0.00	0.00	0.00	AEG Research
Large Office	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	1000 sqft	New	182.48	16	\$1,807.69	5%	15%	\$0.58	12.50	13.22	7th Power Plan
Large Office	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	New	1,745.56	11	\$30.80	15%	50%	\$0.00	34.37	35.49	Illinois TRM
Large Office	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	ELtg Watts	New	0.89	8	\$0.63	15%	25%	\$0.05	17.38	19.58	7th Power Plan
Large Office	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	New	56.67	8	\$55.10	15%	25%	\$0.07	9.17	10.28	Pacific Gas and Electric Research
Large Office	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	New	68.77	7	\$3,400.00	15%	30%	\$3.96	14.51	16.76	AEG Research
Large Office	Refrigeration	Refrigeration - Anti-Sweat Heater	Fridge Feet	New	9.06	8	\$48.18	0%	0%	\$0.83	0.00	0.00	7th Power Plan
Large Office	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	New	13.05	4	\$10.44	0%	0%	\$0.21	0.00	0.00	Michigan Energy Measures Database
Large Office	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	New	118.06	16	\$165.20	0%	0%	\$0.15	0.00	0.00	7th Power Plan
Large Office	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	New	25.21	15	\$335.85	0%	0%	\$1.43	0.00	0.00	7th Power Plan
Large Office	Refrigeration	Refrigeration - Strip Curtain	Walkin Door	New	16.83	2	\$10.41	0%	0%	\$0.30	0.00	0.00	7th Power Plan
Large Office	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBtuh	New	0.41	15	\$45.43	0%	0%	\$11.83	0.00	0.00	Annual Energy Outlook, 2015
Large Office	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	New	8.53	15	\$313.82	0%	0%	\$3.94	0.00	0.00	Annual Energy Outlook, 2015
Large Office	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	New	78.95	10	\$506.05	0%	0%	\$0.86	0.00	0.00	Vermont TRM
Large Office	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	New	8.56	6	\$45.41	0%	0%	\$1.02	0.00	0.00	7th Power Plan
Large Office	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	New	0.69	8	\$3.72	0%	0%	\$0.84	0.00	0.00	7th Power Plan

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Large Office	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	New	124.14	5	\$45.85	0%	0%	\$0.08	0.00	0.00	Illinois TRM
Large Office	Refrigeration	Grocery - ECMs for Display Cases	Fridge Case	New	35.49	16	\$165.20	0%	0%	\$0.48	0.00	0.00	7th Power Plan
Large Office	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	New	1,426.41	5	\$187.94	25%	75%	\$0.03	1.21	0.99	Illinois TRM
Large Office	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	New	3,976.58	18	\$8,526.67	25%	50%	\$0.17	48.69	46.24	7th Power Plan
Large Office	Office Equipment	Office Equipment - Smart Power Strips	Smart Strip	New	152.83	4	\$41.63	10%	50%	\$0.06	24.55	18.15	7th Power Plan
Large Office	Cooling	Lodging - Guest Room Controls	LodgUnit	New	311.31	15	\$260.00	0%	0%	\$0.12	0.00	0.00	AEG-BEST
Large Office	Heating	Lodging - Guest Room Controls	LodgUnit	New	-126.84	15	\$260.00	0%	0%	\$0.12	0.00	0.00	AEG-BEST
Large Office	Office Equipment	Data Center - Best Practice Measures	sqft	New	0.04	5	\$0.00	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Office	Cooling	Data Center - Commercially Available Measures	sqft	New	0.01	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Office	Ventilation	Data Center - Commercially Available Measures	sqft	New	0.01	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Office	Interior Lighting	Data Center - Commercially Available Measures	sqft	New	0.02	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Office	Office Equipment	Data Center - Commercially Available Measures	sqft	New	0.01	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Office	Cooling	Data Center - Cutting Edge Measures	sqft	New	0.02	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Office	Office Equipment	Data Center - Cutting Edge Measures	sqft	New	0.00	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Office	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	New	6,699.66	18	\$4,092.80	0%	0%	\$0.05	0.00	0.00	7th Power Plan
Large Office	Miscellaneous	Pool Pump - Timer	perBldg	New	0.00	10	\$85.22	15%	75%	\$0.00	0.00	0.00	Ontario Power TRM
Large Office	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	New	2,357.67	6	\$35.93	1%	3%	\$0.00	0.00	1.07	7th Power Plan
Large Office	Cooling	Advanced New Construction Designs	sqft	New	0.56	25	\$4.11	10%	30%	\$0.07	157.56	145.19	AEG Research
Large Office	Heating	Advanced New Construction Designs	sqft	New	1.80	25	\$4.11	10%	30%	\$0.07	114.53	104.39	AEG Research

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Large Office	Ventilation	Advanced New Construction Designs	sqft	New	0.64	25	\$4.11	10%	30%	\$0.07	184.04	174.92	AEG Research
Large Office	Water Heating	Advanced New Construction Designs	sqft	New	0.13	25	\$4.11	10%	30%	\$0.07	20.92	21.88	AEG Research
Large Office	Interior Lighting	Advanced New Construction Designs	sqft	New	0.59	25	\$4.11	10%	30%	\$0.07	162.27	163.67	AEG Research
Large Office	Exterior Lighting	Advanced New Construction Designs	sqft	New	0.23	25	\$4.11	10%	30%	\$0.07	69.87	71.38	AEG Research
Large Office	Cooling	Strategic Energy Management	sqft	New	0.08	3	\$0.21	3%	14%	\$0.07	1.07	1.00	AEG Research
Large Office	Heating	Strategic Energy Management	sqft	New	0.27	3	\$0.21	3%	14%	\$0.07	0.83	0.70	AEG Research
Large Office	Ventilation	Strategic Energy Management	sqft	New	0.10	3	\$0.21	3%	14%	\$0.07	1.34	1.21	AEG Research
Large Office	Water Heating	Strategic Energy Management	sqft	New	0.02	3	\$0.21	3%	14%	\$0.07	0.15	0.19	AEG Research
Large Office	Interior Lighting	Strategic Energy Management	sqft	New	0.09	3	\$0.21	3%	14%	\$0.07	1.18	1.40	AEG Research
Large Office	Exterior Lighting	Strategic Energy Management	sqft	New	0.03	3	\$0.21	3%	14%	\$0.07	0.51	0.62	AEG Research
Large Office	Refrigeration	Strategic Energy Management	sqft	New	0.01	3	\$0.21	3%	14%	\$0.07	0.14	0.11	AEG Research
Large Office	Office Equipment	Strategic Energy Management	sqft	New	0.21	3	\$0.21	3%	14%	\$0.07	2.85	2.08	AEG Research
Large Office	Cooling	Commissioning	sqft	New	0.11	3	\$0.50	11%	59%	\$0.16	6.48	6.02	AEG Research
Large Office	Heating	Commissioning	sqft	New	0.38	3	\$0.50	11%	59%	\$0.16	5.03	4.21	AEG Research
Large Office	Ventilation	Commissioning	sqft	New	0.13	3	\$0.50	11%	59%	\$0.16	8.10	7.30	AEG Research
Large Office	Water Heating	Commissioning	sqft	New	0.01	3	\$0.50	11%	59%	\$0.16	0.31	0.39	AEG Research
Large Office	Interior Lighting	Commissioning	sqft	New	0.10	3	\$0.50	11%	59%	\$0.16	5.95	7.02	AEG Research
Large Office	Exterior Lighting	Commissioning	sqft	New	0.04	3	\$0.50	11%	59%	\$0.16	2.57	3.14	AEG Research
Large Office	Refrigeration	Commissioning	sqft	New	0.03	3	\$0.50	11%	59%	\$0.16	1.42	1.15	AEG Research
Large Office	Cooling	Retrocommissioning	sqft	New	0.11	3	\$0.32	0%	0%	\$0.10	0.00	0.00	AEG Research
Large Office	Heating	Retrocommissioning	sqft	New	0.38	3	\$0.32	0%	0%	\$0.10	0.00	0.00	AEG Research
Large Office	Ventilation	Retrocommissioning	sqft	New	0.13	3	\$0.32	0%	0%	\$0.10	0.00	0.00	AEG Research

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Large Office	Water Heating	Retrocommissioning	sqft	New	0.01	3	\$0.32	0%	0%	\$0.10	0.00	0.00	AEG Research
Large Office	Interior Lighting	Retrocommissioning	sqft	New	0.10	3	\$0.32	0%	0%	\$0.10	0.00	0.00	AEG Research
Large Office	Exterior Lighting	Retrocommissioning	sqft	New	0.04	3	\$0.32	0%	0%	\$0.10	0.00	0.00	AEG Research
Large Office	Refrigeration	Retrocommissioning	sqft	New	0.03	3	\$0.32	0%	0%	\$0.10	0.00	0.00	AEG Research
Large Office	Interior Lighting	Fruit Storage - Lighting Controls	sqft	New	0.07	10	\$0.09	0%	0%	\$0.09	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Office	Refrigeration	Fruit Storage Refrigeration Retrofit	sqft	New	0.08	10	\$1.09	0%	0%	\$1.84	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Office	Refrigeration	Fruit Storage Refrigeration Tuneup	sqft	New	0.02	3	\$0.23	0%	0%	\$3.77	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Office	Refrigeration	Fruit Storage Retrofit - CO2 Scrub	sqft	New	0.04	10	\$3.13	0%	0%	\$10.91	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Office	Refrigeration	Fruit Storage Retrofit - Membrane	sqft	New	0.01	10	\$0.68	0%	0%	\$11.84	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Office	Cooling	Insulation - Ceiling	sqft roof	Existing	0.12	45	\$1.28	15%	35%	\$0.11	353.91	320.59	Building Energy Simulation Tool
Small Office	Heating	Insulation - Ceiling	sqft roof	Existing	0.66	45	\$1.28	15%	35%	\$0.11	442.58	404.40	Building Energy Simulation Tool
Small Office	Ventilation	Insulation - Ceiling	sqft roof	Existing	0.09	45	\$1.28	15%	35%	\$0.11	277.53	291.26	Building Energy Simulation Tool
Small Office	Cooling	Insulation - Ducting	sqft duct	Existing	0.27	20	\$0.84	15%	35%	\$0.00	194.92	177.15	Building Energy Simulation Tool
Small Office	Heating	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.84	15%	35%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Small Office	Ventilation	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.84	15%	35%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Small Office	Cooling	Building Shell - Cool Roofs	sqft roof	Existing	0.35	20	\$0.78	45%	50%	\$10.00	230.36	230.83	Building Energy Simulation Tool
Small Office	Heating	Building Shell - Cool Roofs	sqft roof	Existing	-0.40	20	\$0.78	45%	50%	\$10.00	-64.96	-62.59	Building Energy Simulation Tool
Small Office	Ventilation	Building Shell - Cool Roofs	sqft roof	Existing	-0.06	20	\$0.78	45%	50%	\$10.00	-42.40	-46.27	Building Energy Simulation Tool
Small Office	Cooling	Insulation - Wall Cavity	sqft wall	Existing	-0.21	45	\$0.78	15%	35%	\$0.02	-219.38	-197.05	Building Energy Simulation Tool

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Small Office	Heating	Insulation - Wall Cavity	sqft wall	Existing	2.54	45	\$0.78	15%	35%	\$0.02	641.40	567.60	Building Energy Simulation Tool
Small Office	Ventilation	Insulation - Wall Cavity	sqft wall	Existing	0.34	45	\$0.78	15%	35%	\$0.02	381.21	393.67	Building Energy Simulation Tool
Small Office	Cooling	HVAC - Duct Repair and Sealing	tonCool	Existing	3.71	18	\$0.57	15%	50%	\$10.00	49.29	49.36	Building Energy Simulation Tool
Small Office	Heating	HVAC - Duct Repair and Sealing	tonCool	Existing	-15.06	18	\$0.57	15%	50%	\$10.00	-48.89	-47.16	Building Energy Simulation Tool
Small Office	Ventilation	HVAC - Duct Repair and Sealing	tonCool	Existing	-2.17	18	\$0.57	15%	50%	\$10.00	-32.10	-35.00	Building Energy Simulation Tool
Small Office	Cooling	Windows - High Efficiency Glazing	sqft window	Existing	6.12	30	\$35.93	48%	48%	\$0.08	0.00	0.00	7th Power Plan
Small Office	Heating	Windows - High Efficiency Glazing	sqft window	Existing	27.83	30	\$35.93	48%	48%	\$0.08	0.00	0.00	7th Power Plan
Small Office	Ventilation	Windows - High Efficiency Glazing	sqft window	Existing	2.23	30	\$35.93	48%	48%	\$0.08	0.00	0.00	7th Power Plan
Small Office	Cooling	Chiller - Chilled Water Reset	ChillCtrl	Existing	0.00	10	\$884.85	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Small Office	Cooling	Chiller - Chilled Water Variable-Flow System	HP cool	Existing	0.00	15	\$332.55	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Small Office	Cooling	Chiller - Variable Speed Fans	HP fan	Existing	0.00	15	\$208.36	15%	75%	\$0.00	0.00	0.00	New Jersey TRM
Small Office	Cooling	Water-Cooled Chiller - Condenser Water Reset	ChillCtrl	Existing	0.00	10	\$884.85	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Small Office	Cooling	HVAC - Economizer	HP cool	Existing	142.48	10	\$168.42	18%	75%	\$0.16	2,616.51	2,287.37	AEG-BEST
Small Office	Heating	Space Heating - Heat Recovery Ventilator	CFM	Existing	7.79	14	\$5.08	3%	75%	\$0.07	1,879.00	1,597.86	7th Power Plan
Small Office	Ventilation	Ventilation - ECM on VAV Boxes	sqft	Existing	0.22	18	\$0.25	15%	20%	\$0.09	167.46	174.87	7th Power Plan
Small Office	Ventilation	Ventilation - Variable Speed Control	sqft	Existing	0.05	15	\$181.39	13%	25%	\$289.32	101.10	113.45	AEG-BEST
Small Office	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.01	15	\$0.25	15%	25%	\$1.94	18.17	19.97	7th Power Plan
Small Office	Cooling	Destratification Fans (HVLS)	Strat Fan	Existing	4,394.17	15	\$7,270.90	15%	15%	\$0.03	0.00	0.00	AEG Research
Small Office	Heating	Destratification Fans (HVLS)	Strat Fan	Existing	19,576.85	15	\$7,270.90	15%	15%	\$0.03	0.00	0.00	AEG Research
Small Office	Cooling	RTU - Maintenance	tonCool	Existing	91.35	3	\$35.00	15%	45%	\$0.12	1,072.53	1,028.81	AEG Research
Small Office	Cooling	RTU - Advanced Controls	sqft	Existing	0.29	15	\$0.07	15%	45%	\$0.02	1,169.03	1,042.16	7th Power Plan

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Small Office	Cooling	RTU - Evaporative Precooler	tonCool	Existing	190.25	15	\$681.62	15%	75%	\$0.36	4,087.43	3,809.06	AEG Research
Small Office	Cooling	Ductless Mini Split Heat Pump	tonCool	Existing	416.89	15	\$3,359.26	15%	75%	\$0.41	322.11	325.12	7th Power Plan
Small Office	Heating	Ductless Mini Split Heat Pump	tonCool	Existing	383.62	15	\$3,359.26	15%	75%	\$0.41	1,716.88	1,541.45	7th Power Plan
Small Office	Cooling	Thermostat - WiFi/Interactive	sqft	Existing	0.46	5	\$0.66	30%	40%	\$0.08	621.33	607.96	7th Power Plan
Small Office	Heating	Thermostat - WiFi/Interactive	sqft	Existing	1.10	5	\$0.66	30%	40%	\$0.08	369.51	340.37	7th Power Plan
Small Office	Ventilation	Thermostat - WiFi/Interactive	sqft	Existing	0.15	5	\$0.66	30%	40%	\$0.08	228.08	243.45	7th Power Plan
Small Office	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	Existing	18.10	10	\$8.35	25%	65%	\$0.04	46.45	69.17	Illinois TRM
Small Office	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	Existing	18.76	10	\$11.64	25%	65%	\$0.05	23.99	36.02	7th Power Plan
Small Office	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	Existing	69.90	15	\$36.75	0%	0%	\$0.03	0.00	0.00	Hawaii TRM
Small Office	Water Heating	Water Heater - Pipe Insulation	PipeFeet	Existing	57.59	15	\$14.88	16%	75%	\$0.02	91.71	129.51	AEG-BEST
Small Office	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	Existing	12.31	4	\$144.04	25%	65%	\$1.72	30.71	46.55	7th Power Plan
Small Office	Water Heating	Water Heater - Thermostat Setback	WHunits	Existing	66.70	2	\$5.00	15%	75%	\$0.02	45.34	67.52	Illinois TRM
Small Office	Water Heating	Water Heater - Solar System	PipeFeet	Existing	199.46	20	\$215.28	1%	30%	\$0.06	154.46	221.48	AEG-BEST
Small Office	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.39	15	\$0.35	3%	23%	\$0.07	1,475.06	1,630.08	7th Power Plan
Small Office	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.54	15	\$0.58	3%	23%	\$0.08	1,989.39	2,243.93	7th Power Plan
Small Office	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	Existing	114.52	15	\$54.41	1%	3%	\$0.04	42.67	51.53	7th Power Plan
Small Office	Interior Lighting	Interior Lighting - Timeclocks and Timers	occ sens	Existing	0.00	8	\$111.67	7%	15%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Small Office	Interior Lighting	Interior Lighting - Skylights	1000 sqft	Existing	0.00	15	\$1,006.35	15%	25%	\$0.00	0.00	0.00	AEG Research
Small Office	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	1000 sqft	Existing	204.58	16	\$1,807.69	5%	15%	\$0.64	295.89	385.78	7th Power Plan

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Small Office	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	Existing	1,938.92	11	\$30.80	15%	50%	\$0.00	1,036.09	1,235.08	Illinois TRM
Small Office	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	ELtg Watts	Existing	2.87	8	\$0.63	15%	25%	\$0.02	902.46	1,197.02	7th Power Plan
Small Office	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	Existing	97.84	8	\$55.10	15%	25%	\$0.06	456.33	623.27	Pacific Gas and Electric Research
Small Office	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	Existing	117.25	7	\$3,400.00	15%	30%	\$3.23	807.30	1,141.20	AEG Research
Small Office	Refrigeration	Refrigeration - Anti-Sweat Heater	Fridge Feet	Existing	9.95	8	\$48.18	0%	0%	\$0.75	0.00	0.00	7th Power Plan
Small Office	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	Existing	10.66	4	\$10.44	0%	0%	\$0.25	0.00	0.00	Michigan Energy Measures Database
Small Office	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	Existing	64.16	16	\$165.20	0%	0%	\$0.26	0.00	0.00	7th Power Plan
Small Office	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	Existing	8.44	15	\$335.85	0%	0%	\$4.20	0.00	0.00	7th Power Plan
Small Office	Refrigeration	Refrigeration - Strip Curtain	Walkin Door	Existing	0.00	2	\$10.41	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Small Office	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	Existing	0.13	15	\$45.43	0%	0%	\$34.74	0.00	0.00	Annual Energy Outlook, 2015
Small Office	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	Existing	2.74	15	\$313.82	0%	0%	\$11.58	0.00	0.00	Annual Energy Outlook, 2015
Small Office	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	Existing	43.10	10	\$506.05	0%	0%	\$1.56	0.00	0.00	Vermont TRM
Small Office	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	Existing	5.86	6	\$45.41	0%	0%	\$1.46	0.00	0.00	7th Power Plan
Small Office	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	Existing	0.47	8	\$3.72	0%	0%	\$1.21	0.00	0.00	7th Power Plan
Small Office	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	Existing	100.17	5	\$45.85	0%	0%	\$0.10	0.00	0.00	Illinois TRM
Small Office	Refrigeration	Grocery - ECMs for Display Cases	Fridge Case	Existing	24.39	16	\$165.20	0%	0%	\$0.69	0.00	0.00	7th Power Plan
Small Office	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	Existing	1,450.81	5	\$187.94	25%	75%	\$0.03	15.27	13.15	Illinois TRM
Small Office	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	Existing	1,847.17	18	\$8,526.67	25%	50%	\$0.38	280.60	296.94	7th Power Plan
Small Office	Office Equipment	Office Equipment - Smart Power Strips	Smart Strip	Existing	90.71	4	\$41.63	10%	50%	\$0.11	1,369.27	1,062.09	7th Power Plan

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Small Office	Cooling	Lodging - Guest Room Controls	LodgUnit	Existing	326.05	15	\$260.00	0%	0%	\$0.18	0.00	0.00	AEG-BEST
Small Office	Heating	Lodging - Guest Room Controls	LodgUnit	Existing	-174.45	15	\$260.00	0%	0%	\$0.18	0.00	0.00	AEG-BEST
Small Office	Office Equipment	Data Center - Best Practice Measures	sqft	Existing	0.07	5	\$0.00	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Office	Cooling	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Office	Ventilation	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Office	Interior Lighting	Data Center - Commercially Available Measures	sqft	Existing	0.03	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Office	Office Equipment	Data Center - Commercially Available Measures	sqft	Existing	0.02	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Office	Cooling	Data Center - Cutting Edge Measures	sqft	Existing	0.05	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Office	Office Equipment	Data Center - Cutting Edge Measures	sqft	Existing	0.01	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Office	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	Existing	615.13	18	\$4,092.80	0%	0%	\$0.54	0.00	0.00	7th Power Plan
Small Office	Miscellaneous	Pool Pump - Timer	perBldg	Existing	0.00	10	\$85.22	15%	75%	\$0.00	0.00	0.00	Ontario Power TRM
Small Office	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	Existing	1,506.40	6	\$35.93	1%	3%	\$0.00	0.00	94.93	7th Power Plan
Small Office	Cooling	Advanced New Construction Designs	sqft	Existing	0.72	25	\$4.11	0%	0%	\$0.07	0.00	0.00	AEG Research
Small Office	Heating	Advanced New Construction Designs	sqft	Existing	2.28	25	\$4.11	0%	0%	\$0.07	0.00	0.00	AEG Research
Small Office	Ventilation	Advanced New Construction Designs	sqft	Existing	0.26	25	\$4.11	0%	0%	\$0.07	0.00	0.00	AEG Research
Small Office	Water Heating	Advanced New Construction Designs	sqft	Existing	0.19	25	\$4.11	0%	0%	\$0.07	0.00	0.00	AEG Research
Small Office	Interior Lighting	Advanced New Construction Designs	sqft	Existing	0.89	25	\$4.11	0%	0%	\$0.07	0.00	0.00	AEG Research
Small Office	Exterior Lighting	Advanced New Construction Designs	sqft	Existing	0.40	25	\$4.11	0%	0%	\$0.07	0.00	0.00	AEG Research
Small Office	Cooling	Strategic Energy Management	sqft	Existing	0.15	3	\$0.22	3%	14%	\$0.07	248.51	246.04	AEG Research

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Small Office	Heating	Strategic Energy Management	sqft	Existing	0.36	3	\$0.22	3%	14%	\$0.07	139.74	131.33	AEG Research
Small Office	Ventilation	Strategic Energy Management	sqft	Existing	0.05	3	\$0.22	3%	14%	\$0.07	91.75	100.90	AEG Research
Small Office	Water Heating	Strategic Energy Management	sqft	Existing	0.03	3	\$0.22	3%	14%	\$0.07	16.87	25.34	AEG Research
Small Office	Interior Lighting	Strategic Energy Management	sqft	Existing	0.12	3	\$0.22	3%	14%	\$0.07	192.63	250.61	AEG Research
Small Office	Exterior Lighting	Strategic Energy Management	sqft	Existing	0.06	3	\$0.22	3%	14%	\$0.07	90.75	125.88	AEG Research
Small Office	Refrigeration	Strategic Energy Management	sqft	Existing	0.00	3	\$0.22	3%	14%	\$0.07	2.57	2.54	AEG Research
Small Office	Office Equipment	Strategic Energy Management	sqft	Existing	0.12	3	\$0.22	3%	14%	\$0.07	246.74	194.51	AEG Research
Small Office	Cooling	Commissioning	sqft	Existing	0.21	3	\$0.71	0%	0%	\$0.20	0.00	0.00	AEG Research
Small Office	Heating	Commissioning	sqft	Existing	0.48	3	\$0.71	0%	0%	\$0.20	0.00	0.00	AEG Research
Small Office	Ventilation	Commissioning	sqft	Existing	0.07	3	\$0.71	0%	0%	\$0.20	0.00	0.00	AEG Research
Small Office	Water Heating	Commissioning	sqft	Existing	0.01	3	\$0.71	0%	0%	\$0.20	0.00	0.00	AEG Research
Small Office	Interior Lighting	Commissioning	sqft	Existing	0.14	3	\$0.71	0%	0%	\$0.20	0.00	0.00	AEG Research
Small Office	Exterior Lighting	Commissioning	sqft	Existing	0.06	3	\$0.71	0%	0%	\$0.20	0.00	0.00	AEG Research
Small Office	Refrigeration	Commissioning	sqft	Existing	0.00	3	\$0.71	0%	0%	\$0.20	0.00	0.00	AEG Research
Small Office	Cooling	Retrocommissioning	sqft	Existing	0.21	3	\$0.45	11%	59%	\$0.13	1,493.54	1,483.19	AEG Research
Small Office	Heating	Retrocommissioning	sqft	Existing	0.49	3	\$0.45	11%	59%	\$0.13	839.83	791.69	AEG Research
Small Office	Ventilation	Retrocommissioning	sqft	Existing	0.07	3	\$0.45	11%	59%	\$0.13	551.43	608.24	AEG Research
Small Office	Water Heating	Retrocommissioning	sqft	Existing	0.01	3	\$0.45	11%	59%	\$0.13	33.80	50.91	AEG Research
Small Office	Interior Lighting	Retrocommissioning	sqft	Existing	0.14	3	\$0.45	11%	59%	\$0.13	964.78	1,259.01	AEG Research
Small Office	Exterior Lighting	Retrocommissioning	sqft	Existing	0.07	3	\$0.45	11%	59%	\$0.13	454.52	632.40	AEG Research
Small Office	Refrigeration	Retrocommissioning	sqft	Existing	0.00	3	\$0.45	11%	59%	\$0.13	25.73	25.48	AEG Research
Small Office	Interior Lighting	Fruit Storage - Lighting Controls	sqft	Existing	0.10	10	\$0.09	0%	0%	\$0.08	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx

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Small Office	Refrigeration	Fruit Storage Refrigeration Retrofit	sqft	Existing	0.01	10	\$1.09	0%	0%	\$13.67	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Office	Refrigeration	Fruit Storage Refrigeration Tuneup	sqft	Existing	0.00	3	\$0.23	0%	0%	\$28.03	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Office	Refrigeration	Fruit Storage Retrofit - CO2 Scrub	sqft	Existing	0.00	10	\$3.13	0%	0%	\$81.05	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Office	Refrigeration	Fruit Storage Retrofit - Membrane	sqft	Existing	0.00	10	\$0.68	0%	0%	\$87.95	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Office	Cooling	Insulation - Ceiling	sqft roof	New	0.00	45	\$1.28	15%	50%	\$0.17	0.00	0.00	Building Energy Simulation Tool
Small Office	Heating	Insulation - Ceiling	sqft roof	New	0.53	45	\$1.28	15%	50%	\$0.17	160.67	147.57	Building Energy Simulation Tool
Small Office	Ventilation	Insulation - Ceiling	sqft roof	New	0.05	45	\$1.28	15%	50%	\$0.17	79.80	78.67	Building Energy Simulation Tool
Small Office	Cooling	Insulation - Ducting	sqft duct	New	0.37	20	\$0.84	15%	50%	\$0.00	136.90	126.57	Building Energy Simulation Tool
Small Office	Heating	Insulation - Ducting	sqft duct	New	0.00	20	\$0.84	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Small Office	Ventilation	Insulation - Ducting	sqft duct	New	0.00	20	\$0.84	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Small Office	Cooling	Building Shell - Cool Roofs	sqft roof	New	0.07	20	\$0.78	45%	50%	\$10.00	13.47	12.75	Building Energy Simulation Tool
Small Office	Heating	Building Shell - Cool Roofs	sqft roof	New	-0.20	20	\$0.78	45%	50%	\$10.00	-8.77	-8.10	Building Energy Simulation Tool
Small Office	Ventilation	Building Shell - Cool Roofs	sqft roof	New	-0.02	20	\$0.78	45%	50%	\$10.00	-4.40	-4.39	Building Energy Simulation Tool
Small Office	Cooling	Insulation - Wall Cavity	sqft wall	New	-0.01	45	\$0.78	15%	50%	\$0.56	-7.84	-7.24	Building Energy Simulation Tool
Small Office	Heating	Insulation - Wall Cavity	sqft wall	New	0.11	45	\$0.78	15%	50%	\$0.56	12.39	11.40	Building Energy Simulation Tool
Small Office	Ventilation	Insulation - Wall Cavity	sqft wall	New	0.01	45	\$0.78	15%	50%	\$0.56	6.10	6.00	Building Energy Simulation Tool
Small Office	Cooling	HVAC - Duct Repair and Sealing	tonCool	New	17.59	18	\$0.57	15%	35%	\$0.00	40.95	37.70	Building Energy Simulation Tool
Small Office	Heating	HVAC - Duct Repair and Sealing	tonCool	New	50.02	18	\$0.57	15%	35%	\$0.00	23.86	21.91	Building Energy Simulation Tool
Small Office	Ventilation	HVAC - Duct Repair and Sealing	tonCool	New	4.27	18	\$0.57	15%	35%	\$0.00	11.74	11.55	Building Energy Simulation Tool

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Small Office	Cooling	Windows - High Efficiency Glazing	sqft window	New	3.90	30	\$35.93	66%	66%	\$0.09	0.00	0.00	7th Power Plan
Small Office	Heating	Windows - High Efficiency Glazing	sqft window	New	27.59	30	\$35.93	66%	66%	\$0.09	0.00	0.00	7th Power Plan
Small Office	Ventilation	Windows - High Efficiency Glazing	sqft window	New	1.38	30	\$35.93	66%	66%	\$0.09	0.00	0.00	7th Power Plan
Small Office	Cooling	Chiller - Chilled Water Reset	ChillCtrl	New	0.00	10	\$884.85	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Small Office	Cooling	Chiller - Chilled Water Variable-Flow System	HP cool	New	0.00	15	\$332.55	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Small Office	Cooling	Chiller - Variable Speed Fans	HP fan	New	0.00	15	\$208.36	15%	75%	\$0.00	0.00	0.00	New Jersey TRM
Small Office	Cooling	Water-Cooled Chiller - Condenser Water Reset	ChillCtrl	New	0.00	10	\$884.85	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Small Office	Cooling	HVAC - Economizer	HP cool	New	83.89	10	\$168.42	18%	75%	\$0.24	171.99	161.15	AEG-BEST
Small Office	Heating	Space Heating - Heat Recovery Ventilator	CFM	New	7.46	14	\$5.08	6%	75%	\$0.08	213.57	181.81	7th Power Plan
Small Office	Ventilation	Ventilation - ECM on VAV Boxes	sqft	New	0.14	18	\$0.25	15%	20%	\$0.11	33.97	33.43	7th Power Plan
Small Office	Ventilation	Ventilation - Variable Speed Control	sqft	New	0.04	15	\$181.39	19%	25%	\$334.20	5.32	5.25	AEG-BEST
Small Office	Ventilation	Ventilation - Demand Controlled	sqft	New	0.01	15	\$0.25	15%	25%	\$2.25	1.94	1.92	7th Power Plan
Small Office	Cooling	Destratification Fans (HVLS)	Strat Fan	New	2,793.32	15	\$7,270.90	15%	15%	\$0.04	0.00	0.00	AEG Research
Small Office	Heating	Destratification Fans (HVLS)	Strat Fan	New	18,738.59	15	\$7,270.90	15%	15%	\$0.04	0.00	0.00	AEG Research
Small Office	Cooling	RTU - Maintenance	tonCool	New	114.78	3	\$35.00	15%	45%	\$0.09	32.66	29.93	AEG Research
Small Office	Cooling	RTU - Advanced Controls	sqft	New	0.37	15	\$0.07	15%	45%	\$0.02	395.62	353.52	7th Power Plan
Small Office	Cooling	RTU - Evaporative Precooler	tonCool	New	245.36	15	\$681.62	15%	75%	\$0.28	1,758.34	1,622.63	AEG Research
Small Office	Cooling	Ductless Mini Split Heat Pump	tonCool	New	519.66	15	\$3,359.26	15%	75%	\$0.36	82.62	77.14	7th Power Plan
Small Office	Heating	Ductless Mini Split Heat Pump	tonCool	New	395.64	15	\$3,359.26	15%	75%	\$0.36	289.56	254.23	7th Power Plan
Small Office	Cooling	Thermostat - WiFi/Interactive	sqft	New	0.29	5	\$0.66	30%	40%	\$0.09	14.83	13.76	7th Power Plan
Small Office	Heating	Thermostat - WiFi/Interactive	sqft	New	1.06	5	\$0.66	30%	40%	\$0.09	11.21	9.56	7th Power Plan

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Small Office	Ventilation	Thermostat - WiFi/Interactive	sqft	New	0.09	5	\$0.66	30%	40%	\$0.09	5.63	5.55	7th Power Plan
Small Office	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	New	12.01	10	\$8.35	25%	65%	\$0.04	3.69	4.32	Illinois TRM
Small Office	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	New	12.53	10	\$11.64	25%	65%	\$0.05	1.93	2.26	7th Power Plan
Small Office	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	New	45.52	15	\$36.75	0%	0%	\$0.03	0.00	0.00	Hawaii TRM
Small Office	Water Heating	Water Heater - Pipe Insulation	PipeFeet	New	37.18	15	\$14.88	1%	75%	\$0.02	13.99	15.87	AEG-BEST
Small Office	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	New	8.27	4	\$144.04	25%	65%	\$1.71	1.19	1.47	7th Power Plan
Small Office	Water Heating	Water Heater - Thermostat Setback	WHunits	New	44.72	2	\$5.00	15%	75%	\$0.02	0.49	0.63	Illinois TRM
Small Office	Water Heating	Water Heater - Solar System	PipeFeet	New	129.88	20	\$215.28	1%	30%	\$0.06	19.79	22.35	AEG-BEST
Small Office	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.33	15	\$0.35	11%	23%	\$0.07	376.42	382.85	7th Power Plan
Small Office	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.45	15	\$0.58	11%	23%	\$0.08	517.60	527.94	7th Power Plan
Small Office	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	New	96.40	15	\$54.41	1%	3%	\$0.04	4.24	4.47	7th Power Plan
Small Office	Interior Lighting	Interior Lighting - Timeclocks and Timers	occ sens	New	0.00	8	\$111.67	7%	15%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Small Office	Interior Lighting	Interior Lighting - Skylights	1000 sqft	New	0.00	15	\$1,006.35	18%	25%	\$0.00	0.00	0.00	AEG Research
Small Office	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	1000 sqft	New	156.35	16	\$1,807.69	5%	15%	\$0.67	36.22	38.22	7th Power Plan
Small Office	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	New	1,485.51	11	\$30.80	15%	50%	\$0.00	98.70	102.31	Illinois TRM
Small Office	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	ELtg Watts	New	1.88	8	\$0.63	15%	25%	\$0.02	64.01	73.82	7th Power Plan
Small Office	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fxt	New	65.77	8	\$55.10	15%	25%	\$0.06	33.77	38.76	Pacific Gas and Electric Research
Small Office	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fxt	New	80.52	7	\$3,400.00	15%	30%	\$3.30	53.91	63.59	AEG Research
Small Office	Refrigeration	Refrigeration - Anti-Sweat Heater	Fridge Feet	New	6.84	8	\$48.18	0%	0%	\$1.10	0.00	0.00	7th Power Plan

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Small Office	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	New	7.75	4	\$10.44	0%	0%	\$0.35	0.00	0.00	Michigan Energy Measures Database
Small Office	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	New	46.98	16	\$165.20	0%	0%	\$0.36	0.00	0.00	7th Power Plan
Small Office	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	New	7.47	15	\$335.85	0%	0%	\$4.81	0.00	0.00	7th Power Plan
Small Office	Refrigeration	Refrigeration - Strip Curtain	Walkin Door	New	0.00	2	\$10.41	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Small Office	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	New	0.12	15	\$45.43	0%	0%	\$39.79	0.00	0.00	Annual Energy Outlook, 2015
Small Office	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	New	2.51	15	\$313.82	0%	0%	\$13.26	0.00	0.00	Annual Energy Outlook, 2015
Small Office	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	New	31.55	10	\$506.05	0%	0%	\$2.14	0.00	0.00	Vermont TRM
Small Office	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	New	5.33	6	\$45.41	0%	0%	\$1.63	0.00	0.00	7th Power Plan
Small Office	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	New	0.43	8	\$3.72	0%	0%	\$1.35	0.00	0.00	7th Power Plan
Small Office	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	New	93.81	5	\$45.85	0%	0%	\$0.11	0.00	0.00	Illinois TRM
Small Office	Refrigeration	Grocery - ECMs for Display Cases	Fridge Case	New	22.09	16	\$165.20	0%	0%	\$0.77	0.00	0.00	7th Power Plan
Small Office	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	New	1,425.77	5	\$187.94	25%	75%	\$0.03	0.87	0.71	Illinois TRM
Small Office	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	New	1,175.35	18	\$8,526.67	25%	50%	\$0.44	56.19	55.93	7th Power Plan
Small Office	Office Equipment	Office Equipment - Smart Power Strips	Smart Strip	New	106.43	4	\$41.63	10%	50%	\$0.09	57.64	42.27	7th Power Plan
Small Office	Cooling	Lodging - Guest Room Controls	LodgUnit	New	400.66	15	\$260.00	0%	0%	\$0.12	0.00	0.00	AEG-BEST
Small Office	Heating	Lodging - Guest Room Controls	LodgUnit	New	-172.95	15	\$260.00	0%	0%	\$0.12	0.00	0.00	AEG-BEST
Small Office	Office Equipment	Data Center - Best Practice Measures	sqft	New	0.07	5	\$0.00	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Office	Cooling	Data Center - Commercially Available Measures	sqft	New	0.01	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Office	Ventilation	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx

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Small Office	Interior Lighting	Data Center - Commercially Available Measures	sqft	New	0.03	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Office	Office Equipment	Data Center - Commercially Available Measures	sqft	New	0.02	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Office	Cooling	Data Center - Cutting Edge Measures	sqft	New	0.03	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Office	Office Equipment	Data Center - Cutting Edge Measures	sqft	New	0.01	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Office	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	New	392.88	18	\$4,092.80	0%	0%	\$0.62	0.00	0.00	7th Power Plan
Small Office	Miscellaneous	Pool Pump - Timer	perBldg	New	0.00	10	\$85.22	15%	75%	\$0.00	0.00	0.00	Ontario Power TRM
Small Office	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	New	1,506.40	6	\$35.93	1%	3%	\$0.00	0.00	3.81	7th Power Plan
Small Office	Cooling	Advanced New Construction Designs	sqft	New	0.71	25	\$4.11	10%	25%	\$0.07	509.65	468.53	AEG Research
Small Office	Heating	Advanced New Construction Designs	sqft	New	2.41	25	\$4.11	10%	25%	\$0.07	356.17	325.73	AEG Research
Small Office	Ventilation	Advanced New Construction Designs	sqft	New	0.21	25	\$4.11	10%	25%	\$0.07	176.89	175.05	AEG Research
Small Office	Water Heating	Advanced New Construction Designs	sqft	New	0.13	25	\$4.11	10%	25%	\$0.07	40.79	42.67	AEG Research
Small Office	Interior Lighting	Advanced New Construction Designs	sqft	New	0.66	25	\$4.11	10%	25%	\$0.07	457.02	460.90	AEG Research
Small Office	Exterior Lighting	Advanced New Construction Designs	sqft	New	0.25	25	\$4.11	10%	25%	\$0.07	193.03	198.28	AEG Research
Small Office	Cooling	Strategic Energy Management	sqft	New	0.10	3	\$0.20	3%	14%	\$0.07	4.54	4.16	AEG Research
Small Office	Heating	Strategic Energy Management	sqft	New	0.36	3	\$0.20	3%	14%	\$0.07	3.43	2.89	AEG Research
Small Office	Ventilation	Strategic Energy Management	sqft	New	0.03	3	\$0.20	3%	14%	\$0.07	1.72	1.69	AEG Research
Small Office	Water Heating	Strategic Energy Management	sqft	New	0.02	3	\$0.20	3%	14%	\$0.07	0.40	0.51	AEG Research
Small Office	Interior Lighting	Strategic Energy Management	sqft	New	0.10	3	\$0.20	3%	14%	\$0.07	4.48	5.27	AEG Research
Small Office	Exterior Lighting	Strategic Energy Management	sqft	New	0.04	3	\$0.20	3%	14%	\$0.07	1.89	2.38	AEG Research

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Small Office	Refrigeration	Strategic Energy Management	sqft	New	0.00	3	\$0.20	3%	14%	\$0.07	0.07	0.05	AEG Research
Small Office	Office Equipment	Strategic Energy Management	sqft	New	0.14	3	\$0.20	3%	14%	\$0.07	6.69	4.85	AEG Research
Small Office	Cooling	Commissioning	sqft	New	0.14	3	\$0.59	11%	59%	\$0.18	27.40	25.14	AEG Research
Small Office	Heating	Commissioning	sqft	New	0.50	3	\$0.59	11%	59%	\$0.18	20.71	17.42	AEG Research
Small Office	Ventilation	Commissioning	sqft	New	0.04	3	\$0.59	11%	59%	\$0.18	10.40	10.18	AEG Research
Small Office	Water Heating	Commissioning	sqft	New	0.01	3	\$0.59	11%	59%	\$0.18	0.81	1.02	AEG Research
Small Office	Interior Lighting	Commissioning	sqft	New	0.12	3	\$0.59	11%	59%	\$0.18	22.54	26.50	AEG Research
Small Office	Exterior Lighting	Commissioning	sqft	New	0.04	3	\$0.59	11%	59%	\$0.18	9.48	11.89	AEG Research
Small Office	Refrigeration	Commissioning	sqft	New	0.00	3	\$0.59	11%	59%	\$0.18	0.67	0.54	AEG Research
Small Office	Cooling	Retrocommissioning	sqft	New	0.14	3	\$0.38	0%	0%	\$0.12	0.00	0.00	AEG Research
Small Office	Heating	Retrocommissioning	sqft	New	0.50	3	\$0.38	0%	0%	\$0.12	0.00	0.00	AEG Research
Small Office	Ventilation	Retrocommissioning	sqft	New	0.04	3	\$0.38	0%	0%	\$0.12	0.00	0.00	AEG Research
Small Office	Water Heating	Retrocommissioning	sqft	New	0.01	3	\$0.38	0%	0%	\$0.12	0.00	0.00	AEG Research
Small Office	Interior Lighting	Retrocommissioning	sqft	New	0.12	3	\$0.38	0%	0%	\$0.12	0.00	0.00	AEG Research
Small Office	Exterior Lighting	Retrocommissioning	sqft	New	0.04	3	\$0.38	0%	0%	\$0.12	0.00	0.00	AEG Research
Small Office	Refrigeration	Retrocommissioning	sqft	New	0.00	3	\$0.38	0%	0%	\$0.12	0.00	0.00	AEG Research
Small Office	Interior Lighting	Fruit Storage - Lighting Controls	sqft	New	0.08	10	\$0.09	0%	0%	\$0.08	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Office	Refrigeration	Fruit Storage Refrigeration Retrofit	sqft	New	0.01	10	\$1.09	0%	0%	\$13.05	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Office	Refrigeration	Fruit Storage Refrigeration Tuneup	sqft	New	0.00	3	\$0.23	0%	0%	\$26.75	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Office	Refrigeration	Fruit Storage Retrofit - CO2 Scrub	sqft	New	0.01	10	\$3.13	0%	0%	\$77.37	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Office	Refrigeration	Fruit Storage Retrofit - Membrane	sqft	New	0.00	10	\$0.68	0%	0%	\$83.95	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Retail	Cooling	Insulation - Ceiling	sqft roof	Existing	0.00	45	\$1.28	15%	35%	\$0.04	0.00	0.00	Building Energy Simulation Tool

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Large Retail	Heating	Insulation - Ceiling	sqft roof	Existing	1.69	45	\$1.28	15%	35%	\$0.04	60.83	54.25	Building Energy Simulation Tool
Large Retail	Ventilation	Insulation - Ceiling	sqft roof	Existing	0.69	45	\$1.28	15%	35%	\$0.04	109.44	112.80	Building Energy Simulation Tool
Large Retail	Cooling	Insulation - Ducting	sqft duct	Existing	0.18	20	\$0.84	15%	35%	\$0.00	37.98	34.26	Building Energy Simulation Tool
Large Retail	Heating	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.84	15%	35%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Large Retail	Ventilation	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.84	15%	35%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Large Retail	Cooling	Building Shell - Cool Roofs	sqft roof	Existing	0.75	20	\$0.78	45%	50%	\$10.00	24.77	24.68	Building Energy Simulation Tool
Large Retail	Heating	Building Shell - Cool Roofs	sqft roof	Existing	-1.01	20	\$0.78	45%	50%	\$10.00	-8.84	-8.30	Building Energy Simulation Tool
Large Retail	Ventilation	Building Shell - Cool Roofs	sqft roof	Existing	-0.43	20	\$0.78	45%	50%	\$10.00	-16.54	-17.82	Building Energy Simulation Tool
Large Retail	Cooling	Insulation - Wall Cavity	sqft wall	Existing	-0.48	45	\$0.78	15%	35%	\$0.02	-66.94	-60.24	Building Energy Simulation Tool
Large Retail	Heating	Insulation - Wall Cavity	sqft wall	Existing	2.31	45	\$0.78	15%	35%	\$0.02	82.79	73.06	Building Energy Simulation Tool
Large Retail	Ventilation	Insulation - Wall Cavity	sqft wall	Existing	0.95	45	\$0.78	15%	35%	\$0.02	148.94	151.85	Building Energy Simulation Tool
Large Retail	Cooling	HVAC - Duct Repair and Sealing	tonCool	Existing	4.44	18	\$0.57	15%	25%	\$0.00	3.81	3.41	Building Energy Simulation Tool
Large Retail	Heating	HVAC - Duct Repair and Sealing	tonCool	Existing	7.54	18	\$0.57	15%	25%	\$0.00	1.63	1.46	Building Energy Simulation Tool
Large Retail	Ventilation	HVAC - Duct Repair and Sealing	tonCool	Existing	3.10	18	\$0.57	15%	25%	\$0.00	2.94	3.03	Building Energy Simulation Tool
Large Retail	Cooling	Windows - High Efficiency Glazing	sqft window	Existing	7.04	30	\$35.93	48%	48%	\$0.07	0.00	0.00	7th Power Plan
Large Retail	Heating	Windows - High Efficiency Glazing	sqft window	Existing	30.72	30	\$35.93	48%	48%	\$0.07	0.00	0.00	7th Power Plan
Large Retail	Ventilation	Windows - High Efficiency Glazing	sqft window	Existing	7.25	30	\$35.93	48%	48%	\$0.07	0.00	0.00	7th Power Plan
Large Retail	Cooling	Chiller - Chilled Water Reset	ChillCtrl	Existing	2,685.26	10	\$884.85	15%	75%	\$0.04	1.59	1.38	AEG-BEST
Large Retail	Cooling	Chiller - Chilled Water Variable-Flow System	HP cool	Existing	273.00	15	\$332.55	15%	75%	\$0.13	22.52	19.52	AEG-BEST

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Large Retail	Cooling	Chiller - Variable Speed Fans	HP fan	Existing	642.06	15	\$208.36	15%	75%	\$0.03	5.32	4.57	New Jersey TRM
Large Retail	Cooling	Water-Cooled Chiller - Condenser Water Reset	ChillCtrl	Existing	30,056.89	10	\$884.85	15%	75%	\$0.00	6.78	5.89	AEG-BEST
Large Retail	Cooling	HVAC - Economizer	HP cool	Existing	92.50	10	\$168.42	18%	75%	\$0.24	350.91	303.42	AEG-BEST
Large Retail	Heating	Space Heating - Heat Recovery Ventilator	CFM	Existing	2.45	14	\$5.08	3%	75%	\$0.23	236.71	202.43	7th Power Plan
Large Retail	Ventilation	Ventilation - ECM on VAV Boxes	sqft	Existing	0.58	18	\$0.25	15%	20%	\$0.04	68.34	71.01	7th Power Plan
Large Retail	Ventilation	Ventilation - Variable Speed Control	sqft	Existing	0.05	15	\$181.39	13%	50%	\$296.06	47.24	52.11	AEG-BEST
Large Retail	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.03	15	\$0.25	15%	75%	\$0.72	45.30	48.37	7th Power Plan
Large Retail	Cooling	Destratification Fans (HVLS)	Strat Fan	Existing	3,734.60	15	\$7,270.90	15%	30%	\$0.20	110.11	97.88	AEG Research
Large Retail	Heating	Destratification Fans (HVLS)	Strat Fan	Existing	0.19	15	\$7,270.90	15%	30%	\$0.20	0.00	0.00	AEG Research
Large Retail	Cooling	RTU - Maintenance	tonCool	Existing	62.62	3	\$35.00	15%	45%	\$0.17	143.02	138.55	AEG Research
Large Retail	Cooling	RTU - Advanced Controls	sqft	Existing	0.14	15	\$0.07	15%	45%	\$0.05	79.87	71.20	7th Power Plan
Large Retail	Cooling	RTU - Evaporative Precooler	tonCool	Existing	131.55	15	\$681.62	15%	75%	\$0.52	561.35	521.46	AEG Research
Large Retail	Cooling	Ductless Mini Split Heat Pump	tonCool	Existing	287.79	15	\$3,359.26	15%	25%	\$0.63	9.04	9.10	7th Power Plan
Large Retail	Heating	Ductless Mini Split Heat Pump	tonCool	Existing	226.94	15	\$3,359.26	15%	25%	\$0.63	40.47	36.24	7th Power Plan
Large Retail	Cooling	Thermostat - WiFi/Interactive	sqft	Existing	0.41	5	\$0.66	30%	40%	\$0.08	83.15	80.65	7th Power Plan
Large Retail	Heating	Thermostat - WiFi/Interactive	sqft	Existing	0.90	5	\$0.66	30%	40%	\$0.08	47.81	43.83	7th Power Plan
Large Retail	Ventilation	Thermostat - WiFi/Interactive	sqft	Existing	0.38	5	\$0.66	30%	40%	\$0.08	88.49	93.43	7th Power Plan
Large Retail	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	Existing	214.07	10	\$8.35	25%	65%	\$0.00	12.24	18.05	Illinois TRM
Large Retail	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	Existing	221.73	10	\$11.64	25%	65%	\$0.00	6.32	9.39	7th Power Plan
Large Retail	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	Existing	66.86	15	\$36.75	0%	0%	\$0.03	0.00	0.00	Hawaii TRM
Large Retail	Water Heating	Water Heater - Pipe Insulation	PipeFeet	Existing	681.87	15	\$14.88	16%	75%	\$0.00	24.23	33.84	AEG-BEST

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Large Retail	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	Existing	147.00	4	\$144.04	25%	65%	\$0.15	8.22	12.23	7th Power Plan
Large Retail	Water Heating	Water Heater - Thermostat Setback	WHUnits	Existing	66.99	2	\$5.00	15%	75%	\$0.02	11.96	17.63	Illinois TRM
Large Retail	Water Heating	Water Heater - Solar System	PipeFeet	Existing	2,362.00	20	\$215.28	1%	30%	\$0.01	40.81	57.90	AEG-BEST
Large Retail	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.63	15	\$0.35	3%	23%	\$0.04	357.71	399.46	7th Power Plan
Large Retail	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.86	15	\$0.58	3%	23%	\$0.05	482.66	549.90	7th Power Plan
Large Retail	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	Existing	609.83	15	\$54.41	1%	3%	\$0.01	10.15	12.39	7th Power Plan
Large Retail	Interior Lighting	Interior Lighting - Timeclocks and Timers	occ sens	Existing	0.00	8	\$111.67	7%	15%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Large Retail	Interior Lighting	Interior Lighting - Skylights	1000 sqft	Existing	0.00	15	\$1,006.35	15%	30%	\$0.00	0.00	0.00	AEG Research
Large Retail	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	1000 sqft	Existing	410.45	16	\$1,807.69	5%	15%	\$0.32	89.73	115.72	7th Power Plan
Large Retail	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	Existing	3,908.74	11	\$30.80	15%	50%	\$0.00	315.72	371.60	Illinois TRM
Large Retail	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	ELtg Watts	Existing	1.96	8	\$0.63	15%	25%	\$0.03	92.71	114.84	7th Power Plan
Large Retail	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	Existing	67.16	8	\$55.10	15%	25%	\$0.09	46.95	59.79	Pacific Gas and Electric Research
Large Retail	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	Existing	80.47	7	\$3,400.00	15%	30%	\$4.71	83.19	109.47	AEG Research
Large Retail	Refrigeration	Refrigeration - Anti-Sweat Heater	Fridge Feet	Existing	70.38	8	\$48.18	0%	25%	\$0.11	6.05	7.26	7th Power Plan
Large Retail	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	Existing	98.95	4	\$10.44	0%	25%	\$0.03	4.66	5.41	Michigan Energy Measures Database
Large Retail	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	Existing	813.11	16	\$165.20	0%	25%	\$0.02	2.19	2.37	7th Power Plan
Large Retail	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	Existing	158.50	15	\$335.85	0%	0%	\$0.22	0.00	0.00	7th Power Plan
Large Retail	Refrigeration	Refrigeration - Strip Curtain	Walkin Door	Existing	104.03	2	\$10.41	0%	25%	\$0.05	0.34	0.35	7th Power Plan
Large Retail	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBtuh	Existing	2.53	15	\$45.43	0%	13%	\$1.86	26.43	25.29	Annual Energy Outlook, 2015

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Large Retail	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	Existing	53.69	15	\$313.82	0%	13%	\$0.62	46.98	44.24	Annual Energy Outlook, 2015
Large Retail	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	Existing	534.66	10	\$506.05	0%	25%	\$0.13	1.43	1.57	Vermont TRM
Large Retail	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	Existing	49.99	6	\$45.41	0%	0%	\$0.17	0.00	0.00	7th Power Plan
Large Retail	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	Existing	4.03	8	\$3.72	0%	0%	\$0.14	0.00	0.00	7th Power Plan
Large Retail	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	Existing	723.87	5	\$45.85	0%	0%	\$0.01	0.00	0.00	Illinois TRM
Large Retail	Refrigeration	Grocery - ECMs for Display Cases	Fridge Case	Existing	212.33	16	\$165.20	0%	25%	\$0.08	6.38	6.00	7th Power Plan
Large Retail	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	Existing	1,430.75	5	\$187.94	25%	75%	\$0.03	32.98	28.58	Illinois TRM
Large Retail	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	Existing	4,935.46	18	\$8,526.67	25%	50%	\$0.14	116.25	121.40	7th Power Plan
Large Retail	Office Equipment	Office Equipment - Smart Power Strips	Smart Strip	Existing	19.53	4	\$41.63	10%	50%	\$0.50	44.06	34.78	7th Power Plan
Large Retail	Cooling	Lodging - Guest Room Controls	LodgUnit	Existing	317.16	15	\$260.00	0%	0%	\$0.16	0.00	0.00	AEG-BEST
Large Retail	Heating	Lodging - Guest Room Controls	LodgUnit	Existing	-144.34	15	\$260.00	0%	0%	\$0.16	0.00	0.00	AEG-BEST
Large Retail	Office Equipment	Data Center - Best Practice Measures	sqft	Existing	0.01	5	\$0.00	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Retail	Cooling	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Retail	Ventilation	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Retail	Interior Lighting	Data Center - Commercially Available Measures	sqft	Existing	0.05	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Retail	Office Equipment	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Retail	Cooling	Data Center - Cutting Edge Measures	sqft	Existing	0.04	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Retail	Office Equipment	Data Center - Cutting Edge Measures	sqft	Existing	0.00	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Retail	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	Existing	16,807.90	18	\$4,092.80	0%	0%	\$0.02	0.00	0.00	7th Power Plan

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Large Retail	Miscellaneous	Pool Pump - Timer	perBldg	Existing	0.00	10	\$85.22	15%	75%	\$0.00	0.00	0.00	Ontario Power TRM
Large Retail	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	Existing	16,944.96	6	\$35.93	1%	3%	\$0.00	0.00	16.33	7th Power Plan
Large Retail	Cooling	Advanced New Construction Designs	sqft	Existing	0.82	25	\$4.11	0%	0%	\$0.06	0.00	0.00	AEG Research
Large Retail	Heating	Advanced New Construction Designs	sqft	Existing	1.96	25	\$4.11	0%	0%	\$0.06	0.00	0.00	AEG Research
Large Retail	Ventilation	Advanced New Construction Designs	sqft	Existing	0.63	25	\$4.11	0%	0%	\$0.06	0.00	0.00	AEG Research
Large Retail	Water Heating	Advanced New Construction Designs	sqft	Existing	0.21	25	\$4.11	0%	0%	\$0.06	0.00	0.00	AEG Research
Large Retail	Interior Lighting	Advanced New Construction Designs	sqft	Existing	1.25	25	\$4.11	0%	0%	\$0.06	0.00	0.00	AEG Research
Large Retail	Exterior Lighting	Advanced New Construction Designs	sqft	Existing	0.27	25	\$4.11	0%	0%	\$0.06	0.00	0.00	AEG Research
Large Retail	Cooling	Strategic Energy Management	sqft	Existing	0.14	3	\$0.24	0%	3%	\$0.07	8.84	8.70	AEG Research
Large Retail	Heating	Strategic Energy Management	sqft	Existing	0.30	3	\$0.24	0%	3%	\$0.07	5.15	4.63	AEG Research
Large Retail	Ventilation	Strategic Energy Management	sqft	Existing	0.13	3	\$0.24	0%	3%	\$0.07	9.63	10.42	AEG Research
Large Retail	Water Heating	Strategic Energy Management	sqft	Existing	0.03	3	\$0.24	0%	3%	\$0.07	1.12	1.68	AEG Research
Large Retail	Interior Lighting	Strategic Energy Management	sqft	Existing	0.19	3	\$0.24	0%	3%	\$0.07	12.50	16.42	AEG Research
Large Retail	Exterior Lighting	Strategic Energy Management	sqft	Existing	0.04	3	\$0.24	0%	3%	\$0.07	2.55	3.29	AEG Research
Large Retail	Refrigeration	Strategic Energy Management	sqft	Existing	0.03	3	\$0.24	0%	3%	\$0.07	2.24	2.17	AEG Research
Large Retail	Office Equipment	Strategic Energy Management	sqft	Existing	0.03	3	\$0.24	0%	3%	\$0.07	2.17	1.74	AEG Research
Large Retail	Cooling	Commissioning	sqft	Existing	0.18	3	\$0.85	0%	0%	\$0.21	0.00	0.00	AEG Research
Large Retail	Heating	Commissioning	sqft	Existing	0.40	3	\$0.85	0%	0%	\$0.21	0.00	0.00	AEG Research
Large Retail	Ventilation	Commissioning	sqft	Existing	0.17	3	\$0.85	0%	0%	\$0.21	0.00	0.00	AEG Research
Large Retail	Water Heating	Commissioning	sqft	Existing	0.01	3	\$0.85	0%	0%	\$0.21	0.00	0.00	AEG Research
Large Retail	Interior Lighting	Commissioning	sqft	Existing	0.22	3	\$0.85	0%	0%	\$0.21	0.00	0.00	AEG Research

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Large Retail	Exterior Lighting	Commissioning	sqft	Existing	0.04	3	\$0.85	0%	0%	\$0.21	0.00	0.00	AEG Research
Large Retail	Refrigeration	Commissioning	sqft	Existing	0.07	3	\$0.85	0%	0%	\$0.21	0.00	0.00	AEG Research
Large Retail	Cooling	Retrocommissioning	sqft	Existing	0.19	3	\$0.54	10%	65%	\$0.13	224.03	220.73	AEG Research
Large Retail	Heating	Retrocommissioning	sqft	Existing	0.42	3	\$0.54	10%	65%	\$0.13	130.46	117.46	AEG Research
Large Retail	Ventilation	Retrocommissioning	sqft	Existing	0.18	3	\$0.54	10%	65%	\$0.13	244.13	264.34	AEG Research
Large Retail	Water Heating	Retrocommissioning	sqft	Existing	0.01	3	\$0.54	10%	65%	\$0.13	9.50	14.21	AEG Research
Large Retail	Interior Lighting	Retrocommissioning	sqft	Existing	0.22	3	\$0.54	10%	65%	\$0.13	264.11	347.07	AEG Research
Large Retail	Exterior Lighting	Retrocommissioning	sqft	Existing	0.04	3	\$0.54	10%	65%	\$0.13	53.83	69.63	AEG Research
Large Retail	Refrigeration	Retrocommissioning	sqft	Existing	0.07	3	\$0.54	10%	65%	\$0.13	94.81	91.61	AEG Research
Large Retail	Interior Lighting	Fruit Storage - Lighting Controls	sqft	Existing	0.16	10	\$0.09	0%	0%	\$0.05	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Retail	Refrigeration	Fruit Storage Refrigeration Retrofit	sqft	Existing	0.22	10	\$1.09	0%	0%	\$0.63	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Retail	Refrigeration	Fruit Storage Refrigeration Tuneup	sqft	Existing	0.05	3	\$0.23	0%	0%	\$1.30	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Retail	Refrigeration	Fruit Storage Retrofit - CO2 Scrub	sqft	Existing	0.10	10	\$3.13	0%	0%	\$3.76	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Retail	Refrigeration	Fruit Storage Retrofit - Membrane	sqft	Existing	0.02	10	\$0.68	0%	0%	\$4.08	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Retail	Cooling	Insulation - Ceiling	sqft roof	New	0.00	45	\$1.28	15%	50%	\$0.04	0.00	0.00	Building Energy Simulation Tool
Large Retail	Heating	Insulation - Ceiling	sqft roof	New	1.61	45	\$1.28	15%	50%	\$0.04	22.64	20.89	Building Energy Simulation Tool
Large Retail	Ventilation	Insulation - Ceiling	sqft roof	New	0.43	45	\$1.28	15%	50%	\$0.04	33.54	33.04	Building Energy Simulation Tool
Large Retail	Cooling	Insulation - Ducting	sqft duct	New	0.22	20	\$0.84	15%	25%	\$0.00	6.57	6.11	Building Energy Simulation Tool
Large Retail	Heating	Insulation - Ducting	sqft duct	New	0.00	20	\$0.84	15%	25%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Large Retail	Ventilation	Insulation - Ducting	sqft duct	New	0.00	20	\$0.84	15%	25%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Large Retail	Cooling	Building Shell - Cool Roofs	sqft roof	New	0.16	20	\$0.78	45%	50%	\$10.00	1.56	1.47	Building Energy Simulation Tool

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Large Retail	Heating	Building Shell - Cool Roofs	sqft roof	New	-0.42	20	\$0.78	45%	50%	\$10.00	-0.84	-0.78	Building Energy Simulation Tool
Large Retail	Ventilation	Building Shell - Cool Roofs	sqft roof	New	-0.11	20	\$0.78	45%	50%	\$10.00	-1.24	-1.24	Building Energy Simulation Tool
Large Retail	Cooling	Insulation - Wall Cavity	sqft wall	New	-0.02	45	\$0.78	15%	50%	\$0.04	-1.56	-1.44	Building Energy Simulation Tool
Large Retail	Heating	Insulation - Wall Cavity	sqft wall	New	1.19	45	\$0.78	15%	50%	\$0.04	16.59	15.26	Building Energy Simulation Tool
Large Retail	Ventilation	Insulation - Wall Cavity	sqft wall	New	0.32	45	\$0.78	15%	50%	\$0.04	24.57	24.14	Building Energy Simulation Tool
Large Retail	Cooling	HVAC - Duct Repair and Sealing	tonCool	New	8.56	18	\$0.57	15%	25%	\$0.00	2.01	1.85	Building Energy Simulation Tool
Large Retail	Heating	HVAC - Duct Repair and Sealing	tonCool	New	19.11	18	\$0.57	15%	25%	\$0.00	0.89	0.82	Building Energy Simulation Tool
Large Retail	Ventilation	HVAC - Duct Repair and Sealing	tonCool	New	5.10	18	\$0.57	15%	25%	\$0.00	1.32	1.30	Building Energy Simulation Tool
Large Retail	Cooling	Windows - High Efficiency Glazing	sqft window	New	5.73	30	\$35.93	66%	66%	\$0.07	0.00	0.00	7th Power Plan
Large Retail	Heating	Windows - High Efficiency Glazing	sqft window	New	29.36	30	\$35.93	66%	66%	\$0.07	0.00	0.00	7th Power Plan
Large Retail	Ventilation	Windows - High Efficiency Glazing	sqft window	New	4.50	30	\$35.93	66%	66%	\$0.07	0.00	0.00	7th Power Plan
Large Retail	Cooling	Chiller - Chilled Water Reset	ChillCtrl	New	2,162.85	10	\$884.85	15%	75%	\$0.05	0.15	0.12	AEG-BEST
Large Retail	Cooling	Chiller - Chilled Water Variable-Flow System	HP cool	New	219.91	15	\$332.55	15%	75%	\$0.16	2.63	2.26	AEG-BEST
Large Retail	Cooling	Chiller - Variable Speed Fans	HP fan	New	516.29	15	\$208.36	15%	75%	\$0.04	0.62	0.53	New Jersey TRM
Large Retail	Cooling	Water-Cooled Chiller - Condenser Water Reset	ChillCtrl	New	30,240.85	10	\$884.85	15%	75%	\$0.00	0.78	0.65	AEG-BEST
Large Retail	Cooling	HVAC - Economizer	HP cool	New	74.53	10	\$168.42	18%	75%	\$0.29	31.44	27.36	AEG-BEST
Large Retail	Heating	Space Heating - Heat Recovery Ventilator	CFM	New	2.30	14	\$5.08	6%	75%	\$0.24	23.08	20.29	7th Power Plan
Large Retail	Ventilation	Ventilation - ECM on VAV Boxes	sqft	New	0.40	18	\$0.25	15%	20%	\$0.04	12.89	12.75	7th Power Plan
Large Retail	Ventilation	Ventilation - Variable Speed Control	sqft	New	0.04	15	\$181.39	19%	50%	\$325.35	4.03	4.01	AEG-BEST

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Large Retail	Ventilation	Ventilation - Demand Controlled	sqft	New	0.02	15	\$0.25	15%	75%	\$0.80	4.41	4.40	7th Power Plan
Large Retail	Cooling	Destratification Fans (HVLS)	Strat Fan	New	2,955.77	15	\$7,270.90	15%	30%	\$0.24	12.37	11.30	AEG Research
Large Retail	Heating	Destratification Fans (HVLS)	Strat Fan	New	0.19	15	\$7,270.90	15%	30%	\$0.24	0.00	0.00	AEG Research
Large Retail	Cooling	RTU - Maintenance	tonCool	New	70.70	3	\$35.00	15%	45%	\$0.15	3.84	3.42	AEG Research
Large Retail	Cooling	RTU - Advanced Controls	sqft	New	0.16	15	\$0.07	15%	45%	\$0.04	22.75	20.31	7th Power Plan
Large Retail	Cooling	RTU - Evaporative Precooler	tonCool	New	147.53	15	\$681.62	15%	75%	\$0.46	203.05	186.58	AEG Research
Large Retail	Cooling	Ductless Mini Split Heat Pump	tonCool	New	367.67	15	\$3,359.26	15%	25%	\$0.55	2.33	2.13	7th Power Plan
Large Retail	Heating	Ductless Mini Split Heat Pump	tonCool	New	232.41	15	\$3,359.26	15%	25%	\$0.55	6.00	5.31	7th Power Plan
Large Retail	Cooling	Thermostat - WiFi/Interactive	sqft	New	0.34	5	\$0.66	30%	40%	\$0.09	2.48	2.24	7th Power Plan
Large Retail	Heating	Thermostat - WiFi/Interactive	sqft	New	0.87	5	\$0.66	30%	40%	\$0.09	1.28	1.09	7th Power Plan
Large Retail	Ventilation	Thermostat - WiFi/Interactive	sqft	New	0.23	5	\$0.66	30%	40%	\$0.09	1.89	1.88	7th Power Plan
Large Retail	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	New	45.98	10	\$8.35	25%	65%	\$0.01	0.85	0.99	Illinois TRM
Large Retail	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	New	48.00	10	\$11.64	25%	65%	\$0.01	0.44	0.52	7th Power Plan
Large Retail	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	New	43.59	15	\$36.75	0%	0%	\$0.03	0.00	0.00	Hawaii TRM
Large Retail	Water Heating	Water Heater - Pipe Insulation	PipeFeet	New	426.94	15	\$14.88	1%	75%	\$0.00	3.22	3.65	AEG-BEST
Large Retail	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	New	31.59	4	\$144.04	25%	65%	\$0.45	0.27	0.34	7th Power Plan
Large Retail	Water Heating	Water Heater - Thermostat Setback	WHunits	New	43.67	2	\$5.00	15%	75%	\$0.02	0.11	0.14	Illinois TRM
Large Retail	Water Heating	Water Heater - Solar System	PipeFeet	New	1,492.59	20	\$215.28	1%	30%	\$0.01	4.56	5.14	AEG-BEST
Large Retail	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.53	15	\$0.35	11%	23%	\$0.04	81.75	83.11	7th Power Plan
Large Retail	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.72	15	\$0.58	11%	23%	\$0.05	112.39	114.58	7th Power Plan
Large Retail	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	New	506.72	15	\$54.41	1%	3%	\$0.01	0.90	0.94	7th Power Plan

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Large Retail	Interior Lighting	Interior Lighting - Timeclocks and Timers	occ sens	New	0.00	8	\$111.67	7%	15%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Large Retail	Interior Lighting	Interior Lighting - Skylights	1000 sqft	New	0.00	15	\$1,006.35	18%	33%	\$0.00	0.00	0.00	AEG Research
Large Retail	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	1000 sqft	New	304.24	16	\$1,807.69	5%	15%	\$0.35	9.44	9.99	7th Power Plan
Large Retail	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	New	2,909.74	11	\$30.80	15%	50%	\$0.00	25.94	26.82	Illinois TRM
Large Retail	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	ELtg Watts	New	1.42	8	\$0.63	15%	25%	\$0.03	6.06	6.84	7th Power Plan
Large Retail	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	New	49.72	8	\$55.10	15%	25%	\$0.08	3.19	3.59	Pacific Gas and Electric Research
Large Retail	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	New	60.35	7	\$3,400.00	15%	30%	\$4.61	5.05	5.86	AEG Research
Large Retail	Refrigeration	Refrigeration - Anti-Sweat Heater	Fridge Feet	New	48.59	8	\$48.18	0%	25%	\$0.16	0.55	0.46	7th Power Plan
Large Retail	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	New	69.25	4	\$10.44	0%	25%	\$0.04	0.19	0.15	Michigan Energy Measures Database
Large Retail	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	New	629.99	16	\$165.20	0%	25%	\$0.03	0.33	0.29	7th Power Plan
Large Retail	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	New	146.89	15	\$335.85	0%	0%	\$0.25	0.00	0.00	7th Power Plan
Large Retail	Refrigeration	Refrigeration - Strip Curtain	Walkin Door	New	90.22	2	\$10.41	0%	25%	\$0.06	0.00	0.00	7th Power Plan
Large Retail	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBtuh	New	2.38	15	\$45.43	0%	13%	\$2.03	4.35	3.71	Annual Energy Outlook, 2015
Large Retail	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	New	49.77	15	\$313.82	0%	13%	\$0.68	7.57	6.47	Annual Energy Outlook, 2015
Large Retail	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	New	420.54	10	\$506.05	0%	25%	\$0.16	0.17	0.14	Vermont TRM
Large Retail	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	New	45.57	6	\$45.41	0%	0%	\$0.19	0.00	0.00	7th Power Plan
Large Retail	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	New	3.67	8	\$3.72	0%	0%	\$0.16	0.00	0.00	7th Power Plan
Large Retail	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	New	670.03	5	\$45.85	0%	0%	\$0.02	0.00	0.00	Illinois TRM
Large Retail	Refrigeration	Grocery - ECMs for Display Cases	Fridge Case	New	190.12	16	\$165.20	0%	25%	\$0.09	1.02	0.88	7th Power Plan

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Large Retail	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	New	1,400.09	5	\$187.94	25%	75%	\$0.03	2.10	1.71	Illinois TRM
Large Retail	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	New	3,397.57	18	\$8,526.67	25%	50%	\$0.15	22.03	21.82	7th Power Plan
Large Retail	Office Equipment	Office Equipment - Smart Power Strips	Smart Strip	New	20.68	4	\$41.63	10%	50%	\$0.47	1.52	1.11	7th Power Plan
Large Retail	Cooling	Lodging - Guest Room Controls	LodgUnit	New	390.35	15	\$260.00	0%	0%	\$0.11	0.00	0.00	AEG-BEST
Large Retail	Heating	Lodging - Guest Room Controls	LodgUnit	New	-144.11	15	\$260.00	0%	0%	\$0.11	0.00	0.00	AEG-BEST
Large Retail	Office Equipment	Data Center - Best Practice Measures	sqft	New	0.01	5	\$0.00	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Retail	Cooling	Data Center - Commercially Available Measures	sqft	New	0.01	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Retail	Ventilation	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Retail	Interior Lighting	Data Center - Commercially Available Measures	sqft	New	0.04	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Retail	Office Equipment	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Retail	Cooling	Data Center - Cutting Edge Measures	sqft	New	0.04	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Retail	Office Equipment	Data Center - Cutting Edge Measures	sqft	New	0.00	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Retail	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	New	11,542.67	18	\$4,092.80	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Large Retail	Miscellaneous	Pool Pump - Timer	perBldg	New	0.00	10	\$85.22	15%	75%	\$0.00	0.00	0.00	Ontario Power TRM
Large Retail	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	New	5,648.32	6	\$35.93	1%	3%	\$0.00	0.00	0.59	7th Power Plan
Large Retail	Cooling	Advanced New Construction Designs	sqft	New	0.81	25	\$4.11	10%	30%	\$0.06	112.29	102.93	AEG Research
Large Retail	Heating	Advanced New Construction Designs	sqft	New	1.99	25	\$4.11	10%	30%	\$0.06	54.45	50.12	AEG Research
Large Retail	Ventilation	Advanced New Construction Designs	sqft	New	0.53	25	\$4.11	10%	30%	\$0.06	79.61	79.11	AEG Research
Large Retail	Water Heating	Advanced New Construction Designs	sqft	New	0.14	25	\$4.11	10%	30%	\$0.06	12.03	12.58	AEG Research

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Large Retail	Interior Lighting	Advanced New Construction Designs	sqft	New	1.04	25	\$4.11	10%	30%	\$0.06	130.51	131.66	AEG Research
Large Retail	Exterior Lighting	Advanced New Construction Designs	sqft	New	0.18	25	\$4.11	10%	30%	\$0.06	24.51	24.92	AEG Research
Large Retail	Cooling	Strategic Energy Management	sqft	New	0.12	3	\$0.21	0%	3%	\$0.07	0.21	0.18	AEG Research
Large Retail	Heating	Strategic Energy Management	sqft	New	0.29	3	\$0.21	0%	3%	\$0.07	0.11	0.09	AEG Research
Large Retail	Ventilation	Strategic Energy Management	sqft	New	0.08	3	\$0.21	0%	3%	\$0.07	0.16	0.16	AEG Research
Large Retail	Water Heating	Strategic Energy Management	sqft	New	0.02	3	\$0.21	0%	3%	\$0.07	0.02	0.03	AEG Research
Large Retail	Interior Lighting	Strategic Energy Management	sqft	New	0.16	3	\$0.21	0%	3%	\$0.07	0.26	0.30	AEG Research
Large Retail	Exterior Lighting	Strategic Energy Management	sqft	New	0.03	3	\$0.21	0%	3%	\$0.07	0.05	0.06	AEG Research
Large Retail	Refrigeration	Strategic Energy Management	sqft	New	0.04	3	\$0.21	0%	3%	\$0.07	0.07	0.06	AEG Research
Large Retail	Office Equipment	Strategic Energy Management	sqft	New	0.03	3	\$0.21	0%	3%	\$0.07	0.05	0.03	AEG Research
Large Retail	Cooling	Commissioning	sqft	New	0.16	3	\$0.71	10%	65%	\$0.18	5.23	4.65	AEG Research
Large Retail	Heating	Commissioning	sqft	New	0.41	3	\$0.71	10%	65%	\$0.18	2.69	2.26	AEG Research
Large Retail	Ventilation	Commissioning	sqft	New	0.11	3	\$0.71	10%	65%	\$0.18	3.99	3.95	AEG Research
Large Retail	Water Heating	Commissioning	sqft	New	0.01	3	\$0.71	10%	65%	\$0.18	0.20	0.26	AEG Research
Large Retail	Interior Lighting	Commissioning	sqft	New	0.18	3	\$0.71	10%	65%	\$0.18	5.45	6.28	AEG Research
Large Retail	Exterior Lighting	Commissioning	sqft	New	0.03	3	\$0.71	10%	65%	\$0.18	1.03	1.27	AEG Research
Large Retail	Refrigeration	Commissioning	sqft	New	0.10	3	\$0.71	10%	65%	\$0.18	2.89	2.34	AEG Research
Large Retail	Cooling	Retrocommissioning	sqft	New	0.16	3	\$0.45	0%	0%	\$0.12	0.00	0.00	AEG Research
Large Retail	Heating	Retrocommissioning	sqft	New	0.41	3	\$0.45	0%	0%	\$0.12	0.00	0.00	AEG Research
Large Retail	Ventilation	Retrocommissioning	sqft	New	0.11	3	\$0.45	0%	0%	\$0.12	0.00	0.00	AEG Research
Large Retail	Water Heating	Retrocommissioning	sqft	New	0.01	3	\$0.45	0%	0%	\$0.12	0.00	0.00	AEG Research
Large Retail	Interior Lighting	Retrocommissioning	sqft	New	0.18	3	\$0.45	0%	0%	\$0.12	0.00	0.00	AEG Research

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Large Retail	Exterior Lighting	Retrocommissioning	sqft	New	0.03	3	\$0.45	0%	0%	\$0.12	0.00	0.00	AEG Research
Large Retail	Refrigeration	Retrocommissioning	sqft	New	0.10	3	\$0.45	0%	0%	\$0.12	0.00	0.00	AEG Research
Large Retail	Interior Lighting	Fruit Storage - Lighting Controls	sqft	New	0.13	10	\$0.09	0%	0%	\$0.05	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Retail	Refrigeration	Fruit Storage Refrigeration Retrofit	sqft	New	0.31	10	\$1.09	0%	0%	\$0.46	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Retail	Refrigeration	Fruit Storage Refrigeration Tuneup	sqft	New	0.08	3	\$0.23	0%	0%	\$0.95	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Retail	Refrigeration	Fruit Storage Retrofit - CO2 Scrub	sqft	New	0.15	10	\$3.13	0%	0%	\$2.75	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Retail	Refrigeration	Fruit Storage Retrofit - Membrane	sqft	New	0.03	10	\$0.68	0%	0%	\$2.99	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Retail	Cooling	Insulation - Ceiling	sqft roof	Existing	0.16	45	\$1.28	15%	35%	\$0.11	258.95	234.64	Building Energy Simulation Tool
Small Retail	Heating	Insulation - Ceiling	sqft roof	Existing	0.62	45	\$1.28	15%	35%	\$0.11	234.64	209.69	Building Energy Simulation Tool
Small Retail	Ventilation	Insulation - Ceiling	sqft roof	Existing	0.10	45	\$1.28	15%	35%	\$0.11	174.85	176.31	Building Energy Simulation Tool
Small Retail	Cooling	Insulation - Ducting	sqft duct	Existing	0.33	20	\$0.84	15%	50%	\$0.00	236.01	214.82	Building Energy Simulation Tool
Small Retail	Heating	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.84	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Small Retail	Ventilation	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.84	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Small Retail	Cooling	Building Shell - Cool Roofs	sqft roof	Existing	0.31	20	\$0.78	45%	50%	\$10.00	118.57	118.49	Building Energy Simulation Tool
Small Retail	Heating	Building Shell - Cool Roofs	sqft roof	Existing	-0.36	20	\$0.78	45%	50%	\$10.00	-32.34	-31.07	Building Energy Simulation Tool
Small Retail	Ventilation	Building Shell - Cool Roofs	sqft roof	Existing	-0.06	20	\$0.78	45%	50%	\$10.00	-26.81	-28.03	Building Energy Simulation Tool
Small Retail	Cooling	Insulation - Wall Cavity	sqft wall	Existing	-0.08	45	\$0.78	15%	35%	\$0.02	-36.84	-33.09	Building Energy Simulation Tool
Small Retail	Heating	Insulation - Wall Cavity	sqft wall	Existing	2.79	45	\$0.78	15%	35%	\$0.02	319.21	282.35	Building Energy Simulation Tool
Small Retail	Ventilation	Insulation - Wall Cavity	sqft wall	Existing	0.43	45	\$0.78	15%	35%	\$0.02	239.75	238.20	Building Energy Simulation Tool

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Small Retail	Cooling	HVAC - Duct Repair and Sealing	tonCool	Existing	3.92	18	\$0.57	15%	50%	\$10.00	41.47	41.41	Building Energy Simulation Tool
Small Retail	Heating	HVAC - Duct Repair and Sealing	tonCool	Existing	-6.69	18	\$0.57	15%	50%	\$10.00	-16.94	-16.29	Building Energy Simulation Tool
Small Retail	Ventilation	HVAC - Duct Repair and Sealing	tonCool	Existing	-1.13	18	\$0.57	15%	50%	\$10.00	-14.12	-14.74	Building Energy Simulation Tool
Small Retail	Cooling	Windows - High Efficiency Glazing	sqft window	Existing	6.81	30	\$35.93	48%	48%	\$0.07	0.00	0.00	7th Power Plan
Small Retail	Heating	Windows - High Efficiency Glazing	sqft window	Existing	32.43	30	\$35.93	48%	48%	\$0.07	0.00	0.00	7th Power Plan
Small Retail	Ventilation	Windows - High Efficiency Glazing	sqft window	Existing	2.87	30	\$35.93	48%	48%	\$0.07	0.00	0.00	7th Power Plan
Small Retail	Cooling	Chiller - Chilled Water Reset	ChillCtrl	Existing	0.00	10	\$884.85	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Small Retail	Cooling	Chiller - Chilled Water Variable-Flow System	HP cool	Existing	0.00	15	\$332.55	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Small Retail	Cooling	Chiller - Variable Speed Fans	HP fan	Existing	0.00	15	\$208.36	15%	75%	\$0.00	0.00	0.00	New Jersey TRM
Small Retail	Cooling	Water-Cooled Chiller - Condenser Water Reset	ChillCtrl	Existing	0.00	10	\$884.85	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Small Retail	Cooling	HVAC - Economizer	HP cool	Existing	92.35	10	\$168.42	18%	75%	\$0.24	1,335.25	1,173.36	AEG-BEST
Small Retail	Heating	Space Heating - Heat Recovery Ventilator	CFM	Existing	2.71	14	\$5.08	3%	75%	\$0.21	913.02	783.48	7th Power Plan
Small Retail	Ventilation	Ventilation - ECM on VAV Boxes	sqft	Existing	0.20	18	\$0.25	15%	20%	\$0.11	92.25	92.64	7th Power Plan
Small Retail	Ventilation	Ventilation - Variable Speed Control	sqft	Existing	0.05	15	\$181.39	13%	25%	\$325.01	55.40	58.61	AEG-BEST
Small Retail	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.01	15	\$0.25	15%	25%	\$2.18	9.96	10.32	7th Power Plan
Small Retail	Cooling	Destratification Fans (HVLS)	Strat Fan	Existing	3,979.11	15	\$7,270.90	15%	15%	\$0.04	0.00	0.00	AEG Research
Small Retail	Heating	Destratification Fans (HVLS)	Strat Fan	Existing	17,532.48	15	\$7,270.90	15%	15%	\$0.04	0.00	0.00	AEG Research
Small Retail	Cooling	RTU - Maintenance	tonCool	Existing	55.55	3	\$35.00	15%	45%	\$0.19	514.42	498.45	AEG Research
Small Retail	Cooling	RTU - Advanced Controls	sqft	Existing	0.25	15	\$0.07	15%	45%	\$0.03	573.85	512.10	7th Power Plan
Small Retail	Cooling	RTU - Evaporative Precooler	tonCool	Existing	116.29	15	\$681.62	15%	75%	\$0.59	2,005.05	1,873.24	AEG Research
Small Retail	Cooling	Ductless Mini Split Heat Pump	tonCool	Existing	225.10	15	\$3,359.26	15%	75%	\$0.68	121.93	122.84	7th Power Plan

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Small Retail	Heating	Ductless Mini Split Heat Pump	tonCool	Existing	255.90	15	\$3,359.26	15%	75%	\$0.68	904.96	810.42	7th Power Plan
Small Retail	Cooling	Thermostat - WiFi/Interactive	sqft	Existing	0.42	5	\$0.66	30%	40%	\$0.09	325.84	316.41	7th Power Plan
Small Retail	Heating	Thermostat - WiFi/Interactive	sqft	Existing	0.99	5	\$0.66	30%	40%	\$0.09	184.39	169.42	7th Power Plan
Small Retail	Ventilation	Thermostat - WiFi/Interactive	sqft	Existing	0.16	5	\$0.66	30%	40%	\$0.09	144.07	147.49	7th Power Plan
Small Retail	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	Existing	23.71	10	\$8.35	25%	65%	\$0.03	30.01	43.87	Illinois TRM
Small Retail	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	Existing	24.61	10	\$11.64	25%	65%	\$0.04	15.53	22.86	7th Power Plan
Small Retail	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	Existing	68.70	15	\$36.75	0%	0%	\$0.03	0.00	0.00	Hawaii TRM
Small Retail	Water Heating	Water Heater - Pipe Insulation	PipeFeet	Existing	74.76	15	\$14.88	16%	75%	\$0.01	58.57	81.83	AEG-BEST
Small Retail	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	Existing	16.21	4	\$144.04	25%	65%	\$1.34	20.04	29.68	7th Power Plan
Small Retail	Water Heating	Water Heater - Thermostat Setback	WHunits	Existing	67.86	2	\$5.00	15%	75%	\$0.02	29.44	42.97	Illinois TRM
Small Retail	Water Heating	Water Heater - Solar System	PipeFeet	Existing	260.05	20	\$215.28	1%	30%	\$0.05	99.23	140.38	AEG-BEST
Small Retail	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.41	15	\$0.35	3%	23%	\$0.07	914.65	1,021.40	7th Power Plan
Small Retail	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.57	15	\$0.58	3%	23%	\$0.08	1,234.16	1,406.08	7th Power Plan
Small Retail	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	Existing	181.12	15	\$54.41	1%	3%	\$0.02	25.94	31.69	7th Power Plan
Small Retail	Interior Lighting	Interior Lighting - Timeclocks and Timers	occ sens	Existing	0.00	8	\$111.67	7%	15%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Small Retail	Interior Lighting	Interior Lighting - Skylights	1000 sqft	Existing	0.00	15	\$1,006.35	15%	25%	\$0.00	0.00	0.00	AEG Research
Small Retail	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	1000 sqft	Existing	270.89	16	\$1,807.69	5%	15%	\$0.49	229.43	295.90	7th Power Plan
Small Retail	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	Existing	2,579.77	11	\$30.80	15%	50%	\$0.00	807.30	950.16	Illinois TRM
Small Retail	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	ELtg Watts	Existing	1.96	8	\$0.63	15%	25%	\$0.03	359.17	444.93	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Small Retail	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	Existing	67.16	8	\$55.10	15%	25%	\$0.09	181.89	231.66	Pacific Gas and Electric Research
Small Retail	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	Existing	80.47	7	\$3,400.00	15%	30%	\$4.71	322.31	424.13	AEG Research
Small Retail	Refrigeration	Refrigeration - Anti-Sweat Heater	Fridge Feet	Existing	3.82	8	\$48.18	0%	25%	\$1.91	0.18	0.22	7th Power Plan
Small Retail	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	Existing	10.77	4	\$10.44	0%	25%	\$0.25	2.10	2.43	Michigan Energy Measures Database
Small Retail	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	Existing	65.56	16	\$165.20	0%	25%	\$0.26	3.81	4.35	7th Power Plan
Small Retail	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	Existing	11.14	15	\$335.85	0%	0%	\$3.12	0.00	0.00	7th Power Plan
Small Retail	Refrigeration	Refrigeration - Strip Curtain	Walkin Door	Existing	0.00	2	\$10.41	0%	25%	\$0.00	0.00	0.00	7th Power Plan
Small Retail	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	Existing	0.17	15	\$45.43	0%	13%	\$25.86	4.27	4.41	Annual Energy Outlook, 2015
Small Retail	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	Existing	3.59	15	\$313.82	0%	13%	\$8.62	7.59	7.72	Annual Energy Outlook, 2015
Small Retail	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	Existing	43.24	10	\$506.05	0%	25%	\$1.53	2.50	2.89	Vermont TRM
Small Retail	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	Existing	5.85	6	\$45.41	0%	0%	\$1.43	0.00	0.00	7th Power Plan
Small Retail	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	Existing	0.47	8	\$3.72	0%	0%	\$1.19	0.00	0.00	7th Power Plan
Small Retail	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	Existing	38.95	5	\$45.85	0%	0%	\$0.25	0.00	0.00	Illinois TRM
Small Retail	Refrigeration	Grocery - ECMs for Display Cases	Fridge Case	Existing	24.65	16	\$165.20	0%	25%	\$0.68	0.40	0.39	7th Power Plan
Small Retail	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	Existing	1,429.83	5	\$187.94	25%	75%	\$0.03	4.59	3.99	Illinois TRM
Small Retail	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	Existing	1,687.73	18	\$8,526.67	25%	50%	\$0.43	154.84	157.37	7th Power Plan
Small Retail	Office Equipment	Office Equipment - Smart Power Strips	Smart Strip	Existing	12.74	4	\$41.63	10%	50%	\$0.76	117.12	87.12	7th Power Plan
Small Retail	Cooling	Lodging - Guest Room Controls	LodgUnit	Existing	246.83	15	\$260.00	0%	0%	\$0.32	0.00	0.00	AEG-BEST
Small Retail	Heating	Lodging - Guest Room Controls	LodgUnit	Existing	-162.71	15	\$260.00	0%	0%	\$0.32	0.00	0.00	AEG-BEST

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Small Retail	Office Equipment	Data Center - Best Practice Measures	sqft	Existing	0.02	5	\$0.00	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Retail	Cooling	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Retail	Ventilation	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Retail	Interior Lighting	Data Center - Commercially Available Measures	sqft	Existing	0.03	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Retail	Office Equipment	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Retail	Cooling	Data Center - Cutting Edge Measures	sqft	Existing	0.04	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Retail	Office Equipment	Data Center - Cutting Edge Measures	sqft	Existing	0.00	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Retail	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	Existing	850.40	18	\$4,092.80	0%	0%	\$0.40	0.00	0.00	7th Power Plan
Small Retail	Miscellaneous	Pool Pump - Timer	perBldg	Existing	0.00	10	\$85.22	15%	75%	\$0.00	0.00	0.00	Ontario Power TRM
Small Retail	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	Existing	1,770.95	6	\$35.93	1%	3%	\$0.00	0.00	44.09	7th Power Plan
Small Retail	Cooling	Advanced New Construction Designs	sqft	Existing	0.74	25	\$4.11	0%	0%	\$0.07	0.00	0.00	AEG Research
Small Retail	Heating	Advanced New Construction Designs	sqft	Existing	2.02	25	\$4.11	0%	0%	\$0.07	0.00	0.00	AEG Research
Small Retail	Ventilation	Advanced New Construction Designs	sqft	Existing	0.28	25	\$4.11	0%	0%	\$0.07	0.00	0.00	AEG Research
Small Retail	Water Heating	Advanced New Construction Designs	sqft	Existing	0.19	25	\$4.11	0%	0%	\$0.07	0.00	0.00	AEG Research
Small Retail	Interior Lighting	Advanced New Construction Designs	sqft	Existing	0.83	25	\$4.11	0%	0%	\$0.07	0.00	0.00	AEG Research
Small Retail	Exterior Lighting	Advanced New Construction Designs	sqft	Existing	0.27	25	\$4.11	0%	0%	\$0.07	0.00	0.00	AEG Research
Small Retail	Cooling	Strategic Energy Management	sqft	Existing	0.14	3	\$0.15	0%	3%	\$0.06	34.57	34.11	AEG Research
Small Retail	Heating	Strategic Energy Management	sqft	Existing	0.32	3	\$0.15	0%	3%	\$0.06	18.81	17.61	AEG Research
Small Retail	Ventilation	Strategic Energy Management	sqft	Existing	0.05	3	\$0.15	0%	3%	\$0.06	15.67	16.25	AEG Research

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Small Retail	Water Heating	Strategic Energy Management	sqft	Existing	0.03	3	\$0.15	0%	3%	\$0.06	3.42	5.03	AEG Research
Small Retail	Interior Lighting	Strategic Energy Management	sqft	Existing	0.13	3	\$0.15	0%	3%	\$0.06	31.97	41.98	AEG Research
Small Retail	Exterior Lighting	Strategic Energy Management	sqft	Existing	0.04	3	\$0.15	0%	3%	\$0.06	9.87	12.76	AEG Research
Small Retail	Refrigeration	Strategic Energy Management	sqft	Existing	0.00	3	\$0.15	0%	3%	\$0.06	0.40	0.40	AEG Research
Small Retail	Office Equipment	Strategic Energy Management	sqft	Existing	0.02	3	\$0.15	0%	3%	\$0.06	5.93	4.41	AEG Research
Small Retail	Cooling	Commissioning	sqft	Existing	0.19	3	\$0.61	0%	0%	\$0.19	0.00	0.00	AEG Research
Small Retail	Heating	Commissioning	sqft	Existing	0.43	3	\$0.61	0%	0%	\$0.19	0.00	0.00	AEG Research
Small Retail	Ventilation	Commissioning	sqft	Existing	0.07	3	\$0.61	0%	0%	\$0.19	0.00	0.00	AEG Research
Small Retail	Water Heating	Commissioning	sqft	Existing	0.01	3	\$0.61	0%	0%	\$0.19	0.00	0.00	AEG Research
Small Retail	Interior Lighting	Commissioning	sqft	Existing	0.14	3	\$0.61	0%	0%	\$0.19	0.00	0.00	AEG Research
Small Retail	Exterior Lighting	Commissioning	sqft	Existing	0.04	3	\$0.61	0%	0%	\$0.19	0.00	0.00	AEG Research
Small Retail	Refrigeration	Commissioning	sqft	Existing	0.00	3	\$0.61	0%	0%	\$0.19	0.00	0.00	AEG Research
Small Retail	Cooling	Retrocommissioning	sqft	Existing	0.19	3	\$0.39	10%	65%	\$0.12	876.44	865.44	AEG Research
Small Retail	Heating	Retrocommissioning	sqft	Existing	0.44	3	\$0.39	10%	65%	\$0.12	476.69	446.73	AEG Research
Small Retail	Ventilation	Retrocommissioning	sqft	Existing	0.07	3	\$0.39	10%	65%	\$0.12	397.13	412.14	AEG Research
Small Retail	Water Heating	Retrocommissioning	sqft	Existing	0.01	3	\$0.39	10%	65%	\$0.12	28.89	42.50	AEG Research
Small Retail	Interior Lighting	Retrocommissioning	sqft	Existing	0.15	3	\$0.39	10%	65%	\$0.12	675.33	887.45	AEG Research
Small Retail	Exterior Lighting	Retrocommissioning	sqft	Existing	0.04	3	\$0.39	10%	65%	\$0.12	208.57	269.75	AEG Research
Small Retail	Refrigeration	Retrocommissioning	sqft	Existing	0.00	3	\$0.39	10%	65%	\$0.12	17.05	16.75	AEG Research
Small Retail	Interior Lighting	Fruit Storage - Lighting Controls	sqft	Existing	0.10	10	\$0.09	0%	0%	\$0.08	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Retail	Refrigeration	Fruit Storage Refrigeration Retrofit	sqft	Existing	0.01	10	\$1.09	0%	0%	\$13.75	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Retail	Refrigeration	Fruit Storage Refrigeration Tuneup	sqft	Existing	0.00	3	\$0.23	0%	0%	\$28.19	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx

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Small Retail	Refrigeration	Fruit Storage Retrofit - CO2 Scrub	sqft	Existing	0.00	10	\$3.13	0%	0%	\$81.52	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Retail	Refrigeration	Fruit Storage Retrofit - Membrane	sqft	Existing	0.00	10	\$0.68	0%	0%	\$88.46	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Retail	Cooling	Insulation - Ceiling	sqft roof	New	0.00	45	\$1.28	15%	50%	\$0.15	0.00	0.00	Building Energy Simulation Tool
Small Retail	Heating	Insulation - Ceiling	sqft roof	New	0.59	45	\$1.28	15%	50%	\$0.15	88.68	81.73	Building Energy Simulation Tool
Small Retail	Ventilation	Insulation - Ceiling	sqft roof	New	0.06	45	\$1.28	15%	50%	\$0.15	55.38	54.00	Building Energy Simulation Tool
Small Retail	Cooling	Insulation - Ducting	sqft duct	New	0.42	20	\$0.84	15%	50%	\$0.11	83.43	77.53	Building Energy Simulation Tool
Small Retail	Heating	Insulation - Ducting	sqft duct	New	0.22	20	\$0.84	15%	50%	\$0.11	8.12	7.54	Building Energy Simulation Tool
Small Retail	Ventilation	Insulation - Ducting	sqft duct	New	0.02	20	\$0.84	15%	50%	\$0.11	5.12	5.05	Building Energy Simulation Tool
Small Retail	Cooling	Building Shell - Cool Roofs	sqft roof	New	0.09	20	\$0.78	45%	50%	\$10.00	9.58	9.03	Building Energy Simulation Tool
Small Retail	Heating	Building Shell - Cool Roofs	sqft roof	New	-0.15	20	\$0.78	45%	50%	\$10.00	-3.23	-2.99	Building Energy Simulation Tool
Small Retail	Ventilation	Building Shell - Cool Roofs	sqft roof	New	-0.02	20	\$0.78	45%	50%	\$10.00	-2.06	-2.04	Building Energy Simulation Tool
Small Retail	Cooling	Insulation - Wall Cavity	sqft wall	New	0.00	45	\$0.78	15%	50%	\$0.10	-0.46	-0.42	Building Energy Simulation Tool
Small Retail	Heating	Insulation - Wall Cavity	sqft wall	New	0.56	45	\$0.78	15%	50%	\$0.10	25.30	23.28	Building Energy Simulation Tool
Small Retail	Ventilation	Insulation - Wall Cavity	sqft wall	New	0.06	45	\$0.78	15%	50%	\$0.10	15.80	15.38	Building Energy Simulation Tool
Small Retail	Cooling	HVAC - Duct Repair and Sealing	tonCool	New	3.56	18	\$0.57	15%	50%	\$0.00	11.15	10.26	Building Energy Simulation Tool
Small Retail	Heating	HVAC - Duct Repair and Sealing	tonCool	New	25.79	18	\$0.57	15%	50%	\$0.00	15.14	13.91	Building Energy Simulation Tool
Small Retail	Ventilation	HVAC - Duct Repair and Sealing	tonCool	New	2.80	18	\$0.57	15%	50%	\$0.00	9.45	9.21	Building Energy Simulation Tool
Small Retail	Cooling	Windows - High Efficiency Glazing	sqft window	New	4.96	30	\$35.93	66%	66%	\$0.08	0.00	0.00	7th Power Plan
Small Retail	Heating	Windows - High Efficiency Glazing	sqft window	New	30.41	30	\$35.93	66%	66%	\$0.08	0.00	0.00	7th Power Plan

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Small Retail	Ventilation	Windows - High Efficiency Glazing	sqft window	New	1.89	30	\$35.93	66%	66%	\$0.08	0.00	0.00	7th Power Plan
Small Retail	Cooling	Chiller - Chilled Water Reset	ChillCtrl	New	0.00	10	\$884.85	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Small Retail	Cooling	Chiller - Chilled Water Variable-Flow System	HP cool	New	0.00	15	\$332.55	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Small Retail	Cooling	Chiller - Variable Speed Fans	HP fan	New	0.00	15	\$208.36	15%	75%	\$0.00	0.00	0.00	New Jersey TRM
Small Retail	Cooling	Water-Cooled Chiller - Condenser Water Reset	ChillCtrl	New	0.00	10	\$884.85	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Small Retail	Cooling	HVAC - Economizer	HP cool	New	64.06	10	\$168.42	18%	75%	\$0.32	101.18	93.37	AEG-BEST
Small Retail	Heating	Space Heating - Heat Recovery Ventilator	CFM	New	2.52	14	\$5.08	6%	75%	\$0.22	91.11	79.48	7th Power Plan
Small Retail	Ventilation	Ventilation - ECM on VAV Boxes	sqft	New	0.14	18	\$0.25	15%	20%	\$0.11	17.27	16.90	7th Power Plan
Small Retail	Ventilation	Ventilation - Variable Speed Control	sqft	New	0.04	15	\$181.39	19%	25%	\$353.08	2.72	2.64	AEG-BEST
Small Retail	Ventilation	Ventilation - Demand Controlled	sqft	New	0.01	15	\$0.25	15%	25%	\$2.37	0.99	0.97	7th Power Plan
Small Retail	Cooling	Destratification Fans (HVLS)	Strat Fan	New	2,899.54	15	\$7,270.90	15%	15%	\$0.04	0.00	0.00	AEG Research
Small Retail	Heating	Destratification Fans (HVLS)	Strat Fan	New	16,576.87	15	\$7,270.90	15%	15%	\$0.04	0.00	0.00	AEG Research
Small Retail	Cooling	RTU - Maintenance	tonCool	New	71.64	3	\$35.00	15%	45%	\$0.15	15.72	14.13	AEG Research
Small Retail	Cooling	RTU - Advanced Controls	sqft	New	0.32	15	\$0.07	15%	45%	\$0.02	189.02	168.72	7th Power Plan
Small Retail	Cooling	RTU - Evaporative Precooler	tonCool	New	151.86	15	\$681.62	15%	75%	\$0.45	843.68	777.91	AEG Research
Small Retail	Cooling	Ductless Mini Split Heat Pump	tonCool	New	285.14	15	\$3,359.26	15%	75%	\$0.61	30.96	28.55	7th Power Plan
Small Retail	Heating	Ductless Mini Split Heat Pump	tonCool	New	263.52	15	\$3,359.26	15%	75%	\$0.61	135.54	119.18	7th Power Plan
Small Retail	Cooling	Thermostat - WiFi/Interactive	sqft	New	0.31	5	\$0.66	30%	40%	\$0.10	8.57	7.80	7th Power Plan
Small Retail	Heating	Thermostat - WiFi/Interactive	sqft	New	0.95	5	\$0.66	30%	40%	\$0.10	5.04	4.28	7th Power Plan
Small Retail	Ventilation	Thermostat - WiFi/Interactive	sqft	New	0.10	5	\$0.66	30%	40%	\$0.10	3.16	3.05	7th Power Plan
Small Retail	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	New	15.20	10	\$8.35	25%	65%	\$0.03	2.06	2.41	Illinois TRM

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Small Retail	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	New	15.88	10	\$11.64	25%	65%	\$0.04	1.08	1.26	7th Power Plan
Small Retail	Water Heating	Water Heater - High Efficiency Circulation Pump	WHUnits	New	44.57	15	\$36.75	0%	0%	\$0.03	0.00	0.00	Hawaii TRM
Small Retail	Water Heating	Water Heater - Pipe Insulation	PipeFeet	New	46.81	15	\$14.88	1%	75%	\$0.01	7.78	8.82	AEG-BEST
Small Retail	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	New	10.51	4	\$144.04	25%	65%	\$1.36	0.66	0.82	7th Power Plan
Small Retail	Water Heating	Water Heater - Thermostat Setback	WHUnits	New	43.92	2	\$5.00	15%	75%	\$0.02	0.27	0.35	Illinois TRM
Small Retail	Water Heating	Water Heater - Solar System	PipeFeet	New	164.05	20	\$215.28	1%	30%	\$0.05	11.04	12.47	AEG-BEST
Small Retail	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.35	15	\$0.35	11%	23%	\$0.07	209.03	212.51	7th Power Plan
Small Retail	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.48	15	\$0.58	11%	23%	\$0.08	287.39	292.99	7th Power Plan
Small Retail	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	New	150.50	15	\$54.41	1%	3%	\$0.02	2.31	2.41	7th Power Plan
Small Retail	Interior Lighting	Interior Lighting - Timeclocks and Timers	occ sens	New	0.00	8	\$111.67	7%	15%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Small Retail	Interior Lighting	Interior Lighting - Skylights	1000 sqft	New	0.00	15	\$1,006.35	18%	25%	\$0.00	0.00	0.00	AEG Research
Small Retail	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	1000 sqft	New	201.73	16	\$1,807.69	5%	15%	\$0.53	24.33	25.61	7th Power Plan
Small Retail	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	New	1,920.43	11	\$30.80	15%	50%	\$0.00	66.32	68.59	Illinois TRM
Small Retail	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	ELtg Watts	New	1.42	8	\$0.63	15%	25%	\$0.03	23.46	26.50	7th Power Plan
Small Retail	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	New	49.72	8	\$55.10	15%	25%	\$0.08	12.38	13.91	Pacific Gas and Electric Research
Small Retail	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	New	60.62	7	\$3,400.00	15%	30%	\$4.61	19.73	22.73	AEG Research
Small Retail	Refrigeration	Refrigeration - Anti-Sweat Heater	Fridge Feet	New	2.66	8	\$48.18	0%	25%	\$2.80	0.02	0.01	7th Power Plan
Small Retail	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	New	7.85	4	\$10.44	0%	25%	\$0.35	0.09	0.07	Michigan Energy Measures Database
Small Retail	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	New	47.72	16	\$165.20	0%	25%	\$0.36	0.56	0.48	7th Power Plan

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Small Retail	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	New	10.09	15	\$335.85	0%	0%	\$3.53	0.00	0.00	7th Power Plan
Small Retail	Refrigeration	Refrigeration - Strip Curtain	Walkin Door	New	0.00	2	\$10.41	0%	25%	\$0.00	0.00	0.00	7th Power Plan
Small Retail	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	New	0.16	15	\$45.43	0%	13%	\$29.21	0.75	0.64	Annual Energy Outlook, 2015
Small Retail	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	New	3.39	15	\$313.82	0%	13%	\$9.73	1.30	1.11	Annual Energy Outlook, 2015
Small Retail	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	New	31.88	10	\$506.05	0%	25%	\$2.11	0.29	0.24	Vermont TRM
Small Retail	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	New	5.37	6	\$45.41	0%	0%	\$1.60	0.00	0.00	7th Power Plan
Small Retail	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	New	0.43	8	\$3.72	0%	0%	\$1.33	0.00	0.00	7th Power Plan
Small Retail	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	New	36.56	5	\$45.85	0%	0%	\$0.27	0.00	0.00	Illinois TRM
Small Retail	Refrigeration	Grocery - ECMs for Display Cases	Fridge Case	New	22.36	16	\$165.20	0%	25%	\$0.76	0.07	0.06	7th Power Plan
Small Retail	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	New	1,389.10	5	\$187.94	25%	75%	\$0.03	0.29	0.24	Illinois TRM
Small Retail	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	New	1,204.34	18	\$8,526.67	25%	50%	\$0.46	28.84	28.45	7th Power Plan
Small Retail	Office Equipment	Office Equipment - Smart Power Strips	Smart Strip	New	13.58	4	\$41.63	10%	50%	\$0.71	3.94	2.87	7th Power Plan
Small Retail	Cooling	Lodging - Guest Room Controls	LodgUnit	New	304.87	15	\$260.00	0%	0%	\$0.18	0.00	0.00	AEG-BEST
Small Retail	Heating	Lodging - Guest Room Controls	LodgUnit	New	-162.34	15	\$260.00	0%	0%	\$0.18	0.00	0.00	AEG-BEST
Small Retail	Office Equipment	Data Center - Best Practice Measures	sqft	New	0.02	5	\$0.00	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Retail	Cooling	Data Center - Commercially Available Measures	sqft	New	0.01	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Retail	Ventilation	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Retail	Interior Lighting	Data Center - Commercially Available Measures	sqft	New	0.03	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Retail	Office Equipment	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Small Retail	Cooling	Data Center - Cutting Edge Measures	sqft	New	0.03	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Retail	Office Equipment	Data Center - Cutting Edge Measures	sqft	New	0.00	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Retail	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	New	606.83	18	\$4,092.80	0%	0%	\$0.44	0.00	0.00	7th Power Plan
Small Retail	Miscellaneous	Pool Pump - Timer	perBldg	New	0.00	10	\$85.22	15%	75%	\$0.00	0.00	0.00	Ontario Power TRM
Small Retail	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	New	1,770.95	6	\$35.93	1%	3%	\$0.00	0.00	1.60	7th Power Plan
Small Retail	Cooling	Advanced New Construction Designs	sqft	New	0.74	25	\$4.11	10%	25%	\$0.07	291.96	267.62	AEG Research
Small Retail	Heating	Advanced New Construction Designs	sqft	New	2.17	25	\$4.11	10%	25%	\$0.07	159.95	147.06	AEG Research
Small Retail	Ventilation	Advanced New Construction Designs	sqft	New	0.23	25	\$4.11	10%	25%	\$0.07	99.49	97.47	AEG Research
Small Retail	Water Heating	Advanced New Construction Designs	sqft	New	0.13	25	\$4.11	10%	25%	\$0.07	26.75	28.00	AEG Research
Small Retail	Interior Lighting	Advanced New Construction Designs	sqft	New	0.68	25	\$4.11	10%	25%	\$0.07	250.28	252.49	AEG Research
Small Retail	Exterior Lighting	Advanced New Construction Designs	sqft	New	0.18	25	\$4.11	10%	25%	\$0.07	71.21	72.42	AEG Research
Small Retail	Cooling	Strategic Energy Management	sqft	New	0.11	3	\$0.13	0%	3%	\$0.05	0.71	0.64	AEG Research
Small Retail	Heating	Strategic Energy Management	sqft	New	0.32	3	\$0.13	0%	3%	\$0.05	0.41	0.35	AEG Research
Small Retail	Ventilation	Strategic Energy Management	sqft	New	0.04	3	\$0.13	0%	3%	\$0.05	0.26	0.25	AEG Research
Small Retail	Water Heating	Strategic Energy Management	sqft	New	0.02	3	\$0.13	0%	3%	\$0.05	0.07	0.09	AEG Research
Small Retail	Interior Lighting	Strategic Energy Management	sqft	New	0.10	3	\$0.13	0%	3%	\$0.05	0.66	0.76	AEG Research
Small Retail	Exterior Lighting	Strategic Energy Management	sqft	New	0.03	3	\$0.13	0%	3%	\$0.05	0.19	0.23	AEG Research
Small Retail	Refrigeration	Strategic Energy Management	sqft	New	0.00	3	\$0.13	0%	3%	\$0.05	0.01	0.01	AEG Research
Small Retail	Office Equipment	Strategic Energy Management	sqft	New	0.02	3	\$0.13	0%	3%	\$0.05	0.12	0.09	AEG Research
Small Retail	Cooling	Commissioning	sqft	New	0.15	3	\$0.50	10%	65%	\$0.17	18.02	16.24	AEG Research

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Small Retail	Heating	Commissioning	sqft	New	0.44	3	\$0.50	10%	65%	\$0.17	10.42	8.80	AEG Research
Small Retail	Ventilation	Commissioning	sqft	New	0.05	3	\$0.50	10%	65%	\$0.17	6.65	6.38	AEG Research
Small Retail	Water Heating	Commissioning	sqft	New	0.01	3	\$0.50	10%	65%	\$0.17	0.60	0.76	AEG Research
Small Retail	Interior Lighting	Commissioning	sqft	New	0.12	3	\$0.50	10%	65%	\$0.17	14.04	16.05	AEG Research
Small Retail	Exterior Lighting	Commissioning	sqft	New	0.03	3	\$0.50	10%	65%	\$0.17	4.00	4.92	AEG Research
Small Retail	Refrigeration	Commissioning	sqft	New	0.00	3	\$0.50	10%	65%	\$0.17	0.50	0.41	AEG Research
Small Retail	Cooling	Retrocommissioning	sqft	New	0.15	3	\$0.32	0%	0%	\$0.11	0.00	0.00	AEG Research
Small Retail	Heating	Retrocommissioning	sqft	New	0.44	3	\$0.32	0%	0%	\$0.11	0.00	0.00	AEG Research
Small Retail	Ventilation	Retrocommissioning	sqft	New	0.05	3	\$0.32	0%	0%	\$0.11	0.00	0.00	AEG Research
Small Retail	Water Heating	Retrocommissioning	sqft	New	0.01	3	\$0.32	0%	0%	\$0.11	0.00	0.00	AEG Research
Small Retail	Interior Lighting	Retrocommissioning	sqft	New	0.12	3	\$0.32	0%	0%	\$0.11	0.00	0.00	AEG Research
Small Retail	Exterior Lighting	Retrocommissioning	sqft	New	0.03	3	\$0.32	0%	0%	\$0.11	0.00	0.00	AEG Research
Small Retail	Refrigeration	Retrocommissioning	sqft	New	0.00	3	\$0.32	0%	0%	\$0.11	0.00	0.00	AEG Research
Small Retail	Interior Lighting	Fruit Storage - Lighting Controls	sqft	New	0.09	10	\$0.09	0%	0%	\$0.08	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Retail	Refrigeration	Fruit Storage Refrigeration Retrofit	sqft	New	0.01	10	\$1.09	0%	0%	\$10.35	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Retail	Refrigeration	Fruit Storage Refrigeration Tuneup	sqft	New	0.00	3	\$0.23	0%	0%	\$21.22	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Retail	Refrigeration	Fruit Storage Retrofit - CO2 Scrub	sqft	New	0.01	10	\$3.13	0%	0%	\$61.38	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Retail	Refrigeration	Fruit Storage Retrofit - Membrane	sqft	New	0.00	10	\$0.68	0%	0%	\$66.60	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Restaurant	Cooling	Insulation - Ceiling	sqft roof	Existing	0.02	45	\$1.28	15%	35%	\$0.13	7.32	6.63	Building Energy Simulation Tool
Restaurant	Heating	Insulation - Ceiling	sqft roof	Existing	0.55	45	\$1.28	15%	35%	\$0.13	26.16	23.47	Building Energy Simulation Tool
Restaurant	Ventilation	Insulation - Ceiling	sqft roof	Existing	0.19	45	\$1.28	15%	35%	\$0.13	64.32	61.65	Building Energy Simulation Tool
Restaurant	Cooling	Insulation - Ducting	sqft duct	Existing	0.02	20	\$0.84	15%	35%	\$0.00	1.43	1.42	Building Energy Simulation Tool

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Restaurant	Heating	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.84	15%	35%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Restaurant	Ventilation	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.84	15%	35%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Restaurant	Cooling	Building Shell - Cool Roofs	sqft roof	Existing	0.14	20	\$0.78	45%	50%	\$10.00	9.96	10.02	Building Energy Simulation Tool
Restaurant	Heating	Building Shell - Cool Roofs	sqft roof	Existing	-0.29	20	\$0.78	45%	50%	\$10.00	-3.43	-3.22	Building Energy Simulation Tool
Restaurant	Ventilation	Building Shell - Cool Roofs	sqft roof	Existing	-0.11	20	\$0.78	45%	50%	\$10.00	-8.61	-8.62	Building Energy Simulation Tool
Restaurant	Cooling	Insulation - Wall Cavity	sqft wall	Existing	-0.29	45	\$0.78	15%	35%	\$0.06	-52.83	-47.46	Building Energy Simulation Tool
Restaurant	Heating	Insulation - Wall Cavity	sqft wall	Existing	1.00	45	\$0.78	15%	35%	\$0.06	29.02	25.82	Building Energy Simulation Tool
Restaurant	Ventilation	Insulation - Wall Cavity	sqft wall	Existing	0.36	45	\$0.78	15%	35%	\$0.06	72.18	68.19	Building Energy Simulation Tool
Restaurant	Cooling	HVAC - Duct Repair and Sealing	tonCool	Existing	-2.02	18	\$0.57	15%	50%	\$10.00	-5.62	-5.65	Building Energy Simulation Tool
Restaurant	Heating	HVAC - Duct Repair and Sealing	tonCool	Existing	-9.75	18	\$0.57	15%	50%	\$10.00	-4.53	-4.27	Building Energy Simulation Tool
Restaurant	Ventilation	HVAC - Duct Repair and Sealing	tonCool	Existing	-3.59	18	\$0.57	15%	50%	\$10.00	-11.66	-11.61	Building Energy Simulation Tool
Restaurant	Cooling	Windows - High Efficiency Glazing	sqft window	Existing	4.65	30	\$35.93	48%	48%	\$0.13	0.00	0.00	7th Power Plan
Restaurant	Heating	Windows - High Efficiency Glazing	sqft window	Existing	15.73	30	\$35.93	48%	48%	\$0.13	0.00	0.00	7th Power Plan
Restaurant	Ventilation	Windows - High Efficiency Glazing	sqft window	Existing	3.16	30	\$35.93	48%	48%	\$0.13	0.00	0.00	7th Power Plan
Restaurant	Cooling	Chiller - Chilled Water Reset	ChillCtrl	Existing	0.00	10	\$884.85	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Restaurant	Cooling	Chiller - Chilled Water Variable-Flow System	HP cool	Existing	0.00	15	\$332.55	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Restaurant	Cooling	Chiller - Variable Speed Fans	HP fan	Existing	0.00	15	\$208.36	15%	75%	\$0.00	0.00	0.00	New Jersey TRM
Restaurant	Cooling	Water-Cooled Chiller - Condenser Water Reset	ChillCtrl	Existing	0.00	10	\$884.85	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Restaurant	Cooling	HVAC - Economizer	HP cool	Existing	81.76	10	\$168.42	18%	75%	\$0.27	314.04	272.63	AEG-BEST

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Restaurant	Heating	Space Heating - Heat Recovery Ventilator	CFM	Existing	0.78	14	\$5.08	3%	75%	\$0.72	100.50	87.60	7th Power Plan
Restaurant	Ventilation	Ventilation - ECM on VAV Boxes	sqft	Existing	0.58	18	\$0.25	15%	20%	\$0.04	48.95	46.65	7th Power Plan
Restaurant	Ventilation	Ventilation - Variable Speed Control	sqft	Existing	0.14	15	\$181.39	13%	50%	\$119.63	91.77	90.93	AEG-BEST
Restaurant	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.03	15	\$0.25	15%	25%	\$0.80	5.23	5.09	7th Power Plan
Restaurant	Cooling	Destratification Fans (HVLS)	Strat Fan	Existing	4,891.99	15	\$7,270.90	15%	15%	\$0.04	0.00	0.00	AEG Research
Restaurant	Heating	Destratification Fans (HVLS)	Strat Fan	Existing	15,447.41	15	\$7,270.90	15%	15%	\$0.04	0.00	0.00	AEG Research
Restaurant	Cooling	RTU - Maintenance	tonCool	Existing	65.75	3	\$35.00	15%	45%	\$0.16	149.13	145.84	AEG Research
Restaurant	Cooling	RTU - Advanced Controls	sqft	Existing	0.43	15	\$0.07	15%	45%	\$0.02	168.49	150.03	7th Power Plan
Restaurant	Cooling	RTU - Evaporative Precooler	tonCool	Existing	139.20	15	\$681.62	15%	75%	\$0.50	594.33	551.70	AEG Research
Restaurant	Cooling	Ductless Mini Split Heat Pump	tonCool	Existing	301.22	15	\$3,359.26	15%	75%	\$0.64	47.12	48.02	7th Power Plan
Restaurant	Heating	Ductless Mini Split Heat Pump	tonCool	Existing	204.75	15	\$3,359.26	15%	75%	\$0.64	7.94	7.13	7th Power Plan
Restaurant	Cooling	Thermostat - WiFi/Interactive	sqft	Existing	0.52	5	\$0.66	30%	40%	\$0.08	73.70	71.95	7th Power Plan
Restaurant	Heating	Thermostat - WiFi/Interactive	sqft	Existing	0.92	5	\$0.66	30%	40%	\$0.08	21.85	19.76	7th Power Plan
Restaurant	Ventilation	Thermostat - WiFi/Interactive	sqft	Existing	0.32	5	\$0.66	30%	40%	\$0.08	52.68	51.42	7th Power Plan
Restaurant	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	Existing	109.51	10	\$8.35	25%	65%	\$0.01	29.32	43.64	Illinois TRM
Restaurant	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	Existing	113.19	10	\$11.64	25%	65%	\$0.01	15.09	22.69	7th Power Plan
Restaurant	Water Heating	Water Heater - High Efficiency Circulation Pump	WHUnits	Existing	66.10	15	\$36.75	0%	0%	\$0.03	0.00	0.00	Hawaii TRM
Restaurant	Water Heating	Water Heater - Pipe Insulation	PipeFeet	Existing	352.35	15	\$14.88	16%	75%	\$0.00	58.86	82.26	AEG-BEST
Restaurant	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	Existing	74.82	4	\$144.04	25%	65%	\$0.28	19.57	29.45	7th Power Plan
Restaurant	Water Heating	Water Heater - Thermostat Setback	WHUnits	Existing	66.23	2	\$5.00	15%	75%	\$0.02	28.53	42.51	Illinois TRM
Restaurant	Water Heating	Water Heater - Solar System	PipeFeet	Existing	1,215.76	20	\$215.28	1%	30%	\$0.01	98.64	140.40	AEG-BEST

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Restaurant	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.63	15	\$0.35	3%	23%	\$0.04	268.70	288.79	7th Power Plan
Restaurant	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.87	15	\$0.58	3%	23%	\$0.05	364.04	398.25	7th Power Plan
Restaurant	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	Existing	116.19	15	\$54.41	1%	3%	\$0.04	8.55	10.37	7th Power Plan
Restaurant	Interior Lighting	Interior Lighting - Timeclocks and Timers	occ sens	Existing	0.00	8	\$111.67	7%	15%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Restaurant	Interior Lighting	Interior Lighting - Skylights	1000 sqft	Existing	0.00	15	\$1,006.35	15%	25%	\$0.00	0.00	0.00	AEG Research
Restaurant	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	1000 sqft	Existing	248.39	16	\$1,807.69	5%	15%	\$0.51	39.74	50.06	7th Power Plan
Restaurant	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	Existing	2,327.09	11	\$30.80	15%	50%	\$0.00	136.38	159.38	Illinois TRM
Restaurant	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	ELtg Watts	Existing	1.38	8	\$0.63	15%	25%	\$0.05	165.36	204.36	7th Power Plan
Restaurant	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	Existing	75.82	8	\$55.10	15%	25%	\$0.08	83.74	106.39	Pacific Gas and Electric Research
Restaurant	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	Existing	90.94	7	\$3,400.00	15%	30%	\$4.22	148.60	194.87	AEG Research
Restaurant	Refrigeration	Refrigeration - Anti-Sweat Heater	Fridge Feet	Existing	77.60	8	\$48.18	0%	75%	\$0.08	15.64	20.87	7th Power Plan
Restaurant	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	Existing	404.03	4	\$10.44	0%	35%	\$0.01	320.46	347.85	Michigan Energy Measures Database
Restaurant	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	Existing	2,750.17	16	\$165.20	0%	75%	\$0.01	1,491.43	1,534.78	7th Power Plan
Restaurant	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	Existing	105.13	15	\$335.85	0%	0%	\$0.29	0.00	0.00	7th Power Plan
Restaurant	Refrigeration	Refrigeration - Strip Curtain	WalkIn Door	Existing	114.58	2	\$10.41	0%	75%	\$0.04	509.68	587.34	7th Power Plan
Restaurant	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	Existing	1.56	15	\$45.43	0%	38%	\$2.41	580.61	675.76	Annual Energy Outlook, 2015
Restaurant	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	Existing	34.54	15	\$313.82	0%	38%	\$0.80	1,094.92	1,210.77	Annual Energy Outlook, 2015
Restaurant	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	Existing	1,682.15	10	\$506.05	0%	75%	\$0.04	893.16	978.86	Vermont TRM
Restaurant	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	Existing	46.76	6	\$45.41	0%	0%	\$0.15	0.00	0.00	7th Power Plan

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Restaurant	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	Existing	3.89	8	\$3.72	0%	0%	\$0.13	0.00	0.00	7th Power Plan
Restaurant	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	Existing	836.26	5	\$45.85	0%	0%	\$0.01	0.00	0.00	Illinois TRM
Restaurant	Refrigeration	Grocery - ECMs for Display Cases	Fridge Case	Existing	204.85	16	\$165.20	0%	75%	\$0.07	14.56	15.10	7th Power Plan
Restaurant	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	Existing	1,233.40	5	\$187.94	25%	75%	\$0.03	417.68	398.70	Illinois TRM
Restaurant	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	Existing	4,903.44	18	\$8,526.67	25%	50%	\$0.16	81.87	79.10	7th Power Plan
Restaurant	Office Equipment	Office Equipment - Smart Power Strips	Smart Strip	Existing	33.60	4	\$41.63	10%	50%	\$0.29	57.27	40.81	7th Power Plan
Restaurant	Cooling	Lodging - Guest Room Controls	LodgUnit	Existing	475.01	15	\$260.00	0%	0%	\$0.09	0.00	0.00	AEG-BEST
Restaurant	Heating	Lodging - Guest Room Controls	LodgUnit	Existing	-185.55	15	\$260.00	0%	0%	\$0.09	0.00	0.00	AEG-BEST
Restaurant	Office Equipment	Data Center - Best Practice Measures	sqft	Existing	0.07	5	\$0.01	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Restaurant	Cooling	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Restaurant	Ventilation	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Restaurant	Interior Lighting	Data Center - Commercially Available Measures	sqft	Existing	0.06	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Restaurant	Office Equipment	Data Center - Commercially Available Measures	sqft	Existing	0.02	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Restaurant	Cooling	Data Center - Cutting Edge Measures	sqft	Existing	0.05	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Restaurant	Office Equipment	Data Center - Cutting Edge Measures	sqft	Existing	0.01	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Restaurant	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	Existing	895.71	18	\$4,092.80	0%	0%	\$0.41	0.00	0.00	7th Power Plan
Restaurant	Miscellaneous	Pool Pump - Timer	perBldg	Existing	0.00	10	\$85.22	15%	75%	\$0.00	0.00	0.00	Ontario Power TRM
Restaurant	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	Existing	2,289.60	6	\$35.93	1%	3%	\$0.00	0.00	28.20	7th Power Plan
Restaurant	Cooling	Advanced New Construction Designs	sqft	Existing	0.94	25	\$4.11	0%	0%	\$0.04	0.00	0.00	AEG Research

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Restaurant	Heating	Advanced New Construction Designs	sqft	Existing	1.90	25	\$4.11	0%	0%	\$0.04	0.00	0.00	AEG Research
Restaurant	Ventilation	Advanced New Construction Designs	sqft	Existing	0.65	25	\$4.11	0%	0%	\$0.04	0.00	0.00	AEG Research
Restaurant	Water Heating	Advanced New Construction Designs	sqft	Existing	1.65	25	\$4.11	0%	0%	\$0.04	0.00	0.00	AEG Research
Restaurant	Interior Lighting	Advanced New Construction Designs	sqft	Existing	1.70	25	\$4.11	0%	0%	\$0.04	0.00	0.00	AEG Research
Restaurant	Exterior Lighting	Advanced New Construction Designs	sqft	Existing	0.73	25	\$4.11	0%	0%	\$0.04	0.00	0.00	AEG Research
Restaurant	Cooling	Strategic Energy Management	sqft	Existing	0.17	3	\$0.88	0%	0%	\$0.14	0.00	0.00	AEG Research
Restaurant	Heating	Strategic Energy Management	sqft	Existing	0.29	3	\$0.88	0%	0%	\$0.14	0.00	0.00	AEG Research
Restaurant	Ventilation	Strategic Energy Management	sqft	Existing	0.11	3	\$0.88	0%	0%	\$0.14	0.00	0.00	AEG Research
Restaurant	Water Heating	Strategic Energy Management	sqft	Existing	0.25	3	\$0.88	0%	0%	\$0.14	0.00	0.00	AEG Research
Restaurant	Interior Lighting	Strategic Energy Management	sqft	Existing	0.22	3	\$0.88	0%	0%	\$0.14	0.00	0.00	AEG Research
Restaurant	Exterior Lighting	Strategic Energy Management	sqft	Existing	0.09	3	\$0.88	0%	0%	\$0.14	0.00	0.00	AEG Research
Restaurant	Refrigeration	Strategic Energy Management	sqft	Existing	0.32	3	\$0.88	0%	0%	\$0.14	0.00	0.00	AEG Research
Restaurant	Office Equipment	Strategic Energy Management	sqft	Existing	0.04	3	\$0.88	0%	0%	\$0.14	0.00	0.00	AEG Research
Restaurant	Cooling	Commissioning	sqft	Existing	0.23	3	\$1.32	0%	0%	\$0.17	0.00	0.00	AEG Research
Restaurant	Heating	Commissioning	sqft	Existing	0.40	3	\$1.32	0%	0%	\$0.17	0.00	0.00	AEG Research
Restaurant	Ventilation	Commissioning	sqft	Existing	0.15	3	\$1.32	0%	0%	\$0.17	0.00	0.00	AEG Research
Restaurant	Water Heating	Commissioning	sqft	Existing	0.12	3	\$1.32	0%	0%	\$0.17	0.00	0.00	AEG Research
Restaurant	Interior Lighting	Commissioning	sqft	Existing	0.25	3	\$1.32	0%	0%	\$0.17	0.00	0.00	AEG Research
Restaurant	Exterior Lighting	Commissioning	sqft	Existing	0.11	3	\$1.32	0%	0%	\$0.17	0.00	0.00	AEG Research
Restaurant	Refrigeration	Commissioning	sqft	Existing	0.74	3	\$1.32	0%	0%	\$0.17	0.00	0.00	AEG Research
Restaurant	Cooling	Retrocommissioning	sqft	Existing	0.24	3	\$0.84	24%	79%	\$0.11	196.61	196.65	AEG Research
Restaurant	Heating	Retrocommissioning	sqft	Existing	0.41	3	\$0.84	24%	79%	\$0.11	56.51	51.13	AEG Research

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Restaurant	Ventilation	Retrocommissioning	sqft	Existing	0.15	3	\$0.84	24%	79%	\$0.11	145.36	141.47	AEG Research
Restaurant	Water Heating	Retrocommissioning	sqft	Existing	0.12	3	\$0.84	24%	79%	\$0.11	19.06	28.89	AEG Research
Restaurant	Interior Lighting	Retrocommissioning	sqft	Existing	0.26	3	\$0.84	24%	79%	\$0.11	226.10	290.27	AEG Research
Restaurant	Exterior Lighting	Retrocommissioning	sqft	Existing	0.11	3	\$0.84	24%	79%	\$0.11	96.16	123.95	AEG Research
Restaurant	Refrigeration	Retrocommissioning	sqft	Existing	0.78	3	\$0.84	24%	79%	\$0.11	672.26	805.52	AEG Research
Restaurant	Interior Lighting	Fruit Storage - Lighting Controls	sqft	Existing	0.18	10	\$0.09	0%	0%	\$0.04	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Restaurant	Refrigeration	Fruit Storage Refrigeration Retrofit	sqft	Existing	2.81	10	\$1.09	0%	0%	\$0.05	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Restaurant	Refrigeration	Fruit Storage Refrigeration Tuneup	sqft	Existing	0.69	3	\$0.23	0%	0%	\$0.09	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Restaurant	Refrigeration	Fruit Storage Retrofit - CO2 Scrub	sqft	Existing	1.29	10	\$3.13	0%	0%	\$0.27	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Restaurant	Refrigeration	Fruit Storage Retrofit - Membrane	sqft	Existing	0.26	10	\$0.68	0%	0%	\$0.29	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Restaurant	Cooling	Insulation - Ceiling	sqft roof	New	0.00	45	\$1.28	15%	50%	\$0.39	0.00	0.00	Building Energy Simulation Tool
Restaurant	Heating	Insulation - Ceiling	sqft roof	New	0.19	45	\$1.28	15%	50%	\$0.39	3.79	3.52	Building Energy Simulation Tool
Restaurant	Ventilation	Insulation - Ceiling	sqft roof	New	0.06	45	\$1.28	15%	50%	\$0.39	7.78	7.39	Building Energy Simulation Tool
Restaurant	Cooling	Insulation - Ducting	sqft duct	New	0.13	20	\$0.84	15%	50%	\$0.00	4.15	3.95	Building Energy Simulation Tool
Restaurant	Heating	Insulation - Ducting	sqft duct	New	0.00	20	\$0.84	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Restaurant	Ventilation	Insulation - Ducting	sqft duct	New	0.00	20	\$0.84	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Restaurant	Cooling	Building Shell - Cool Roofs	sqft roof	New	0.02	20	\$0.78	45%	50%	\$10.00	0.47	0.44	Building Energy Simulation Tool
Restaurant	Heating	Building Shell - Cool Roofs	sqft roof	New	-0.07	20	\$0.78	45%	50%	\$10.00	-0.19	-0.18	Building Energy Simulation Tool
Restaurant	Ventilation	Building Shell - Cool Roofs	sqft roof	New	-0.02	20	\$0.78	45%	50%	\$10.00	-0.40	-0.38	Building Energy Simulation Tool
Restaurant	Cooling	Insulation - Wall Cavity	sqft wall	New	-0.02	45	\$0.78	15%	50%	\$0.61	-1.34	-1.23	Building Energy Simulation Tool

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Restaurant	Heating	Insulation - Wall Cavity	sqft wall	New	0.09	45	\$0.78	15%	50%	\$0.61	1.05	0.96	Building Energy Simulation Tool
Restaurant	Ventilation	Insulation - Wall Cavity	sqft wall	New	0.03	45	\$0.78	15%	50%	\$0.61	2.18	2.05	Building Energy Simulation Tool
Restaurant	Cooling	HVAC - Duct Repair and Sealing	tonCool	New	0.18	18	\$0.57	15%	35%	\$10.00	0.08	0.07	Building Energy Simulation Tool
Restaurant	Heating	HVAC - Duct Repair and Sealing	tonCool	New	-5.74	18	\$0.57	15%	35%	\$10.00	-0.36	-0.33	Building Energy Simulation Tool
Restaurant	Ventilation	HVAC - Duct Repair and Sealing	tonCool	New	-1.75	18	\$0.57	15%	35%	\$10.00	-0.75	-0.71	Building Energy Simulation Tool
Restaurant	Cooling	Windows - High Efficiency Glazing	sqft window	New	3.41	30	\$35.93	66%	66%	\$0.14	0.00	0.00	7th Power Plan
Restaurant	Heating	Windows - High Efficiency Glazing	sqft window	New	15.00	30	\$35.93	66%	66%	\$0.14	0.00	0.00	7th Power Plan
Restaurant	Ventilation	Windows - High Efficiency Glazing	sqft window	New	2.58	30	\$35.93	66%	66%	\$0.14	0.00	0.00	7th Power Plan
Restaurant	Cooling	Chiller - Chilled Water Reset	ChillCtrl	New	0.00	10	\$884.85	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Restaurant	Cooling	Chiller - Chilled Water Variable-Flow System	HP cool	New	0.00	15	\$332.55	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Restaurant	Cooling	Chiller - Variable Speed Fans	HP fan	New	0.00	15	\$208.36	15%	75%	\$0.00	0.00	0.00	New Jersey TRM
Restaurant	Cooling	Water-Cooled Chiller - Condenser Water Reset	ChillCtrl	New	0.00	10	\$884.85	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Restaurant	Cooling	HVAC - Economizer	HP cool	New	56.25	10	\$168.42	18%	75%	\$0.36	21.53	20.17	AEG-BEST
Restaurant	Heating	Space Heating - Heat Recovery Ventilator	CFM	New	0.74	14	\$5.08	6%	75%	\$0.75	10.76	9.36	7th Power Plan
Restaurant	Ventilation	Ventilation - ECM on VAV Boxes	sqft	New	0.45	18	\$0.25	15%	20%	\$0.05	8.46	7.93	7th Power Plan
Restaurant	Ventilation	Ventilation - Variable Speed Control	sqft	New	0.11	15	\$181.39	19%	50%	\$148.45	7.29	6.60	AEG-BEST
Restaurant	Ventilation	Ventilation - Demand Controlled	sqft	New	0.02	15	\$0.25	15%	25%	\$1.00	0.48	0.44	7th Power Plan
Restaurant	Cooling	Destratification Fans (HVLS)	Strat Fan	New	3,635.21	15	\$7,270.90	15%	15%	\$0.04	0.00	0.00	AEG Research
Restaurant	Heating	Destratification Fans (HVLS)	Strat Fan	New	14,811.90	15	\$7,270.90	15%	15%	\$0.04	0.00	0.00	AEG Research
Restaurant	Cooling	RTU - Maintenance	tonCool	New	83.74	3	\$35.00	15%	45%	\$0.12	4.15	3.80	AEG Research
Restaurant	Cooling	RTU - Advanced Controls	sqft	New	0.54	15	\$0.07	15%	45%	\$0.01	50.80	45.38	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Restaurant	Cooling	RTU - Evaporative Precooler	tonCool	New	179.76	15	\$681.62	15%	75%	\$0.38	227.42	209.33	AEG Research
Restaurant	Cooling	Ductless Mini Split Heat Pump	tonCool	New	378.16	15	\$3,359.26	15%	75%	\$0.55	10.97	10.22	7th Power Plan
Restaurant	Heating	Ductless Mini Split Heat Pump	tonCool	New	209.96	15	\$3,359.26	15%	75%	\$0.55	1.20	1.05	7th Power Plan
Restaurant	Cooling	Thermostat - WiFi/Interactive	sqft	New	0.39	5	\$0.66	30%	40%	\$0.09	1.81	1.68	7th Power Plan
Restaurant	Heating	Thermostat - WiFi/Interactive	sqft	New	0.86	5	\$0.66	30%	40%	\$0.09	0.60	0.50	7th Power Plan
Restaurant	Ventilation	Thermostat - WiFi/Interactive	sqft	New	0.26	5	\$0.66	30%	40%	\$0.09	1.24	1.10	7th Power Plan
Restaurant	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	New	72.34	10	\$8.35	25%	65%	\$0.01	2.19	2.57	Illinois TRM
Restaurant	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	New	75.45	10	\$11.64	25%	65%	\$0.01	1.15	1.34	7th Power Plan
Restaurant	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	New	44.27	15	\$36.75	0%	0%	\$0.03	0.00	0.00	Hawaii TRM
Restaurant	Water Heating	Water Heater - Pipe Insulation	PipeFeet	New	225.09	15	\$14.88	1%	75%	\$0.00	8.35	9.48	AEG-BEST
Restaurant	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	New	49.88	4	\$144.04	25%	65%	\$0.28	0.70	0.88	7th Power Plan
Restaurant	Water Heating	Water Heater - Thermostat Setback	WHunits	New	43.68	2	\$5.00	15%	75%	\$0.02	0.29	0.37	Illinois TRM
Restaurant	Water Heating	Water Heater - Solar System	PipeFeet	New	784.97	20	\$215.28	1%	30%	\$0.01	11.81	13.34	AEG-BEST
Restaurant	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.53	15	\$0.35	11%	23%	\$0.04	60.03	60.97	7th Power Plan
Restaurant	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.73	15	\$0.58	11%	23%	\$0.05	82.70	84.21	7th Power Plan
Restaurant	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	New	95.57	15	\$54.41	1%	3%	\$0.03	0.74	0.79	7th Power Plan
Restaurant	Interior Lighting	Interior Lighting - Timeclocks and Timers	occ sens	New	0.00	8	\$111.67	7%	15%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Restaurant	Interior Lighting	Interior Lighting - Skylights	1000 sqft	New	0.00	15	\$1,006.35	18%	25%	\$0.00	0.00	0.00	AEG Research
Restaurant	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	1000 sqft	New	177.57	16	\$1,807.69	5%	15%	\$0.56	4.03	4.25	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Restaurant	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	New	1,675.37	11	\$30.80	15%	50%	\$0.00	10.89	11.32	Illinois TRM
Restaurant	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	ELtg Watts	New	0.99	8	\$0.63	15%	25%	\$0.05	10.79	12.01	7th Power Plan
Restaurant	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	New	54.86	8	\$55.10	15%	25%	\$0.08	5.56	6.29	Pacific Gas and Electric Research
Restaurant	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	New	67.82	7	\$3,400.00	15%	30%	\$4.18	9.07	10.29	AEG Research
Restaurant	Refrigeration	Refrigeration - Anti-Sweat Heater	Fridge Feet	New	58.52	8	\$48.18	0%	75%	\$0.12	1.13	0.93	7th Power Plan
Restaurant	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	New	356.82	4	\$10.44	0%	35%	\$0.01	10.65	8.72	Michigan Energy Measures Database
Restaurant	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	New	2,322.97	16	\$165.20	0%	75%	\$0.01	163.14	140.36	7th Power Plan
Restaurant	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	New	104.95	15	\$335.85	0%	0%	\$0.33	0.00	0.00	7th Power Plan
Restaurant	Refrigeration	Refrigeration - Strip Curtain	Walkin Door	New	108.71	2	\$10.41	0%	75%	\$0.04	5.31	4.29	7th Power Plan
Restaurant	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	New	1.66	15	\$45.43	0%	38%	\$2.69	82.43	69.43	Annual Energy Outlook, 2015
Restaurant	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	New	35.41	15	\$313.82	0%	38%	\$0.90	145.32	122.92	Annual Energy Outlook, 2015
Restaurant	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	New	1,510.00	10	\$506.05	0%	75%	\$0.04	81.44	68.26	Vermont TRM
Restaurant	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	New	48.02	6	\$45.41	0%	0%	\$0.17	0.00	0.00	7th Power Plan
Restaurant	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	New	3.89	8	\$3.72	0%	0%	\$0.14	0.00	0.00	7th Power Plan
Restaurant	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	New	821.87	5	\$45.85	0%	0%	\$0.01	0.00	0.00	Illinois TRM
Restaurant	Refrigeration	Grocery - ECMs for Display Cases	Fridge Case	New	201.19	16	\$165.20	0%	75%	\$0.08	1.84	1.57	7th Power Plan
Restaurant	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	New	1,324.51	5	\$187.94	25%	75%	\$0.03	20.90	17.10	Illinois TRM
Restaurant	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	New	3,730.52	18	\$8,526.67	25%	50%	\$0.19	14.13	13.35	7th Power Plan
Restaurant	Office Equipment	Office Equipment - Smart Power Strips	Smart Strip	New	33.96	4	\$41.63	10%	50%	\$0.28	1.82	1.27	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Restaurant	Cooling	Lodging - Guest Room Controls	LodgUnit	New	584.41	15	\$260.00	0%	0%	\$0.07	0.00	0.00	AEG-BEST
Restaurant	Heating	Lodging - Guest Room Controls	LodgUnit	New	-183.18	15	\$260.00	0%	0%	\$0.07	0.00	0.00	AEG-BEST
Restaurant	Office Equipment	Data Center - Best Practice Measures	sqft	New	0.07	5	\$0.01	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Restaurant	Cooling	Data Center - Commercially Available Measures	sqft	New	0.01	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Restaurant	Ventilation	Data Center - Commercially Available Measures	sqft	New	0.01	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Restaurant	Interior Lighting	Data Center - Commercially Available Measures	sqft	New	0.05	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Restaurant	Office Equipment	Data Center - Commercially Available Measures	sqft	New	0.02	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Restaurant	Cooling	Data Center - Cutting Edge Measures	sqft	New	0.04	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Restaurant	Office Equipment	Data Center - Cutting Edge Measures	sqft	New	0.01	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Restaurant	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	New	683.35	18	\$4,092.80	0%	0%	\$0.50	0.00	0.00	7th Power Plan
Restaurant	Miscellaneous	Pool Pump - Timer	perBldg	New	0.00	10	\$85.22	15%	75%	\$0.00	0.00	0.00	Ontario Power TRM
Restaurant	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	New	2,289.60	6	\$35.93	1%	3%	\$0.00	0.00	1.02	7th Power Plan
Restaurant	Cooling	Advanced New Construction Designs	sqft	New	0.93	25	\$4.11	10%	25%	\$0.04	62.58	57.40	AEG Research
Restaurant	Heating	Advanced New Construction Designs	sqft	New	1.95	25	\$4.11	10%	25%	\$0.04	18.98	17.39	AEG Research
Restaurant	Ventilation	Advanced New Construction Designs	sqft	New	0.59	25	\$4.11	10%	25%	\$0.04	39.31	36.83	AEG Research
Restaurant	Water Heating	Advanced New Construction Designs	sqft	New	1.11	25	\$4.11	10%	25%	\$0.04	19.28	20.13	AEG Research
Restaurant	Interior Lighting	Advanced New Construction Designs	sqft	New	1.19	25	\$4.11	10%	25%	\$0.04	80.79	81.19	AEG Research
Restaurant	Exterior Lighting	Advanced New Construction Designs	sqft	New	0.46	25	\$4.11	10%	25%	\$0.04	32.87	33.45	AEG Research
Restaurant	Cooling	Strategic Energy Management	sqft	New	0.13	3	\$0.84	0%	0%	\$0.14	0.00	0.00	AEG Research

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Restaurant	Heating	Strategic Energy Management	sqft	New	0.29	3	\$0.84	0%	0%	\$0.14	0.00	0.00	AEG Research
Restaurant	Ventilation	Strategic Energy Management	sqft	New	0.09	3	\$0.84	0%	0%	\$0.14	0.00	0.00	AEG Research
Restaurant	Water Heating	Strategic Energy Management	sqft	New	0.17	3	\$0.84	0%	0%	\$0.14	0.00	0.00	AEG Research
Restaurant	Interior Lighting	Strategic Energy Management	sqft	New	0.18	3	\$0.84	0%	0%	\$0.14	0.00	0.00	AEG Research
Restaurant	Exterior Lighting	Strategic Energy Management	sqft	New	0.07	3	\$0.84	0%	0%	\$0.14	0.00	0.00	AEG Research
Restaurant	Refrigeration	Strategic Energy Management	sqft	New	0.38	3	\$0.84	0%	0%	\$0.14	0.00	0.00	AEG Research
Restaurant	Office Equipment	Strategic Energy Management	sqft	New	0.05	3	\$0.84	0%	0%	\$0.14	0.00	0.00	AEG Research
Restaurant	Cooling	Commissioning	sqft	New	0.18	3	\$1.30	24%	79%	\$0.17	3.80	3.49	AEG Research
Restaurant	Heating	Commissioning	sqft	New	0.40	3	\$1.30	24%	79%	\$0.17	1.26	1.04	AEG Research
Restaurant	Ventilation	Commissioning	sqft	New	0.12	3	\$1.30	24%	79%	\$0.17	2.62	2.29	AEG Research
Restaurant	Water Heating	Commissioning	sqft	New	0.08	3	\$1.30	24%	79%	\$0.17	0.43	0.55	AEG Research
Restaurant	Interior Lighting	Commissioning	sqft	New	0.21	3	\$1.30	24%	79%	\$0.17	4.54	5.50	AEG Research
Restaurant	Exterior Lighting	Commissioning	sqft	New	0.08	3	\$1.30	24%	79%	\$0.17	1.84	2.21	AEG Research
Restaurant	Refrigeration	Commissioning	sqft	New	0.87	3	\$1.30	24%	79%	\$0.17	18.12	14.84	AEG Research
Restaurant	Cooling	Retrocommissioning	sqft	New	0.18	3	\$0.83	0%	0%	\$0.11	0.00	0.00	AEG Research
Restaurant	Heating	Retrocommissioning	sqft	New	0.40	3	\$0.83	0%	0%	\$0.11	0.00	0.00	AEG Research
Restaurant	Ventilation	Retrocommissioning	sqft	New	0.12	3	\$0.83	0%	0%	\$0.11	0.00	0.00	AEG Research
Restaurant	Water Heating	Retrocommissioning	sqft	New	0.08	3	\$0.83	0%	0%	\$0.11	0.00	0.00	AEG Research
Restaurant	Interior Lighting	Retrocommissioning	sqft	New	0.21	3	\$0.83	0%	0%	\$0.11	0.00	0.00	AEG Research
Restaurant	Exterior Lighting	Retrocommissioning	sqft	New	0.08	3	\$0.83	0%	0%	\$0.11	0.00	0.00	AEG Research
Restaurant	Refrigeration	Retrocommissioning	sqft	New	0.87	3	\$0.83	0%	0%	\$0.11	0.00	0.00	AEG Research
Restaurant	Interior Lighting	Fruit Storage - Lighting Controls	sqft	New	0.15	10	\$0.09	0%	0%	\$0.04	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx

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Restaurant	Refrigeration	Fruit Storage Refrigeration Retrofit	sqft	New	2.84	10	\$1.09	0%	0%	\$0.05	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Restaurant	Refrigeration	Fruit Storage Refrigeration Tuneup	sqft	New	0.73	3	\$0.23	0%	0%	\$0.10	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Restaurant	Refrigeration	Fruit Storage Retrofit - CO2 Scrub	sqft	New	1.36	10	\$3.13	0%	0%	\$0.29	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Restaurant	Refrigeration	Fruit Storage Retrofit - Membrane	sqft	New	0.27	10	\$0.68	0%	0%	\$0.32	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Grocery	Cooling	Insulation - Ceiling	sqft roof	Existing	0.37	45	\$1.28	15%	35%	\$0.26	56.40	52.43	Building Energy Simulation Tool
Grocery	Heating	Insulation - Ceiling	sqft roof	Existing	0.00	45	\$1.28	15%	35%	\$0.26	0.03	0.03	Building Energy Simulation Tool
Grocery	Ventilation	Insulation - Ceiling	sqft roof	Existing	0.00	45	\$1.28	15%	35%	\$0.26	0.05	0.05	Building Energy Simulation Tool
Grocery	Cooling	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.84	15%	35%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Grocery	Heating	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.84	15%	35%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Grocery	Ventilation	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.84	15%	35%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Grocery	Cooling	Building Shell - Cool Roofs	sqft roof	Existing	0.43	20	\$0.78	45%	50%	\$10.00	15.32	15.79	Building Energy Simulation Tool
Grocery	Heating	Building Shell - Cool Roofs	sqft roof	Existing	-0.40	20	\$0.78	45%	50%	\$10.00	-2.86	-2.64	Building Energy Simulation Tool
Grocery	Ventilation	Building Shell - Cool Roofs	sqft roof	Existing	-0.10	20	\$0.78	45%	50%	\$10.00	-4.69	-5.03	Building Energy Simulation Tool
Grocery	Cooling	Insulation - Wall Cavity	sqft wall	Existing	0.91	45	\$0.78	15%	35%	\$0.05	80.71	72.96	Building Energy Simulation Tool
Grocery	Heating	Insulation - Wall Cavity	sqft wall	Existing	0.35	45	\$0.78	15%	35%	\$0.05	5.85	5.15	Building Energy Simulation Tool
Grocery	Ventilation	Insulation - Wall Cavity	sqft wall	Existing	0.09	45	\$0.78	15%	35%	\$0.05	9.32	9.58	Building Energy Simulation Tool
Grocery	Cooling	HVAC - Duct Repair and Sealing	tonCool	Existing	1.97	18	\$0.57	15%	25%	\$0.02	0.51	0.47	Building Energy Simulation Tool
Grocery	Heating	HVAC - Duct Repair and Sealing	tonCool	Existing	0.29	18	\$0.57	15%	25%	\$0.02	0.01	0.01	Building Energy Simulation Tool
Grocery	Ventilation	HVAC - Duct Repair and Sealing	tonCool	Existing	0.07	18	\$0.57	15%	25%	\$0.02	0.02	0.02	Building Energy Simulation Tool

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Grocery	Cooling	Windows - High Efficiency Glazing	sqft window	Existing	3.20	30	\$35.93	48%	48%	\$0.18	0.00	0.00	7th Power Plan
Grocery	Heating	Windows - High Efficiency Glazing	sqft window	Existing	11.61	30	\$35.93	48%	48%	\$0.18	0.00	0.00	7th Power Plan
Grocery	Ventilation	Windows - High Efficiency Glazing	sqft window	Existing	1.75	30	\$35.93	48%	48%	\$0.18	0.00	0.00	7th Power Plan
Grocery	Cooling	Chiller - Chilled Water Reset	ChillCtrl	Existing	4,549.69	10	\$884.85	15%	75%	\$0.03	0.45	0.39	AEG-BEST
Grocery	Cooling	Chiller - Chilled Water Variable-Flow System	HP cool	Existing	425.89	15	\$332.55	15%	75%	\$0.08	5.80	5.14	AEG-BEST
Grocery	Cooling	Chiller - Variable Speed Fans	HP fan	Existing	1,089.11	15	\$208.36	15%	75%	\$0.02	1.50	1.30	New Jersey TRM
Grocery	Cooling	Water-Cooled Chiller - Condenser Water Reset	ChillCtrl	Existing	58,848.71	10	\$884.85	15%	75%	\$0.00	2.21	1.93	AEG-BEST
Grocery	Cooling	HVAC - Economizer	HP cool	Existing	155.79	10	\$168.42	18%	75%	\$0.14	183.63	161.42	AEG-BEST
Grocery	Heating	Space Heating - Heat Recovery Ventilator	CFM	Existing	5.57	14	\$5.08	3%	75%	\$0.10	77.35	64.54	7th Power Plan
Grocery	Ventilation	Ventilation - ECM on VAV Boxes	sqft	Existing	0.49	18	\$0.25	15%	20%	\$0.04	22.73	23.23	7th Power Plan
Grocery	Ventilation	Ventilation - Variable Speed Control	sqft	Existing	0.04	15	\$181.39	13%	50%	\$361.31	15.53	16.98	AEG-BEST
Grocery	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.02	15	\$0.25	15%	75%	\$0.88	14.88	15.77	7th Power Plan
Grocery	Cooling	Destratification Fans (HVLS)	Strat Fan	Existing	5,554.98	15	\$7,270.90	15%	15%	\$0.03	0.00	0.00	AEG Research
Grocery	Heating	Destratification Fans (HVLS)	Strat Fan	Existing	18,670.60	15	\$7,270.90	15%	15%	\$0.03	0.00	0.00	AEG Research
Grocery	Cooling	RTU - Maintenance	tonCool	Existing	121.76	3	\$35.00	15%	45%	\$0.09	90.18	89.98	AEG Research
Grocery	Cooling	RTU - Advanced Controls	sqft	Existing	0.23	15	\$0.07	15%	45%	\$0.03	51.06	45.66	7th Power Plan
Grocery	Cooling	RTU - Evaporative Precooler	tonCool	Existing	256.18	15	\$681.62	15%	75%	\$0.26	351.12	331.09	AEG Research
Grocery	Cooling	Ductless Mini Split Heat Pump	tonCool	Existing	557.37	15	\$3,359.26	15%	25%	\$0.34	3.85	4.00	7th Power Plan
Grocery	Heating	Ductless Mini Split Heat Pump	tonCool	Existing	409.99	15	\$3,359.26	15%	25%	\$0.34	2.79	2.43	7th Power Plan
Grocery	Cooling	Thermostat - WiFi/Interactive	sqft	Existing	0.57	5	\$0.66	30%	40%	\$0.07	41.33	41.60	7th Power Plan
Grocery	Heating	Thermostat - WiFi/Interactive	sqft	Existing	1.06	5	\$0.66	30%	40%	\$0.07	15.41	13.92	7th Power Plan

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Grocery	Ventilation	Thermostat - WiFi/Interactive	sqft	Existing	0.28	5	\$0.66	30%	40%	\$0.07	25.72	26.78	7th Power Plan
Grocery	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	Existing	108.39	10	\$8.35	25%	65%	\$0.01	11.82	17.78	Illinois TRM
Grocery	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	Existing	112.08	10	\$11.64	25%	65%	\$0.01	6.08	9.25	7th Power Plan
Grocery	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	Existing	65.61	15	\$36.75	0%	0%	\$0.03	0.00	0.00	Hawaii TRM
Grocery	Water Heating	Water Heater - Pipe Insulation	PipeFeet	Existing	348.02	15	\$14.88	16%	75%	\$0.00	23.65	33.40	AEG-BEST
Grocery	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	Existing	74.13	4	\$144.04	25%	65%	\$0.28	7.88	11.99	7th Power Plan
Grocery	Water Heating	Water Heater - Thermostat Setback	WHunits	Existing	65.73	2	\$5.00	15%	75%	\$0.02	11.48	17.30	Illinois TRM
Grocery	Water Heating	Water Heater - Solar System	PipeFeet	Existing	1,202.24	20	\$215.28	1%	30%	\$0.01	39.67	57.07	AEG-BEST
Grocery	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.87	15	\$0.35	3%	23%	\$0.03	190.13	218.25	7th Power Plan
Grocery	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	1.20	15	\$0.58	3%	23%	\$0.04	256.11	300.31	7th Power Plan
Grocery	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	Existing	490.84	15	\$54.41	1%	3%	\$0.01	5.33	6.63	7th Power Plan
Grocery	Interior Lighting	Interior Lighting - Timeclocks and Timers	occ sens	Existing	0.00	8	\$111.67	7%	15%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Grocery	Interior Lighting	Interior Lighting - Skylights	1000 sqft	Existing	0.00	15	\$1,006.35	15%	30%	\$0.00	0.00	0.00	AEG Research
Grocery	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	1000 sqft	Existing	685.52	16	\$1,807.69	5%	15%	\$0.19	58.36	77.45	7th Power Plan
Grocery	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	Existing	6,578.42	11	\$30.80	15%	50%	\$0.00	208.11	249.69	Illinois TRM
Grocery	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	ELtg Watts	Existing	0.94	8	\$0.63	15%	25%	\$0.07	77.26	97.47	7th Power Plan
Grocery	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	Existing	69.56	8	\$55.10	15%	25%	\$0.08	39.07	50.75	Pacific Gas and Electric Research
Grocery	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	Existing	82.86	7	\$3,400.00	15%	30%	\$4.62	68.60	92.62	AEG Research
Grocery	Refrigeration	Refrigeration - Anti-Sweat Heater	Fridge Feet	Existing	218.44	8	\$48.18	25%	75%	\$0.03	246.17	333.73	7th Power Plan

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Grocery	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	Existing	69.42	4	\$10.44	25%	35%	\$0.03	32.52	43.41	Michigan Energy Measures Database
Grocery	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	Existing	220.72	16	\$165.20	25%	75%	\$0.07	94.23	113.51	7th Power Plan
Grocery	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	Existing	705.46	15	\$335.85	14%	75%	\$0.05	4,274.35	4,102.29	7th Power Plan
Grocery	Refrigeration	Refrigeration - Strip Curtain	Walkin Door	Existing	105.09	2	\$10.41	25%	75%	\$0.04	30.33	37.46	7th Power Plan
Grocery	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	Existing	9.01	15	\$45.43	13%	38%	\$0.42	590.71	682.40	Annual Energy Outlook, 2015
Grocery	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	Existing	199.81	15	\$313.82	13%	38%	\$0.14	1,114.70	1,222.44	Annual Energy Outlook, 2015
Grocery	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	Existing	133.07	10	\$506.05	25%	75%	\$0.38	54.80	71.92	Vermont TRM
Grocery	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	Existing	54.68	6	\$45.41	10%	75%	\$0.12	488.80	554.07	7th Power Plan
Grocery	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	Existing	10.31	8	\$3.72	10%	75%	\$0.05	35.10	38.25	7th Power Plan
Grocery	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	Existing	2,641.79	5	\$45.85	10%	75%	\$0.00	1,213.68	1,094.11	Illinois TRM
Grocery	Refrigeration	Grocery - ECMs for Display Cases	Fridge Case	Existing	240.57	16	\$165.20	25%	75%	\$0.06	210.53	227.97	7th Power Plan
Grocery	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	Existing	1,178.90	5	\$187.94	25%	75%	\$0.03	52.37	52.29	Illinois TRM
Grocery	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	Existing	4,105.28	18	\$8,526.67	25%	50%	\$0.17	38.43	39.60	7th Power Plan
Grocery	Office Equipment	Office Equipment - Smart Power Strips	Smart Strip	Existing	15.75	4	\$41.63	10%	50%	\$0.61	14.43	11.23	7th Power Plan
Grocery	Cooling	Lodging - Guest Room Controls	LodgUnit	Existing	520.20	15	\$260.00	0%	0%	\$0.09	0.00	0.00	AEG-BEST
Grocery	Heating	Lodging - Guest Room Controls	LodgUnit	Existing	-211.85	15	\$260.00	0%	0%	\$0.09	0.00	0.00	AEG-BEST
Grocery	Office Equipment	Data Center - Best Practice Measures	sqft	Existing	0.02	5	\$0.00	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Grocery	Cooling	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Grocery	Ventilation	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx

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Grocery	Interior Lighting	Data Center - Commercially Available Measures	sqft	Existing	0.07	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Grocery	Office Equipment	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Grocery	Cooling	Data Center - Cutting Edge Measures	sqft	Existing	0.06	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Grocery	Office Equipment	Data Center - Cutting Edge Measures	sqft	Existing	0.00	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Grocery	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	Existing	2,758.04	18	\$4,092.80	0%	0%	\$0.12	0.00	0.00	7th Power Plan
Grocery	Miscellaneous	Pool Pump - Timer	perBldg	Existing	0.00	10	\$85.22	15%	75%	\$0.00	0.00	0.00	Ontario Power TRM
Grocery	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	Existing	9,567.91	6	\$35.93	1%	3%	\$0.00	0.00	18.08	7th Power Plan
Grocery	Cooling	Advanced New Construction Designs	sqft	Existing	1.24	25	\$4.11	0%	0%	\$0.04	0.00	0.00	AEG Research
Grocery	Heating	Advanced New Construction Designs	sqft	Existing	2.26	25	\$4.11	0%	0%	\$0.04	0.00	0.00	AEG Research
Grocery	Ventilation	Advanced New Construction Designs	sqft	Existing	0.41	25	\$4.11	0%	0%	\$0.04	0.00	0.00	AEG Research
Grocery	Water Heating	Advanced New Construction Designs	sqft	Existing	0.47	25	\$4.11	0%	0%	\$0.04	0.00	0.00	AEG Research
Grocery	Interior Lighting	Advanced New Construction Designs	sqft	Existing	1.76	25	\$4.11	0%	0%	\$0.04	0.00	0.00	AEG Research
Grocery	Exterior Lighting	Advanced New Construction Designs	sqft	Existing	0.55	25	\$4.11	0%	0%	\$0.04	0.00	0.00	AEG Research
Grocery	Cooling	Strategic Energy Management	sqft	Existing	0.19	3	\$1.46	4%	27%	\$0.19	33.62	35.18	AEG Research
Grocery	Heating	Strategic Energy Management	sqft	Existing	0.35	3	\$1.46	4%	27%	\$0.19	12.54	11.18	AEG Research
Grocery	Ventilation	Strategic Energy Management	sqft	Existing	0.09	3	\$1.46	4%	27%	\$0.19	20.76	22.55	AEG Research
Grocery	Water Heating	Strategic Energy Management	sqft	Existing	0.07	3	\$1.46	4%	27%	\$0.19	7.16	11.04	AEG Research
Grocery	Interior Lighting	Strategic Energy Management	sqft	Existing	0.25	3	\$1.46	4%	27%	\$0.19	48.47	66.53	AEG Research
Grocery	Exterior Lighting	Strategic Energy Management	sqft	Existing	0.08	3	\$1.46	4%	27%	\$0.19	15.79	21.18	AEG Research

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Grocery	Refrigeration	Strategic Energy Management	sqft	Existing	0.88	3	\$1.46	4%	27%	\$0.19	177.64	217.15	AEG Research
Grocery	Office Equipment	Strategic Energy Management	sqft	Existing	0.02	3	\$1.46	4%	27%	\$0.19	5.44	4.30	AEG Research
Grocery	Cooling	Commissioning	sqft	Existing	0.26	3	\$1.30	0%	0%	\$0.10	0.00	0.00	AEG Research
Grocery	Heating	Commissioning	sqft	Existing	0.48	3	\$1.30	0%	0%	\$0.10	0.00	0.00	AEG Research
Grocery	Ventilation	Commissioning	sqft	Existing	0.13	3	\$1.30	0%	0%	\$0.10	0.00	0.00	AEG Research
Grocery	Water Heating	Commissioning	sqft	Existing	0.03	3	\$1.30	0%	0%	\$0.10	0.00	0.00	AEG Research
Grocery	Interior Lighting	Commissioning	sqft	Existing	0.29	3	\$1.30	0%	0%	\$0.10	0.00	0.00	AEG Research
Grocery	Exterior Lighting	Commissioning	sqft	Existing	0.09	3	\$1.30	0%	0%	\$0.10	0.00	0.00	AEG Research
Grocery	Refrigeration	Commissioning	sqft	Existing	2.03	3	\$1.30	0%	0%	\$0.10	0.00	0.00	AEG Research
Grocery	Cooling	Retrocommissioning	sqft	Existing	0.27	3	\$0.82	10%	61%	\$0.06	106.85	109.62	AEG Research
Grocery	Heating	Retrocommissioning	sqft	Existing	0.50	3	\$0.82	10%	61%	\$0.06	39.84	34.84	AEG Research
Grocery	Ventilation	Retrocommissioning	sqft	Existing	0.13	3	\$0.82	10%	61%	\$0.06	65.98	70.26	AEG Research
Grocery	Water Heating	Retrocommissioning	sqft	Existing	0.03	3	\$0.82	10%	61%	\$0.06	7.41	11.35	AEG Research
Grocery	Interior Lighting	Retrocommissioning	sqft	Existing	0.30	3	\$0.82	10%	61%	\$0.06	127.62	172.26	AEG Research
Grocery	Exterior Lighting	Retrocommissioning	sqft	Existing	0.09	3	\$0.82	10%	61%	\$0.06	41.56	54.82	AEG Research
Grocery	Refrigeration	Retrocommissioning	sqft	Existing	2.12	3	\$0.82	10%	61%	\$0.06	963.40	1,137.53	AEG Research
Grocery	Interior Lighting	Fruit Storage - Lighting Controls	sqft	Existing	0.21	10	\$0.09	0%	0%	\$0.04	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Grocery	Refrigeration	Fruit Storage Refrigeration Retrofit	sqft	Existing	8.62	10	\$1.09	0%	0%	\$0.02	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Grocery	Refrigeration	Fruit Storage Refrigeration Tuneup	sqft	Existing	1.78	3	\$0.23	0%	0%	\$0.03	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Grocery	Refrigeration	Fruit Storage Retrofit - CO2 Scrub	sqft	Existing	3.35	10	\$3.13	0%	0%	\$0.10	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Grocery	Refrigeration	Fruit Storage Retrofit - Membrane	sqft	Existing	0.67	10	\$0.68	0%	0%	\$0.11	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Grocery	Cooling	Insulation - Ceiling	sqft roof	New	0.06	45	\$1.28	15%	50%	\$0.99	4.27	4.02	Building Energy Simulation Tool

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Grocery	Heating	Insulation - Ceiling	sqft roof	New	0.03	45	\$1.28	15%	50%	\$0.99	0.33	0.30	Building Energy Simulation Tool
Grocery	Ventilation	Insulation - Ceiling	sqft roof	New	0.00	45	\$1.28	15%	50%	\$0.99	0.42	0.41	Building Energy Simulation Tool
Grocery	Cooling	Insulation - Ducting	sqft duct	New	0.00	20	\$0.84	15%	25%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Grocery	Heating	Insulation - Ducting	sqft duct	New	0.00	20	\$0.84	15%	25%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Grocery	Ventilation	Insulation - Ducting	sqft duct	New	0.00	20	\$0.84	15%	25%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Grocery	Cooling	Building Shell - Cool Roofs	sqft roof	New	0.45	20	\$0.78	45%	50%	\$0.22	4.53	4.18	Building Energy Simulation Tool
Grocery	Heating	Building Shell - Cool Roofs	sqft roof	New	-0.11	20	\$0.78	45%	50%	\$0.22	-0.19	-0.17	Building Energy Simulation Tool
Grocery	Ventilation	Building Shell - Cool Roofs	sqft roof	New	-0.02	20	\$0.78	45%	50%	\$0.22	-0.24	-0.23	Building Energy Simulation Tool
Grocery	Cooling	Insulation - Wall Cavity	sqft wall	New	0.07	45	\$0.78	15%	50%	\$0.65	3.47	3.26	Building Energy Simulation Tool
Grocery	Heating	Insulation - Wall Cavity	sqft wall	New	0.02	45	\$0.78	15%	50%	\$0.65	0.15	0.13	Building Energy Simulation Tool
Grocery	Ventilation	Insulation - Wall Cavity	sqft wall	New	0.00	45	\$0.78	15%	50%	\$0.65	0.19	0.18	Building Energy Simulation Tool
Grocery	Cooling	HVAC - Duct Repair and Sealing	tonCool	New	-4.14	18	\$0.57	15%	25%	\$10.00	-0.26	-0.25	Building Energy Simulation Tool
Grocery	Heating	HVAC - Duct Repair and Sealing	tonCool	New	0.66	18	\$0.57	15%	25%	\$10.00	0.01	0.01	Building Energy Simulation Tool
Grocery	Ventilation	HVAC - Duct Repair and Sealing	tonCool	New	0.11	18	\$0.57	15%	25%	\$10.00	0.01	0.01	Building Energy Simulation Tool
Grocery	Cooling	Windows - High Efficiency Glazing	sqft window	New	2.09	30	\$35.93	66%	66%	\$0.25	0.00	0.00	7th Power Plan
Grocery	Heating	Windows - High Efficiency Glazing	sqft window	New	8.81	30	\$35.93	66%	66%	\$0.25	0.00	0.00	7th Power Plan
Grocery	Ventilation	Windows - High Efficiency Glazing	sqft window	New	0.82	30	\$35.93	66%	66%	\$0.25	0.00	0.00	7th Power Plan
Grocery	Cooling	Chiller - Chilled Water Reset	ChillCtrl	New	3,686.73	10	\$884.85	15%	75%	\$0.03	0.04	0.03	AEG-BEST
Grocery	Cooling	Chiller - Chilled Water Variable-Flow System	HP cool	New	349.42	15	\$332.55	15%	75%	\$0.10	0.63	0.54	AEG-BEST

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Grocery	Cooling	Chiller - Variable Speed Fans	HP fan	New	875.38	15	\$208.36	15%	75%	\$0.02	0.16	0.14	New Jersey TRM
Grocery	Cooling	Water-Cooled Chiller - Condenser Water Reset	ChillCtrl	New	59,606.33	10	\$884.85	15%	75%	\$0.00	0.23	0.19	AEG-BEST
Grocery	Cooling	HVAC - Economizer	HP cool	New	131.65	10	\$168.42	18%	75%	\$0.16	15.36	13.96	AEG-BEST
Grocery	Heating	Space Heating - Heat Recovery Ventilator	CFM	New	5.44	14	\$5.08	6%	75%	\$0.11	8.47	7.18	7th Power Plan
Grocery	Ventilation	Ventilation - ECM on VAV Boxes	sqft	New	0.39	18	\$0.25	15%	20%	\$0.04	5.37	5.21	7th Power Plan
Grocery	Ventilation	Ventilation - Variable Speed Control	sqft	New	0.04	15	\$181.39	19%	50%	\$362.10	1.71	1.63	AEG-BEST
Grocery	Ventilation	Ventilation - Demand Controlled	sqft	New	0.02	15	\$0.25	15%	75%	\$0.89	1.88	1.79	7th Power Plan
Grocery	Cooling	Destratification Fans (HVLS)	Strat Fan	New	4,890.83	15	\$7,270.90	15%	15%	\$0.03	0.00	0.00	AEG Research
Grocery	Heating	Destratification Fans (HVLS)	Strat Fan	New	18,221.02	15	\$7,270.90	15%	15%	\$0.03	0.00	0.00	AEG Research
Grocery	Cooling	RTU - Maintenance	tonCool	New	158.26	3	\$35.00	15%	45%	\$0.07	2.57	2.27	AEG Research
Grocery	Cooling	RTU - Advanced Controls	sqft	New	0.29	15	\$0.07	15%	45%	\$0.02	14.94	13.34	7th Power Plan
Grocery	Cooling	RTU - Evaporative Precooler	tonCool	New	337.00	15	\$681.62	15%	75%	\$0.21	137.41	125.92	AEG Research
Grocery	Cooling	Ductless Mini Split Heat Pump	tonCool	New	730.77	15	\$3,359.26	15%	25%	\$0.29	0.89	0.81	7th Power Plan
Grocery	Heating	Ductless Mini Split Heat Pump	tonCool	New	422.43	15	\$3,359.26	15%	25%	\$0.29	0.46	0.40	7th Power Plan
Grocery	Cooling	Thermostat - WiFi/Interactive	sqft	New	0.53	5	\$0.66	30%	40%	\$0.08	1.28	1.15	7th Power Plan
Grocery	Heating	Thermostat - WiFi/Interactive	sqft	New	1.07	5	\$0.66	30%	40%	\$0.08	0.46	0.38	7th Power Plan
Grocery	Ventilation	Thermostat - WiFi/Interactive	sqft	New	0.17	5	\$0.66	30%	40%	\$0.08	0.60	0.56	7th Power Plan
Grocery	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	New	72.30	10	\$8.35	25%	65%	\$0.01	0.95	1.11	Illinois TRM
Grocery	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	New	75.42	10	\$11.64	25%	65%	\$0.01	0.50	0.58	7th Power Plan
Grocery	Water Heating	Water Heater - High Efficiency Circulation Pump	WHUnits	New	44.35	15	\$36.75	0%	0%	\$0.03	0.00	0.00	Hawaii TRM
Grocery	Water Heating	Water Heater - Pipe Insulation	PipeFeet	New	224.68	15	\$14.88	1%	75%	\$0.00	3.61	4.09	AEG-BEST

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Grocery	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	New	50.37	4	\$144.04	25%	65%	\$0.28	0.31	0.38	7th Power Plan
Grocery	Water Heating	Water Heater - Thermostat Setback	WHunits	New	44.21	2	\$5.00	15%	75%	\$0.02	0.13	0.16	Illinois TRM
Grocery	Water Heating	Water Heater - Solar System	PipeFeet	New	784.29	20	\$215.28	1%	30%	\$0.01	5.10	5.76	AEG-BEST
Grocery	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.73	15	\$0.35	11%	23%	\$0.03	49.69	50.79	7th Power Plan
Grocery	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	1.00	15	\$0.58	11%	23%	\$0.04	68.29	69.99	7th Power Plan
Grocery	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	New	409.47	15	\$54.41	1%	3%	\$0.01	0.54	0.57	7th Power Plan
Grocery	Interior Lighting	Interior Lighting - Timeclocks and Timers	occ sens	New	0.00	8	\$111.67	7%	15%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Grocery	Interior Lighting	Interior Lighting - Skylights	1000 sqft	New	0.00	15	\$1,006.35	18%	33%	\$0.00	0.00	0.00	AEG Research
Grocery	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	1000 sqft	New	520.47	16	\$1,807.69	5%	15%	\$0.20	7.24	7.59	7th Power Plan
Grocery	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	New	4,925.88	11	\$30.80	15%	50%	\$0.00	19.51	20.30	Illinois TRM
Grocery	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	ELtg Watts	New	0.68	8	\$0.63	15%	25%	\$0.07	5.67	6.28	7th Power Plan
Grocery	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	New	50.79	8	\$55.10	15%	25%	\$0.09	2.97	3.29	Pacific Gas and Electric Research
Grocery	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	New	62.70	7	\$3,400.00	15%	30%	\$4.63	4.84	5.38	AEG Research
Grocery	Refrigeration	Refrigeration - Anti-Sweat Heater	Fridge Feet	New	176.79	8	\$48.18	35%	75%	\$0.04	16.68	13.71	7th Power Plan
Grocery	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	New	56.33	4	\$10.44	35%	35%	\$0.05	0.00	0.00	Michigan Energy Measures Database
Grocery	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	New	202.83	16	\$165.20	35%	75%	\$0.08	10.77	9.05	7th Power Plan
Grocery	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	New	648.17	15	\$335.85	0%	75%	\$0.06	640.91	542.66	7th Power Plan
Grocery	Refrigeration	Refrigeration - Strip Curtain	Walkin Door	New	104.87	2	\$10.41	35%	75%	\$0.04	0.31	0.25	7th Power Plan
Grocery	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBtuh	New	9.62	15	\$45.43	18%	38%	\$0.46	73.74	61.41	Annual Energy Outlook, 2015

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Grocery	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	New	203.68	15	\$313.82	18%	38%	\$0.15	129.18	108.12	Annual Energy Outlook, 2015
Grocery	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	New	132.02	10	\$506.05	35%	75%	\$0.47	5.39	4.41	Vermont TRM
Grocery	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	New	57.65	6	\$45.41	10%	75%	\$0.14	36.06	29.26	7th Power Plan
Grocery	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	New	10.49	8	\$3.72	10%	75%	\$0.05	3.28	2.68	7th Power Plan
Grocery	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	New	2,447.64	5	\$45.85	10%	75%	\$0.00	56.50	45.92	Illinois TRM
Grocery	Refrigeration	Grocery - ECMs for Display Cases	Fridge Case	New	243.58	16	\$165.20	35%	75%	\$0.07	24.76	20.81	7th Power Plan
Grocery	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	New	1,328.23	5	\$187.94	25%	75%	\$0.03	3.10	2.52	Illinois TRM
Grocery	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	New	3,324.23	18	\$8,526.67	25%	50%	\$0.17	9.09	8.87	7th Power Plan
Grocery	Office Equipment	Office Equipment - Smart Power Strips	Smart Strip	New	16.31	4	\$41.63	10%	50%	\$0.58	0.54	0.40	7th Power Plan
Grocery	Cooling	Lodging - Guest Room Controls	LodgUnit	New	642.10	15	\$260.00	0%	0%	\$0.06	0.00	0.00	AEG-BEST
Grocery	Heating	Lodging - Guest Room Controls	LodgUnit	New	-211.63	15	\$260.00	0%	0%	\$0.06	0.00	0.00	AEG-BEST
Grocery	Office Equipment	Data Center - Best Practice Measures	sqft	New	0.02	5	\$0.00	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Grocery	Cooling	Data Center - Commercially Available Measures	sqft	New	0.01	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Grocery	Ventilation	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Grocery	Interior Lighting	Data Center - Commercially Available Measures	sqft	New	0.05	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Grocery	Office Equipment	Data Center - Commercially Available Measures	sqft	New	0.01	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Grocery	Cooling	Data Center - Cutting Edge Measures	sqft	New	0.05	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Grocery	Office Equipment	Data Center - Cutting Edge Measures	sqft	New	0.00	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Grocery	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	New	2,244.08	18	\$4,092.80	0%	0%	\$0.12	0.00	0.00	7th Power Plan

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Grocery	Miscellaneous	Pool Pump - Timer	perBldg	New	0.00	10	\$85.22	15%	75%	\$0.00	0.00	0.00	Ontario Power TRM
Grocery	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	New	9,567.91	6	\$35.93	1%	3%	\$0.00	0.00	0.73	7th Power Plan
Grocery	Cooling	Advanced New Construction Designs	sqft	New	1.25	25	\$4.11	10%	15%	\$0.05	14.34	13.15	AEG Research
Grocery	Heating	Advanced New Construction Designs	sqft	New	2.36	25	\$4.11	10%	15%	\$0.05	4.76	4.33	AEG Research
Grocery	Ventilation	Advanced New Construction Designs	sqft	New	0.39	25	\$4.11	10%	15%	\$0.05	6.19	6.02	AEG Research
Grocery	Water Heating	Advanced New Construction Designs	sqft	New	0.32	25	\$4.11	10%	15%	\$0.05	2.88	3.01	AEG Research
Grocery	Interior Lighting	Advanced New Construction Designs	sqft	New	1.39	25	\$4.11	10%	15%	\$0.05	19.47	19.73	AEG Research
Grocery	Exterior Lighting	Advanced New Construction Designs	sqft	New	0.38	25	\$4.11	10%	15%	\$0.05	5.72	5.81	AEG Research
Grocery	Cooling	Strategic Energy Management	sqft	New	0.18	3	\$1.28	4%	27%	\$0.18	0.82	0.72	AEG Research
Grocery	Heating	Strategic Energy Management	sqft	New	0.36	3	\$1.28	4%	27%	\$0.18	0.30	0.24	AEG Research
Grocery	Ventilation	Strategic Energy Management	sqft	New	0.06	3	\$1.28	4%	27%	\$0.18	0.38	0.35	AEG Research
Grocery	Water Heating	Strategic Energy Management	sqft	New	0.05	3	\$1.28	4%	27%	\$0.18	0.18	0.22	AEG Research
Grocery	Interior Lighting	Strategic Energy Management	sqft	New	0.21	3	\$1.28	4%	27%	\$0.18	1.21	1.36	AEG Research
Grocery	Exterior Lighting	Strategic Energy Management	sqft	New	0.06	3	\$1.28	4%	27%	\$0.18	0.36	0.42	AEG Research
Grocery	Refrigeration	Strategic Energy Management	sqft	New	1.00	3	\$1.28	4%	27%	\$0.18	5.53	4.47	AEG Research
Grocery	Office Equipment	Strategic Energy Management	sqft	New	0.02	3	\$1.28	4%	27%	\$0.18	0.13	0.10	AEG Research
Grocery	Cooling	Commissioning	sqft	New	0.25	3	\$1.17	10%	61%	\$0.10	2.51	2.23	AEG Research
Grocery	Heating	Commissioning	sqft	New	0.50	3	\$1.17	10%	61%	\$0.10	0.91	0.74	AEG Research
Grocery	Ventilation	Commissioning	sqft	New	0.08	3	\$1.17	10%	61%	\$0.10	1.17	1.09	AEG Research
Grocery	Water Heating	Commissioning	sqft	New	0.02	3	\$1.17	10%	61%	\$0.10	0.18	0.23	AEG Research
Grocery	Interior Lighting	Commissioning	sqft	New	0.25	3	\$1.17	10%	61%	\$0.10	3.11	3.49	AEG Research

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Grocery	Exterior Lighting	Commissioning	sqft	New	0.07	3	\$1.17	10%	61%	\$0.10	0.91	1.07	AEG Research
Grocery	Refrigeration	Commissioning	sqft	New	2.34	3	\$1.17	10%	61%	\$0.10	28.39	23.05	AEG Research
Grocery	Cooling	Retrocommissioning	sqft	New	0.25	3	\$0.74	0%	0%	\$0.06	0.00	0.00	AEG Research
Grocery	Heating	Retrocommissioning	sqft	New	0.50	3	\$0.74	0%	0%	\$0.06	0.00	0.00	AEG Research
Grocery	Ventilation	Retrocommissioning	sqft	New	0.08	3	\$0.74	0%	0%	\$0.06	0.00	0.00	AEG Research
Grocery	Water Heating	Retrocommissioning	sqft	New	0.02	3	\$0.74	0%	0%	\$0.06	0.00	0.00	AEG Research
Grocery	Interior Lighting	Retrocommissioning	sqft	New	0.25	3	\$0.74	0%	0%	\$0.06	0.00	0.00	AEG Research
Grocery	Exterior Lighting	Retrocommissioning	sqft	New	0.07	3	\$0.74	0%	0%	\$0.06	0.00	0.00	AEG Research
Grocery	Refrigeration	Retrocommissioning	sqft	New	2.34	3	\$0.74	0%	0%	\$0.06	0.00	0.00	AEG Research
Grocery	Interior Lighting	Fruit Storage - Lighting Controls	sqft	New	0.17	10	\$0.09	0%	0%	\$0.04	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Grocery	Refrigeration	Fruit Storage Refrigeration Retrofit	sqft	New	8.03	10	\$1.09	0%	0%	\$0.02	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Grocery	Refrigeration	Fruit Storage Refrigeration Tuneup	sqft	New	1.90	3	\$0.23	0%	0%	\$0.04	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Grocery	Refrigeration	Fruit Storage Retrofit - CO2 Scrub	sqft	New	3.56	10	\$3.13	0%	0%	\$0.11	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Grocery	Refrigeration	Fruit Storage Retrofit - Membrane	sqft	New	0.71	10	\$0.68	0%	0%	\$0.12	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Health	Cooling	Insulation - Ceiling	sqft roof	Existing	0.20	45	\$1.28	15%	35%	\$0.07	53.02	57.82	Building Energy Simulation Tool
Health	Heating	Insulation - Ceiling	sqft roof	Existing	1.05	45	\$1.28	15%	35%	\$0.07	16.42	14.67	Building Energy Simulation Tool
Health	Ventilation	Insulation - Ceiling	sqft roof	Existing	0.21	45	\$1.28	15%	35%	\$0.07	58.90	61.85	Building Energy Simulation Tool
Health	Cooling	Insulation - Ducting	sqft duct	Existing	0.47	20	\$0.84	15%	35%	\$0.00	116.17	135.96	Building Energy Simulation Tool
Health	Heating	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.84	15%	35%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Health	Ventilation	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.84	15%	35%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Health	Cooling	Building Shell - Cool Roofs	sqft roof	Existing	0.55	20	\$0.78	45%	50%	\$0.29	36.89	37.60	Building Energy Simulation Tool

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Health	Heating	Building Shell - Cool Roofs	sqft roof	Existing	-0.31	20	\$0.78	45%	50%	\$0.29	-1.22	-1.08	Building Energy Simulation Tool
Health	Ventilation	Building Shell - Cool Roofs	sqft roof	Existing	-0.06	20	\$0.78	45%	50%	\$0.29	-4.43	-4.58	Building Energy Simulation Tool
Health	Cooling	Insulation - Wall Cavity	sqft wall	Existing	-0.05	45	\$0.78	15%	35%	\$0.02	-11.85	-12.10	Building Energy Simulation Tool
Health	Heating	Insulation - Wall Cavity	sqft wall	Existing	3.02	45	\$0.78	15%	35%	\$0.02	41.55	36.84	Building Energy Simulation Tool
Health	Ventilation	Insulation - Wall Cavity	sqft wall	Existing	0.62	45	\$0.78	15%	35%	\$0.02	150.86	156.08	Building Energy Simulation Tool
Health	Cooling	HVAC - Duct Repair and Sealing	tonCool	Existing	17.28	18	\$0.57	15%	50%	\$10.00	52.08	64.53	Building Energy Simulation Tool
Health	Heating	HVAC - Duct Repair and Sealing	tonCool	Existing	-49.89	18	\$0.57	15%	50%	\$10.00	-9.66	-9.03	Building Energy Simulation Tool
Health	Ventilation	HVAC - Duct Repair and Sealing	tonCool	Existing	-10.54	18	\$0.57	15%	50%	\$10.00	-36.09	-39.30	Building Energy Simulation Tool
Health	Cooling	Windows - High Efficiency Glazing	sqft window	Existing	9.12	30	\$35.93	48%	48%	\$0.03	0.00	0.00	7th Power Plan
Health	Heating	Windows - High Efficiency Glazing	sqft window	Existing	74.19	30	\$35.93	48%	48%	\$0.03	0.00	0.00	7th Power Plan
Health	Ventilation	Windows - High Efficiency Glazing	sqft window	Existing	8.69	30	\$35.93	48%	48%	\$0.03	0.00	0.00	7th Power Plan
Health	Cooling	Chiller - Chilled Water Reset	ChillCtrl	Existing	18,490.38	10	\$884.85	15%	75%	\$0.01	540.06	586.48	AEG-BEST
Health	Cooling	Chiller - Chilled Water Variable-Flow System	HP cool	Existing	466.39	15	\$332.55	15%	75%	\$0.06	1,855.20	2,118.49	AEG-BEST
Health	Cooling	Chiller - Variable Speed Fans	HP fan	Existing	1,027.88	15	\$208.36	15%	75%	\$0.02	413.31	460.39	New Jersey TRM
Health	Cooling	Water-Cooled Chiller - Condenser Water Reset	ChillCtrl	Existing	56,287.88	10	\$884.85	15%	75%	\$0.00	1,342.22	1,379.36	AEG-BEST
Health	Cooling	HVAC - Economizer	HP cool	Existing	113.29	10	\$168.42	18%	75%	\$0.13	471.43	602.13	AEG-BEST
Health	Heating	Space Heating - Heat Recovery Ventilator	CFM	Existing	5.43	14	\$5.08	3%	75%	\$0.10	167.26	142.68	7th Power Plan
Health	Ventilation	Ventilation - ECM on VAV Boxes	sqft	Existing	0.67	18	\$0.25	15%	20%	\$0.03	92.95	96.96	7th Power Plan
Health	Ventilation	Ventilation - Variable Speed Control	sqft	Existing	0.06	15	\$181.39	13%	50%	\$279.94	64.49	72.82	AEG-BEST

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Health	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.03	15	\$0.25	15%	75%	\$0.68	61.05	67.34	7th Power Plan
Health	Cooling	Destratification Fans (HVLS)	Strat Fan	Existing	5,056.92	15	\$7,270.90	15%	15%	\$0.02	0.00	0.00	AEG Research
Health	Heating	Destratification Fans (HVLS)	Strat Fan	Existing	38,064.72	15	\$7,270.90	15%	15%	\$0.02	0.00	0.00	AEG Research
Health	Cooling	RTU - Maintenance	tonCool	Existing	75.97	3	\$35.00	15%	45%	\$0.10	25.21	34.14	AEG Research
Health	Cooling	RTU - Advanced Controls	sqft	Existing	0.17	15	\$0.07	15%	45%	\$0.03	15.18	16.32	7th Power Plan
Health	Cooling	RTU - Evaporative Precooler	tonCool	Existing	153.63	15	\$681.62	15%	75%	\$0.30	90.32	102.02	AEG Research
Health	Cooling	Ductless Mini Split Heat Pump	tonCool	Existing	355.86	15	\$3,359.26	15%	25%	\$0.28	1.29	1.68	7th Power Plan
Health	Heating	Ductless Mini Split Heat Pump	tonCool	Existing	662.83	15	\$3,359.26	15%	25%	\$0.28	0.50	0.45	7th Power Plan
Health	Cooling	Thermostat - WiFi/Interactive	sqft	Existing	0.49	5	\$0.66	30%	40%	\$0.04	118.15	142.92	7th Power Plan
Health	Heating	Thermostat - WiFi/Interactive	sqft	Existing	2.16	5	\$0.66	30%	40%	\$0.04	33.28	30.49	7th Power Plan
Health	Ventilation	Thermostat - WiFi/Interactive	sqft	Existing	0.46	5	\$0.66	30%	40%	\$0.04	125.15	133.03	7th Power Plan
Health	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	Existing	222.24	10	\$8.35	25%	65%	\$0.00	26.00	38.93	Illinois TRM
Health	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	Existing	230.26	10	\$11.64	25%	65%	\$0.00	13.42	20.27	7th Power Plan
Health	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	Existing	66.22	15	\$36.75	15%	50%	\$0.03	13.51	18.06	Hawaii TRM
Health	Water Heating	Water Heater - Pipe Insulation	PipeFeet	Existing	706.79	15	\$14.88	16%	75%	\$0.00	51.35	72.76	AEG-BEST
Health	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	Existing	152.15	4	\$144.04	25%	65%	\$0.14	17.30	26.29	7th Power Plan
Health	Water Heating	Water Heater - Thermostat Setback	WHunits	Existing	66.10	2	\$5.00	15%	75%	\$0.02	25.15	37.89	Illinois TRM
Health	Water Heating	Water Heater - Solar System	PipeFeet	Existing	2,449.74	20	\$215.28	1%	30%	\$0.00	86.50	124.54	AEG-BEST
Health	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.84	15	\$0.35	3%	23%	\$0.03	593.75	665.00	7th Power Plan
Health	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	1.15	15	\$0.58	3%	23%	\$0.04	800.65	915.47	7th Power Plan
Health	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	Existing	367.66	15	\$54.41	1%	3%	\$0.01	17.29	20.98	7th Power Plan

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Health	Interior Lighting	Interior Lighting - Timeclocks and Timers	occ sens	Existing	0.00	8	\$111.67	7%	15%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Health	Interior Lighting	Interior Lighting - Skylights	1000 sqft	Existing	0.00	15	\$1,006.35	15%	25%	\$0.00	0.00	0.00	AEG Research
Health	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	1000 sqft	Existing	547.83	16	\$1,807.69	5%	15%	\$0.24	150.80	196.33	7th Power Plan
Health	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	Existing	5,219.91	11	\$30.80	15%	50%	\$0.00	531.97	630.39	Illinois TRM
Health	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	ELtg Watts	Existing	1.41	8	\$0.63	15%	25%	\$0.05	78.27	101.03	7th Power Plan
Health	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	Existing	93.77	8	\$55.10	15%	25%	\$0.06	39.56	52.59	Pacific Gas and Electric Research
Health	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	Existing	114.03	7	\$3,400.00	15%	30%	\$3.39	71.41	97.10	AEG Research
Health	Refrigeration	Refrigeration - Anti-Sweat Heater	Fridge Feet	Existing	14.99	8	\$48.18	0%	25%	\$0.49	5.97	7.24	7th Power Plan
Health	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	Existing	30.55	4	\$10.44	0%	25%	\$0.09	11.16	12.34	Michigan Energy Measures Database
Health	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	Existing	273.19	16	\$165.20	0%	25%	\$0.06	16.45	17.17	7th Power Plan
Health	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	Existing	29.28	15	\$335.85	0%	0%	\$1.20	0.00	0.00	7th Power Plan
Health	Refrigeration	Refrigeration - Strip Curtain	Walkln Door	Existing	22.16	2	\$10.41	0%	25%	\$0.22	4.98	5.23	7th Power Plan
Health	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBtuh	Existing	0.46	15	\$45.43	0%	13%	\$9.91	31.33	30.86	Annual Energy Outlook, 2015
Health	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	Existing	9.90	15	\$313.82	0%	13%	\$3.30	56.40	54.25	Annual Energy Outlook, 2015
Health	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	Existing	177.49	10	\$506.05	0%	25%	\$0.37	10.59	11.33	Vermont TRM
Health	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	Existing	9.81	6	\$45.41	0%	0%	\$0.86	0.00	0.00	7th Power Plan
Health	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	Existing	0.79	8	\$3.72	0%	0%	\$0.71	0.00	0.00	7th Power Plan
Health	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	Existing	152.57	5	\$45.85	0%	0%	\$0.07	0.00	0.00	Illinois TRM
Health	Refrigeration	Grocery - ECMs for Display Cases	Fridge Case	Existing	41.13	16	\$165.20	0%	25%	\$0.41	5.71	5.47	7th Power Plan

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Health	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	Existing	1,444.11	5	\$187.94	25%	75%	\$0.03	52.24	45.06	Illinois TRM
Health	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	Existing	5,654.60	18	\$8,526.67	25%	50%	\$0.13	156.75	165.15	7th Power Plan
Health	Office Equipment	Office Equipment - Smart Power Strips	Smart Strip	Existing	28.08	4	\$41.63	10%	50%	\$0.35	79.28	63.64	7th Power Plan
Health	Cooling	Lodging - Guest Room Controls	LodgUnit	Existing	435.56	15	\$260.00	0%	0%	\$0.22	0.00	0.00	AEG-BEST
Health	Heating	Lodging - Guest Room Controls	LodgUnit	Existing	-380.35	15	\$260.00	0%	0%	\$0.22	0.00	0.00	AEG-BEST
Health	Office Equipment	Data Center - Best Practice Measures	sqft	Existing	0.01	5	\$0.00	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Health	Cooling	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Health	Ventilation	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Health	Interior Lighting	Data Center - Commercially Available Measures	sqft	Existing	0.07	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Health	Office Equipment	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Health	Cooling	Data Center - Cutting Edge Measures	sqft	Existing	0.06	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Health	Office Equipment	Data Center - Cutting Edge Measures	sqft	Existing	0.00	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Health	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	Existing	5,726.01	18	\$4,092.80	0%	5%	\$0.06	26.39	27.67	7th Power Plan
Health	Miscellaneous	Pool Pump - Timer	perBldg	Existing	0.00	10	\$85.22	15%	75%	\$0.00	0.00	0.00	Ontario Power TRM
Health	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	Existing	14,883.11	6	\$35.93	1%	3%	\$0.00	0.00	59.44	7th Power Plan
Health	Cooling	Advanced New Construction Designs	sqft	Existing	0.79	25	\$4.11	0%	0%	\$0.03	0.00	0.00	AEG Research
Health	Heating	Advanced New Construction Designs	sqft	Existing	4.31	25	\$4.11	0%	0%	\$0.03	0.00	0.00	AEG Research
Health	Ventilation	Advanced New Construction Designs	sqft	Existing	0.70	25	\$4.11	0%	0%	\$0.03	0.00	0.00	AEG Research
Health	Water Heating	Advanced New Construction Designs	sqft	Existing	0.76	25	\$4.11	0%	0%	\$0.03	0.00	0.00	AEG Research

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Health	Interior Lighting	Advanced New Construction Designs	sqft	Existing	1.87	25	\$4.11	0%	0%	\$0.03	0.00	0.00	AEG Research
Health	Exterior Lighting	Advanced New Construction Designs	sqft	Existing	0.18	25	\$4.11	0%	0%	\$0.03	0.00	0.00	AEG Research
Health	Cooling	Strategic Energy Management	sqft	Existing	0.17	3	\$0.71	4%	28%	\$0.13	103.81	139.49	AEG Research
Health	Heating	Strategic Energy Management	sqft	Existing	0.73	3	\$0.71	4%	28%	\$0.13	29.32	26.19	AEG Research
Health	Ventilation	Strategic Energy Management	sqft	Existing	0.15	3	\$0.71	4%	28%	\$0.13	109.58	121.33	AEG Research
Health	Water Heating	Strategic Energy Management	sqft	Existing	0.12	3	\$0.71	4%	28%	\$0.13	19.73	30.16	AEG Research
Health	Interior Lighting	Strategic Energy Management	sqft	Existing	0.26	3	\$0.71	4%	28%	\$0.13	169.73	222.57	AEG Research
Health	Exterior Lighting	Strategic Energy Management	sqft	Existing	0.03	3	\$0.71	4%	28%	\$0.13	17.16	23.17	AEG Research
Health	Refrigeration	Strategic Energy Management	sqft	Existing	0.03	3	\$0.71	4%	28%	\$0.13	21.88	21.41	AEG Research
Health	Office Equipment	Strategic Energy Management	sqft	Existing	0.04	3	\$0.71	4%	28%	\$0.13	31.16	25.43	AEG Research
Health	Cooling	Commissioning	sqft	Existing	0.22	3	\$2.56	0%	0%	\$0.37	0.00	0.00	AEG Research
Health	Heating	Commissioning	sqft	Existing	0.98	3	\$2.56	0%	0%	\$0.37	0.00	0.00	AEG Research
Health	Ventilation	Commissioning	sqft	Existing	0.21	3	\$2.56	0%	0%	\$0.37	0.00	0.00	AEG Research
Health	Water Heating	Commissioning	sqft	Existing	0.05	3	\$2.56	0%	0%	\$0.37	0.00	0.00	AEG Research
Health	Interior Lighting	Commissioning	sqft	Existing	0.29	3	\$2.56	0%	0%	\$0.37	0.00	0.00	AEG Research
Health	Exterior Lighting	Commissioning	sqft	Existing	0.03	3	\$2.56	0%	0%	\$0.37	0.00	0.00	AEG Research
Health	Refrigeration	Commissioning	sqft	Existing	0.06	3	\$2.56	0%	0%	\$0.37	0.00	0.00	AEG Research
Health	Cooling	Retrocommissioning	sqft	Existing	0.23	3	\$1.62	12%	52%	\$0.24	236.78	320.38	AEG Research
Health	Heating	Retrocommissioning	sqft	Existing	1.00	3	\$1.62	12%	52%	\$0.24	66.87	60.14	AEG Research
Health	Ventilation	Retrocommissioning	sqft	Existing	0.21	3	\$1.62	12%	52%	\$0.24	249.93	278.61	AEG Research
Health	Water Heating	Retrocommissioning	sqft	Existing	0.05	3	\$1.62	12%	52%	\$0.24	15.00	23.09	AEG Research
Health	Interior Lighting	Retrocommissioning	sqft	Existing	0.29	3	\$1.62	12%	52%	\$0.24	322.60	425.94	AEG Research

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Health	Exterior Lighting	Retrocommissioning	sqft	Existing	0.03	3	\$1.62	12%	52%	\$0.24	31.02	43.45	AEG Research
Health	Refrigeration	Retrocommissioning	sqft	Existing	0.07	3	\$1.62	12%	52%	\$0.24	81.77	81.35	AEG Research
Health	Interior Lighting	Fruit Storage - Lighting Controls	sqft	Existing	0.21	10	\$0.09	0%	0%	\$0.04	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Health	Refrigeration	Fruit Storage Refrigeration Retrofit	sqft	Existing	0.22	10	\$1.09	0%	0%	\$0.65	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Health	Refrigeration	Fruit Storage Refrigeration Tuneup	sqft	Existing	0.05	3	\$0.23	0%	0%	\$1.33	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Health	Refrigeration	Fruit Storage Retrofit - CO2 Scrub	sqft	Existing	0.10	10	\$3.13	0%	0%	\$3.85	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Health	Refrigeration	Fruit Storage Retrofit - Membrane	sqft	Existing	0.02	10	\$0.68	0%	0%	\$4.18	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Health	Cooling	Insulation - Ceiling	sqft roof	New	0.01	45	\$1.28	15%	50%	\$0.15	2.08	1.96	Building Energy Simulation Tool
Health	Heating	Insulation - Ceiling	sqft roof	New	0.53	45	\$1.28	15%	50%	\$0.15	3.63	3.36	Building Energy Simulation Tool
Health	Ventilation	Insulation - Ceiling	sqft roof	New	0.08	45	\$1.28	15%	50%	\$0.15	12.12	11.92	Building Energy Simulation Tool
Health	Cooling	Insulation - Ducting	sqft duct	New	0.22	20	\$0.84	15%	50%	\$0.00	33.23	31.28	Building Energy Simulation Tool
Health	Heating	Insulation - Ducting	sqft duct	New	0.00	20	\$0.84	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Health	Ventilation	Insulation - Ducting	sqft duct	New	0.00	20	\$0.84	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Health	Cooling	Building Shell - Cool Roofs	sqft roof	New	0.08	20	\$0.78	45%	50%	\$10.00	1.69	1.59	Building Energy Simulation Tool
Health	Heating	Building Shell - Cool Roofs	sqft roof	New	-0.26	20	\$0.78	45%	50%	\$10.00	-0.26	-0.24	Building Energy Simulation Tool
Health	Ventilation	Building Shell - Cool Roofs	sqft roof	New	-0.04	20	\$0.78	45%	50%	\$10.00	-0.86	-0.85	Building Energy Simulation Tool
Health	Cooling	Insulation - Wall Cavity	sqft wall	New	0.00	45	\$0.78	15%	50%	\$0.08	0.46	0.44	Building Energy Simulation Tool
Health	Heating	Insulation - Wall Cavity	sqft wall	New	0.67	45	\$0.78	15%	50%	\$0.08	4.00	3.69	Building Energy Simulation Tool
Health	Ventilation	Insulation - Wall Cavity	sqft wall	New	0.09	45	\$0.78	15%	50%	\$0.08	13.26	12.91	Building Energy Simulation Tool

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Health	Cooling	HVAC - Duct Repair and Sealing	tonCool	New	11.80	18	\$0.57	15%	35%	\$0.00	6.96	6.63	Building Energy Simulation Tool
Health	Heating	HVAC - Duct Repair and Sealing	tonCool	New	241.37	18	\$0.57	15%	35%	\$0.00	6.65	6.11	Building Energy Simulation Tool
Health	Ventilation	HVAC - Duct Repair and Sealing	tonCool	New	34.07	18	\$0.57	15%	35%	\$0.00	22.18	21.52	Building Energy Simulation Tool
Health	Cooling	Windows - High Efficiency Glazing	sqft window	New	5.29	30	\$35.93	66%	66%	\$0.04	0.00	0.00	7th Power Plan
Health	Heating	Windows - High Efficiency Glazing	sqft window	New	68.49	30	\$35.93	66%	66%	\$0.04	0.00	0.00	7th Power Plan
Health	Ventilation	Windows - High Efficiency Glazing	sqft window	New	5.55	30	\$35.93	66%	66%	\$0.04	0.00	0.00	7th Power Plan
Health	Cooling	Chiller - Chilled Water Reset	ChillCtrl	New	10,253.78	10	\$884.85	15%	75%	\$0.01	38.31	34.82	AEG-BEST
Health	Cooling	Chiller - Chilled Water Variable-Flow System	HP cool	New	269.14	15	\$332.55	15%	75%	\$0.08	179.65	163.47	AEG-BEST
Health	Cooling	Chiller - Variable Speed Fans	HP fan	New	582.38	15	\$208.36	15%	75%	\$0.02	38.78	35.32	New Jersey TRM
Health	Cooling	Water-Cooled Chiller - Condenser Water Reset	ChillCtrl	New	43,008.32	10	\$884.85	15%	75%	\$0.00	126.68	116.53	AEG-BEST
Health	Cooling	HVAC - Economizer	HP cool	New	69.87	10	\$168.42	18%	75%	\$0.18	39.85	37.06	AEG-BEST
Health	Heating	Space Heating - Heat Recovery Ventilator	CFM	New	4.95	14	\$5.08	6%	75%	\$0.11	17.73	15.40	7th Power Plan
Health	Ventilation	Ventilation - ECM on VAV Boxes	sqft	New	0.45	18	\$0.25	15%	20%	\$0.04	20.24	19.67	7th Power Plan
Health	Ventilation	Ventilation - Variable Speed Control	sqft	New	0.04	15	\$181.39	19%	50%	\$314.74	6.38	6.15	AEG-BEST
Health	Ventilation	Ventilation - Demand Controlled	sqft	New	0.02	15	\$0.25	15%	75%	\$0.77	6.98	6.75	7th Power Plan
Health	Cooling	Destratification Fans (HVLS)	Strat Fan	New	2,933.25	15	\$7,270.90	15%	15%	\$0.02	0.00	0.00	AEG Research
Health	Heating	Destratification Fans (HVLS)	Strat Fan	New	35,138.25	15	\$7,270.90	15%	15%	\$0.02	0.00	0.00	AEG Research
Health	Cooling	RTU - Maintenance	tonCool	New	85.53	3	\$35.00	15%	45%	\$0.08	0.82	0.81	AEG Research
Health	Cooling	RTU - Advanced Controls	sqft	New	0.17	15	\$0.07	15%	45%	\$0.03	4.68	4.29	7th Power Plan
Health	Cooling	RTU - Evaporative Precooler	tonCool	New	174.46	15	\$681.62	15%	75%	\$0.24	40.77	37.85	AEG Research
Health	Cooling	Ductless Mini Split Heat Pump	tonCool	New	396.23	15	\$3,359.26	15%	25%	\$0.25	0.35	0.32	7th Power Plan

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Health	Heating	Ductless Mini Split Heat Pump	tonCool	New	680.10	15	\$3,359.26	15%	25%	\$0.25	0.09	0.08	7th Power Plan
Health	Cooling	Thermostat - WiFi/Interactive	sqft	New	0.31	5	\$0.66	30%	40%	\$0.05	3.31	3.11	7th Power Plan
Health	Heating	Thermostat - WiFi/Interactive	sqft	New	2.03	5	\$0.66	30%	40%	\$0.05	0.98	0.83	7th Power Plan
Health	Ventilation	Thermostat - WiFi/Interactive	sqft	New	0.29	5	\$0.66	30%	40%	\$0.05	3.26	3.12	7th Power Plan
Health	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	New	74.01	10	\$8.35	25%	65%	\$0.01	2.15	2.52	Illinois TRM
Health	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	New	77.26	10	\$11.64	25%	65%	\$0.01	1.12	1.31	7th Power Plan
Health	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	New	44.61	15	\$36.75	15%	50%	\$0.03	3.09	3.27	Hawaii TRM
Health	Water Heating	Water Heater - Pipe Insulation	PipeFeet	New	457.98	15	\$14.88	1%	75%	\$0.00	8.14	9.23	AEG-BEST
Health	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	New	50.99	4	\$144.04	25%	65%	\$0.28	0.69	0.86	7th Power Plan
Health	Water Heating	Water Heater - Thermostat Setback	WHunits	New	43.92	2	\$5.00	15%	75%	\$0.02	0.28	0.36	Illinois TRM
Health	Water Heating	Water Heater - Solar System	PipeFeet	New	1,601.37	20	\$215.28	1%	30%	\$0.00	11.52	13.01	AEG-BEST
Health	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.71	15	\$0.35	11%	23%	\$0.03	159.13	161.64	7th Power Plan
Health	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.98	15	\$0.58	11%	23%	\$0.04	218.82	222.89	7th Power Plan
Health	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	New	311.78	15	\$54.41	1%	3%	\$0.01	1.80	1.88	7th Power Plan
Health	Interior Lighting	Interior Lighting - Timeclocks and Timers	occ sens	New	0.00	8	\$111.67	7%	15%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Health	Interior Lighting	Interior Lighting - Skylights	1000 sqft	New	0.00	15	\$1,006.35	18%	25%	\$0.00	0.00	0.00	AEG Research
Health	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	1000 sqft	New	418.28	16	\$1,807.69	5%	15%	\$0.25	19.03	20.01	7th Power Plan
Health	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	New	3,980.89	11	\$30.80	15%	50%	\$0.00	51.91	53.62	Illinois TRM
Health	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	ELtg Watts	New	0.95	8	\$0.63	15%	25%	\$0.05	5.85	6.57	7th Power Plan

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Health	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	New	64.25	8	\$55.10	15%	25%	\$0.06	3.01	3.44	Pacific Gas and Electric Research
Health	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	New	79.65	7	\$3,400.00	15%	30%	\$3.43	4.92	5.64	AEG Research
Health	Refrigeration	Refrigeration - Anti-Sweat Heater	Fridge Feet	New	10.41	8	\$48.18	0%	25%	\$0.72	0.47	0.39	7th Power Plan
Health	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	New	24.06	4	\$10.44	0%	25%	\$0.11	0.42	0.34	Michigan Energy Measures Database
Health	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	New	222.94	16	\$165.20	0%	25%	\$0.08	2.17	1.87	7th Power Plan
Health	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	New	27.32	15	\$335.85	0%	0%	\$1.31	0.00	0.00	7th Power Plan
Health	Refrigeration	Refrigeration - Strip Curtain	Walkin Door	New	19.32	2	\$10.41	0%	25%	\$0.26	0.06	0.05	7th Power Plan
Health	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	New	0.44	15	\$45.43	0%	13%	\$10.85	4.51	3.85	Annual Energy Outlook, 2015
Health	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	New	9.25	15	\$313.82	0%	13%	\$3.61	7.85	6.71	Annual Energy Outlook, 2015
Health	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	New	148.29	10	\$506.05	0%	25%	\$0.46	1.11	0.93	Vermont TRM
Health	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	New	9.01	6	\$45.41	0%	0%	\$0.96	0.00	0.00	7th Power Plan
Health	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	New	0.73	8	\$3.72	0%	0%	\$0.79	0.00	0.00	7th Power Plan
Health	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	New	143.10	5	\$45.85	0%	0%	\$0.07	0.00	0.00	Illinois TRM
Health	Refrigeration	Grocery - ECMs for Display Cases	Fridge Case	New	37.46	16	\$165.20	0%	25%	\$0.46	0.80	0.68	7th Power Plan
Health	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	New	1,424.61	5	\$187.94	25%	75%	\$0.03	2.83	2.32	Illinois TRM
Health	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	New	3,787.09	18	\$8,526.67	25%	50%	\$0.15	33.68	33.03	7th Power Plan
Health	Office Equipment	Office Equipment - Smart Power Strips	Smart Strip	New	33.24	4	\$41.63	10%	50%	\$0.29	3.54	2.62	7th Power Plan
Health	Cooling	Lodging - Guest Room Controls	LodgUnit	New	409.15	15	\$260.00	0%	0%	\$0.11	0.00	0.00	AEG-BEST
Health	Heating	Lodging - Guest Room Controls	LodgUnit	New	-378.84	15	\$260.00	0%	0%	\$0.11	0.00	0.00	AEG-BEST

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Health	Office Equipment	Data Center - Best Practice Measures	sqft	New	0.01	5	\$0.00	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Health	Cooling	Data Center - Commercially Available Measures	sqft	New	0.01	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Health	Ventilation	Data Center - Commercially Available Measures	sqft	New	0.01	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Health	Interior Lighting	Data Center - Commercially Available Measures	sqft	New	0.06	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Health	Office Equipment	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Health	Cooling	Data Center - Cutting Edge Measures	sqft	New	0.03	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Health	Office Equipment	Data Center - Cutting Edge Measures	sqft	New	0.00	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Health	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	New	3,882.87	18	\$4,092.80	0%	5%	\$0.07	5.78	5.62	7th Power Plan
Health	Miscellaneous	Pool Pump - Timer	perBldg	New	0.00	10	\$85.22	15%	75%	\$0.00	0.00	0.00	Ontario Power TRM
Health	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	New	7,441.56	6	\$35.93	1%	3%	\$0.00	0.00	2.46	7th Power Plan
Health	Cooling	Advanced New Construction Designs	sqft	New	0.71	25	\$4.11	10%	25%	\$0.03	105.72	97.48	AEG Research
Health	Heating	Advanced New Construction Designs	sqft	New	4.63	25	\$4.11	10%	25%	\$0.03	30.92	28.35	AEG Research
Health	Ventilation	Advanced New Construction Designs	sqft	New	0.65	25	\$4.11	10%	25%	\$0.03	102.54	99.90	AEG Research
Health	Water Heating	Advanced New Construction Designs	sqft	New	0.51	25	\$4.11	10%	25%	\$0.03	23.09	24.18	AEG Research
Health	Interior Lighting	Advanced New Construction Designs	sqft	New	1.42	25	\$4.11	10%	25%	\$0.03	194.21	195.73	AEG Research
Health	Exterior Lighting	Advanced New Construction Designs	sqft	New	0.12	25	\$4.11	10%	25%	\$0.03	17.66	18.08	AEG Research
Health	Cooling	Strategic Energy Management	sqft	New	0.11	3	\$0.60	4%	28%	\$0.11	2.21	2.15	AEG Research
Health	Heating	Strategic Energy Management	sqft	New	0.69	3	\$0.60	4%	28%	\$0.11	0.65	0.54	AEG Research
Health	Ventilation	Strategic Energy Management	sqft	New	0.10	3	\$0.60	4%	28%	\$0.11	2.17	2.06	AEG Research

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Health	Water Heating	Strategic Energy Management	sqft	New	0.08	3	\$0.60	4%	28%	\$0.11	0.50	0.63	AEG Research
Health	Interior Lighting	Strategic Energy Management	sqft	New	0.22	3	\$0.60	4%	28%	\$0.11	4.16	4.77	AEG Research
Health	Exterior Lighting	Strategic Energy Management	sqft	New	0.02	3	\$0.60	4%	28%	\$0.11	0.38	0.45	AEG Research
Health	Refrigeration	Strategic Energy Management	sqft	New	0.03	3	\$0.60	4%	28%	\$0.11	0.57	0.46	AEG Research
Health	Office Equipment	Strategic Energy Management	sqft	New	0.04	3	\$0.60	4%	28%	\$0.11	0.90	0.66	AEG Research
Health	Cooling	Commissioning	sqft	New	0.15	3	\$2.03	12%	52%	\$0.32	5.10	4.94	AEG Research
Health	Heating	Commissioning	sqft	New	0.95	3	\$2.03	12%	52%	\$0.32	1.51	1.25	AEG Research
Health	Ventilation	Commissioning	sqft	New	0.14	3	\$2.03	12%	52%	\$0.32	5.01	4.76	AEG Research
Health	Water Heating	Commissioning	sqft	New	0.04	3	\$2.03	12%	52%	\$0.32	0.38	0.48	AEG Research
Health	Interior Lighting	Commissioning	sqft	New	0.25	3	\$2.03	12%	52%	\$0.32	8.00	9.16	AEG Research
Health	Exterior Lighting	Commissioning	sqft	New	0.02	3	\$2.03	12%	52%	\$0.32	0.72	0.87	AEG Research
Health	Refrigeration	Commissioning	sqft	New	0.07	3	\$2.03	12%	52%	\$0.32	2.19	1.77	AEG Research
Health	Cooling	Retrocommissioning	sqft	New	0.15	3	\$1.29	0%	0%	\$0.21	0.00	0.00	AEG Research
Health	Heating	Retrocommissioning	sqft	New	0.95	3	\$1.29	0%	0%	\$0.21	0.00	0.00	AEG Research
Health	Ventilation	Retrocommissioning	sqft	New	0.14	3	\$1.29	0%	0%	\$0.21	0.00	0.00	AEG Research
Health	Water Heating	Retrocommissioning	sqft	New	0.04	3	\$1.29	0%	0%	\$0.21	0.00	0.00	AEG Research
Health	Interior Lighting	Retrocommissioning	sqft	New	0.25	3	\$1.29	0%	0%	\$0.21	0.00	0.00	AEG Research
Health	Exterior Lighting	Retrocommissioning	sqft	New	0.02	3	\$1.29	0%	0%	\$0.21	0.00	0.00	AEG Research
Health	Refrigeration	Retrocommissioning	sqft	New	0.07	3	\$1.29	0%	0%	\$0.21	0.00	0.00	AEG Research
Health	Interior Lighting	Fruit Storage - Lighting Controls	sqft	New	0.18	10	\$0.09	0%	0%	\$0.04	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Health	Refrigeration	Fruit Storage Refrigeration Retrofit	sqft	New	0.22	10	\$1.09	0%	0%	\$0.65	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Health	Refrigeration	Fruit Storage Refrigeration Tuneup	sqft	New	0.06	3	\$0.23	0%	0%	\$1.33	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx

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Health	Refrigeration	Fruit Storage Retrofit - CO2 Scrub	sqft	New	0.11	10	\$3.13	0%	0%	\$3.84	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Health	Refrigeration	Fruit Storage Retrofit - Membrane	sqft	New	0.02	10	\$0.68	0%	0%	\$4.16	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
College	Cooling	Insulation - Ceiling	sqft roof	Existing	0.02	45	\$1.28	15%	35%	\$0.09	24.53	23.39	Building Energy Simulation Tool
College	Heating	Insulation - Ceiling	sqft roof	Existing	1.01	45	\$1.28	15%	35%	\$0.09	301.11	268.38	Building Energy Simulation Tool
College	Ventilation	Insulation - Ceiling	sqft roof	Existing	0.12	45	\$1.28	15%	35%	\$0.09	146.79	154.46	Building Energy Simulation Tool
College	Cooling	Insulation - Ducting	sqft duct	Existing	0.43	20	\$0.84	15%	35%	\$0.00	228.50	225.13	Building Energy Simulation Tool
College	Heating	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.84	15%	35%	\$0.00	0.00	0.00	Building Energy Simulation Tool
College	Ventilation	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.84	15%	35%	\$0.00	0.00	0.00	Building Energy Simulation Tool
College	Cooling	Building Shell - Cool Roofs	sqft roof	Existing	0.29	20	\$0.78	45%	50%	\$10.00	71.56	76.13	Building Energy Simulation Tool
College	Heating	Building Shell - Cool Roofs	sqft roof	Existing	-0.34	20	\$0.78	45%	50%	\$10.00	-24.54	-23.13	Building Energy Simulation Tool
College	Ventilation	Building Shell - Cool Roofs	sqft roof	Existing	-0.04	20	\$0.78	45%	50%	\$10.00	-12.53	-13.78	Building Energy Simulation Tool
College	Cooling	Insulation - Wall Cavity	sqft wall	Existing	-0.33	45	\$0.78	15%	35%	\$0.06	-111.86	-104.75	Building Energy Simulation Tool
College	Heating	Insulation - Wall Cavity	sqft wall	Existing	1.31	45	\$0.78	15%	35%	\$0.06	122.62	108.17	Building Energy Simulation Tool
College	Ventilation	Insulation - Wall Cavity	sqft wall	Existing	0.15	45	\$0.78	15%	35%	\$0.06	59.04	61.64	Building Energy Simulation Tool
College	Cooling	HVAC - Duct Repair and Sealing	tonCool	Existing	17.49	18	\$0.57	15%	50%	\$10.00	122.50	130.70	Building Energy Simulation Tool
College	Heating	HVAC - Duct Repair and Sealing	tonCool	Existing	-18.45	18	\$0.57	15%	50%	\$10.00	-37.29	-35.13	Building Energy Simulation Tool
College	Ventilation	HVAC - Duct Repair and Sealing	tonCool	Existing	-2.28	18	\$0.57	15%	50%	\$10.00	-19.05	-20.92	Building Energy Simulation Tool
College	Cooling	Windows - High Efficiency Glazing	sqft window	Existing	8.27	30	\$35.93	48%	48%	\$0.04	0.00	0.00	7th Power Plan
College	Heating	Windows - High Efficiency Glazing	sqft window	Existing	71.70	30	\$35.93	48%	48%	\$0.04	0.00	0.00	7th Power Plan

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College	Ventilation	Windows - High Efficiency Glazing	sqft window	Existing	4.90	30	\$35.93	48%	48%	\$0.04	0.00	0.00	7th Power Plan
College	Cooling	Chiller - Chilled Water Reset	ChillCtrl	Existing	14,761.12	10	\$884.85	15%	75%	\$0.01	398.57	359.87	AEG-BEST
College	Cooling	Chiller - Chilled Water Variable-Flow System	HP cool	Existing	405.51	15	\$332.55	15%	75%	\$0.08	1,502.59	1,405.03	AEG-BEST
College	Cooling	Chiller - Variable Speed Fans	HP fan	Existing	961.06	15	\$208.36	15%	75%	\$0.02	359.31	328.43	New Jersey TRM
College	Cooling	Water-Cooled Chiller - Condenser Water Reset	ChillCtrl	Existing	0.00	10	\$884.85	15%	75%	\$0.00	0.00	0.00	AEG-BEST
College	Cooling	HVAC - Economizer	HP cool	Existing	82.07	10	\$168.42	18%	75%	\$0.23	783.26	779.65	AEG-BEST
College	Heating	Space Heating - Heat Recovery Ventilator	CFM	Existing	1.95	14	\$5.08	3%	75%	\$0.29	1,262.72	1,082.49	7th Power Plan
College	Ventilation	Ventilation - ECM on VAV Boxes	sqft	Existing	0.28	18	\$0.25	15%	20%	\$0.07	87.09	91.20	7th Power Plan
College	Ventilation	Ventilation - Variable Speed Control	sqft	Existing	0.03	15	\$181.39	13%	50%	\$600.96	60.18	67.92	AEG-BEST
College	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.01	15	\$0.25	15%	75%	\$1.47	57.11	62.82	7th Power Plan
College	Cooling	Destratification Fans (HVLS)	Strat Fan	Existing	3,793.04	15	\$7,270.90	15%	25%	\$0.02	194.78	180.26	AEG Research
College	Heating	Destratification Fans (HVLS)	Strat Fan	Existing	30,695.92	15	\$7,270.90	15%	25%	\$0.02	435.73	364.97	AEG Research
College	Cooling	RTU - Maintenance	tonCool	Existing	41.85	3	\$35.00	15%	45%	\$0.22	161.72	174.70	AEG Research
College	Cooling	RTU - Advanced Controls	sqft	Existing	0.10	15	\$0.07	15%	45%	\$0.07	91.83	86.99	7th Power Plan
College	Cooling	RTU - Evaporative Precooler	tonCool	Existing	85.35	15	\$681.62	15%	75%	\$0.69	584.85	587.37	AEG Research
College	Cooling	Ductless Mini Split Heat Pump	tonCool	Existing	196.27	15	\$3,359.26	15%	25%	\$0.51	15.38	16.68	7th Power Plan
College	Heating	Ductless Mini Split Heat Pump	tonCool	Existing	433.84	15	\$3,359.26	15%	25%	\$0.51	222.73	200.11	7th Power Plan
College	Cooling	Thermostat - WiFi/Interactive	sqft	Existing	0.39	5	\$0.66	30%	40%	\$0.06	201.74	204.02	7th Power Plan
College	Heating	Thermostat - WiFi/Interactive	sqft	Existing	1.70	5	\$0.66	30%	40%	\$0.06	249.67	229.44	7th Power Plan
College	Ventilation	Thermostat - WiFi/Interactive	sqft	Existing	0.21	5	\$0.66	30%	40%	\$0.06	127.59	136.65	7th Power Plan
College	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	Existing	128.03	10	\$8.35	25%	65%	\$0.01	19.70	29.58	Illinois TRM

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College	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	Existing	132.77	10	\$11.64	25%	65%	\$0.01	10.18	15.41	7th Power Plan
College	Water Heating	Water Heater - High Efficiency Circulation Pump	WHUnits	Existing	66.21	15	\$36.75	15%	25%	\$0.03	2.91	3.90	Hawaii TRM
College	Water Heating	Water Heater - Pipe Insulation	PipeFeet	Existing	405.32	15	\$14.88	16%	75%	\$0.00	38.65	55.09	AEG-BEST
College	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	Existing	88.09	4	\$144.04	25%	65%	\$0.24	13.20	20.02	7th Power Plan
College	Water Heating	Water Heater - Thermostat Setback	WHUnits	Existing	66.27	2	\$5.00	15%	75%	\$0.02	19.17	28.83	Illinois TRM
College	Water Heating	Water Heater - Solar System	PipeFeet	Existing	1,406.92	20	\$215.28	1%	30%	\$0.01	65.23	94.38	AEG-BEST
College	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.44	15	\$0.35	3%	23%	\$0.06	629.72	725.21	7th Power Plan
College	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.60	15	\$0.58	3%	23%	\$0.07	847.17	997.60	7th Power Plan
College	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	Existing	364.53	15	\$54.41	1%	3%	\$0.01	17.58	21.89	7th Power Plan
College	Interior Lighting	Interior Lighting - Timeclocks and Timers	occ sens	Existing	0.00	8	\$111.67	7%	15%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
College	Interior Lighting	Interior Lighting - Skylights	1000 sqft	Existing	0.00	15	\$1,006.35	15%	30%	\$0.00	0.00	0.00	AEG Research
College	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	1000 sqft	Existing	289.46	16	\$1,807.69	5%	15%	\$0.45	162.26	219.73	7th Power Plan
College	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	Existing	2,767.68	11	\$30.80	15%	50%	\$0.00	577.26	706.71	Illinois TRM
College	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	ELtg Watts	Existing	0.43	8	\$0.63	15%	25%	\$0.17	212.03	276.69	7th Power Plan
College	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	Existing	39.94	8	\$55.10	15%	25%	\$0.16	115.77	148.70	Pacific Gas and Electric Research
College	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	Existing	46.02	7	\$3,400.00	15%	30%	\$8.64	194.17	266.46	AEG Research
College	Refrigeration	Refrigeration - Anti-Sweat Heater	Fridge Feet	Existing	10.13	8	\$48.18	0%	25%	\$0.73	2.49	3.01	7th Power Plan
College	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	Existing	27.74	4	\$10.44	0%	25%	\$0.10	5.79	6.45	Michigan Energy Measures Database
College	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	Existing	271.39	16	\$165.20	0%	25%	\$0.06	8.58	9.10	7th Power Plan

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College	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	Existing	24.83	15	\$335.85	0%	0%	\$1.42	0.00	0.00	7th Power Plan
College	Refrigeration	Refrigeration - Strip Curtain	Walkin Door	Existing	14.98	2	\$10.41	0%	25%	\$0.33	1.64	1.72	7th Power Plan
College	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	Existing	0.38	15	\$45.43	0%	13%	\$11.74	15.26	15.42	Annual Energy Outlook, 2015
College	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	Existing	8.40	15	\$313.82	0%	13%	\$3.91	28.69	27.59	Annual Energy Outlook, 2015
College	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	Existing	176.85	10	\$506.05	0%	25%	\$0.38	5.54	6.01	Vermont TRM
College	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	Existing	8.08	6	\$45.41	0%	0%	\$1.05	0.00	0.00	7th Power Plan
College	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	Existing	0.65	8	\$3.72	0%	0%	\$0.87	0.00	0.00	7th Power Plan
College	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	Existing	103.12	5	\$45.85	0%	0%	\$0.10	0.00	0.00	Illinois TRM
College	Refrigeration	Grocery - ECMs for Display Cases	Fridge Case	Existing	33.84	16	\$165.20	0%	25%	\$0.50	2.90	2.77	7th Power Plan
College	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	Existing	1,445.97	5	\$187.94	25%	75%	\$0.03	21.68	18.68	Illinois TRM
College	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	Existing	2,364.88	18	\$8,526.67	25%	50%	\$0.29	145.72	154.79	7th Power Plan
College	Office Equipment	Office Equipment - Smart Power Strips	Smart Strip	Existing	32.80	4	\$41.63	10%	50%	\$0.30	194.25	154.77	7th Power Plan
College	Cooling	Lodging - Guest Room Controls	LodgUnit	Existing	182.83	15	\$260.00	0%	0%	\$10.00	0.00	0.00	AEG-BEST
College	Heating	Lodging - Guest Room Controls	LodgUnit	Existing	-245.35	15	\$260.00	0%	0%	\$10.00	0.00	0.00	AEG-BEST
College	Office Equipment	Data Center - Best Practice Measures	sqft	Existing	0.01	5	\$0.00	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
College	Cooling	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
College	Ventilation	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
College	Interior Lighting	Data Center - Commercially Available Measures	sqft	Existing	0.03	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
College	Office Equipment	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx

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College	Cooling	Data Center - Cutting Edge Measures	sqft	Existing	0.04	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
College	Office Equipment	Data Center - Cutting Edge Measures	sqft	Existing	0.00	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
College	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	Existing	2,386.39	18	\$4,092.80	0%	5%	\$0.14	24.38	25.86	7th Power Plan
College	Miscellaneous	Pool Pump - Timer	perBldg	Existing	525.14	10	\$85.22	15%	75%	\$0.02	60.03	53.20	Ontario Power TRM
College	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	Existing	4,019.51	6	\$35.93	1%	3%	\$0.00	37.99	33.73	7th Power Plan
College	Cooling	Advanced New Construction Designs	sqft	Existing	0.69	25	\$4.11	0%	0%	\$0.05	0.00	0.00	AEG Research
College	Heating	Advanced New Construction Designs	sqft	Existing	3.76	25	\$4.11	0%	0%	\$0.05	0.00	0.00	AEG Research
College	Ventilation	Advanced New Construction Designs	sqft	Existing	0.44	25	\$4.11	0%	0%	\$0.05	0.00	0.00	AEG Research
College	Water Heating	Advanced New Construction Designs	sqft	Existing	0.48	25	\$4.11	0%	0%	\$0.05	0.00	0.00	AEG Research
College	Interior Lighting	Advanced New Construction Designs	sqft	Existing	0.87	25	\$4.11	0%	0%	\$0.05	0.00	0.00	AEG Research
College	Exterior Lighting	Advanced New Construction Designs	sqft	Existing	0.24	25	\$4.11	0%	0%	\$0.05	0.00	0.00	AEG Research
College	Cooling	Strategic Energy Management	sqft	Existing	0.13	3	\$0.32	3%	29%	\$0.08	183.78	198.60	AEG Research
College	Heating	Strategic Energy Management	sqft	Existing	0.57	3	\$0.32	3%	29%	\$0.08	236.68	214.50	AEG Research
College	Ventilation	Strategic Energy Management	sqft	Existing	0.07	3	\$0.32	3%	29%	\$0.08	121.68	134.33	AEG Research
College	Water Heating	Strategic Energy Management	sqft	Existing	0.07	3	\$0.32	3%	29%	\$0.08	17.88	27.26	AEG Research
College	Interior Lighting	Strategic Energy Management	sqft	Existing	0.13	3	\$0.32	3%	29%	\$0.08	185.62	251.30	AEG Research
College	Exterior Lighting	Strategic Energy Management	sqft	Existing	0.04	3	\$0.32	3%	29%	\$0.08	51.66	69.50	AEG Research
College	Refrigeration	Strategic Energy Management	sqft	Existing	0.01	3	\$0.32	3%	29%	\$0.08	12.05	11.79	AEG Research
College	Office Equipment	Strategic Energy Management	sqft	Existing	0.04	3	\$0.32	3%	29%	\$0.08	82.67	67.00	AEG Research
College	Cooling	Commissioning	sqft	Existing	0.17	3	\$1.16	0%	0%	\$0.25	0.00	0.00	AEG Research

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College	Heating	Commissioning	sqft	Existing	0.77	3	\$1.16	0%	0%	\$0.25	0.00	0.00	AEG Research
College	Ventilation	Commissioning	sqft	Existing	0.10	3	\$1.16	0%	0%	\$0.25	0.00	0.00	AEG Research
College	Water Heating	Commissioning	sqft	Existing	0.03	3	\$1.16	0%	0%	\$0.25	0.00	0.00	AEG Research
College	Interior Lighting	Commissioning	sqft	Existing	0.14	3	\$1.16	0%	0%	\$0.25	0.00	0.00	AEG Research
College	Exterior Lighting	Commissioning	sqft	Existing	0.04	3	\$1.16	0%	0%	\$0.25	0.00	0.00	AEG Research
College	Refrigeration	Commissioning	sqft	Existing	0.02	3	\$1.16	0%	0%	\$0.25	0.00	0.00	AEG Research
College	Cooling	Retrocommissioning	sqft	Existing	0.17	3	\$0.74	10%	46%	\$0.16	347.82	378.72	AEG Research
College	Heating	Retrocommissioning	sqft	Existing	0.78	3	\$0.74	10%	46%	\$0.16	447.93	408.99	AEG Research
College	Ventilation	Retrocommissioning	sqft	Existing	0.10	3	\$0.74	10%	46%	\$0.16	230.29	256.15	AEG Research
College	Water Heating	Retrocommissioning	sqft	Existing	0.03	3	\$0.74	10%	46%	\$0.16	11.28	17.33	AEG Research
College	Interior Lighting	Retrocommissioning	sqft	Existing	0.15	3	\$0.74	10%	46%	\$0.16	292.76	399.38	AEG Research
College	Exterior Lighting	Retrocommissioning	sqft	Existing	0.04	3	\$0.74	10%	46%	\$0.16	81.48	110.45	AEG Research
College	Refrigeration	Retrocommissioning	sqft	Existing	0.02	3	\$0.74	10%	46%	\$0.16	38.02	37.48	AEG Research
College	Interior Lighting	Fruit Storage - Lighting Controls	sqft	Existing	0.10	10	\$0.09	0%	0%	\$0.08	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
College	Refrigeration	Fruit Storage Refrigeration Retrofit	sqft	Existing	0.05	10	\$1.09	0%	0%	\$2.69	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
College	Refrigeration	Fruit Storage Refrigeration Tuneup	sqft	Existing	0.01	3	\$0.23	0%	0%	\$5.51	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
College	Refrigeration	Fruit Storage Retrofit - CO2 Scrub	sqft	Existing	0.02	10	\$3.13	0%	0%	\$15.93	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
College	Refrigeration	Fruit Storage Retrofit - Membrane	sqft	Existing	0.00	10	\$0.68	0%	0%	\$17.29	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
College	Cooling	Insulation - Ceiling	sqft roof	New	0.00	45	\$1.28	15%	50%	\$0.44	0.00	0.00	Building Energy Simulation Tool
College	Heating	Insulation - Ceiling	sqft roof	New	0.20	45	\$1.28	15%	50%	\$0.44	27.56	25.54	Building Energy Simulation Tool
College	Ventilation	Insulation - Ceiling	sqft roof	New	0.02	45	\$1.28	15%	50%	\$0.44	13.07	13.31	Building Energy Simulation Tool
College	Cooling	Insulation - Ducting	sqft duct	New	0.30	20	\$0.84	15%	50%	\$0.00	92.98	87.08	Building Energy Simulation Tool

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College	Heating	Insulation - Ducting	sqft duct	New	0.00	20	\$0.84	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
College	Ventilation	Insulation - Ducting	sqft duct	New	0.00	20	\$0.84	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
College	Cooling	Building Shell - Cool Roofs	sqft roof	New	0.10	20	\$0.78	45%	50%	\$2.79	9.03	8.51	Building Energy Simulation Tool
College	Heating	Building Shell - Cool Roofs	sqft roof	New	-0.09	20	\$0.78	45%	50%	\$2.79	-1.75	-1.61	Building Energy Simulation Tool
College	Ventilation	Building Shell - Cool Roofs	sqft roof	New	-0.01	20	\$0.78	45%	50%	\$2.79	-0.83	-0.84	Building Energy Simulation Tool
College	Cooling	Insulation - Wall Cavity	sqft wall	New	-0.02	45	\$0.78	15%	50%	\$0.56	-4.30	-4.05	Building Energy Simulation Tool
College	Heating	Insulation - Wall Cavity	sqft wall	New	0.12	45	\$0.78	15%	50%	\$0.56	5.37	4.94	Building Energy Simulation Tool
College	Ventilation	Insulation - Wall Cavity	sqft wall	New	0.01	45	\$0.78	15%	50%	\$0.56	2.56	2.58	Building Energy Simulation Tool
College	Cooling	HVAC - Duct Repair and Sealing	tonCool	New	12.95	18	\$0.57	15%	35%	\$10.00	17.46	16.59	Building Energy Simulation Tool
College	Heating	HVAC - Duct Repair and Sealing	tonCool	New	-22.12	18	\$0.57	15%	35%	\$10.00	-6.92	-6.37	Building Energy Simulation Tool
College	Ventilation	HVAC - Duct Repair and Sealing	tonCool	New	-1.80	18	\$0.57	15%	35%	\$10.00	-3.33	-3.39	Building Energy Simulation Tool
College	Cooling	Windows - High Efficiency Glazing	sqft window	New	5.84	30	\$35.93	66%	66%	\$0.04	0.00	0.00	7th Power Plan
College	Heating	Windows - High Efficiency Glazing	sqft window	New	69.94	30	\$35.93	66%	66%	\$0.04	0.00	0.00	7th Power Plan
College	Ventilation	Windows - High Efficiency Glazing	sqft window	New	3.23	30	\$35.93	66%	66%	\$0.04	0.00	0.00	7th Power Plan
College	Cooling	Chiller - Chilled Water Reset	ChillCtrl	New	10,944.87	10	\$884.85	15%	75%	\$0.01	37.47	33.12	AEG-BEST
College	Cooling	Chiller - Chilled Water Variable-Flow System	HP cool	New	308.53	15	\$332.55	15%	75%	\$0.09	188.14	168.17	AEG-BEST
College	Cooling	Chiller - Variable Speed Fans	HP fan	New	720.14	15	\$208.36	15%	75%	\$0.03	43.83	39.17	New Jersey TRM
College	Cooling	Water-Cooled Chiller - Condenser Water Reset	ChillCtrl	New	0.00	10	\$884.85	15%	75%	\$0.00	0.00	0.00	AEG-BEST
College	Cooling	HVAC - Economizer	HP cool	New	59.59	10	\$168.42	18%	75%	\$0.29	74.24	67.56	AEG-BEST

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College	Heating	Space Heating - Heat Recovery Ventilator	CFM	New	1.88	14	\$5.08	6%	75%	\$0.30	153.08	132.98	7th Power Plan
College	Ventilation	Ventilation - ECM on VAV Boxes	sqft	New	0.18	18	\$0.25	15%	20%	\$0.07	21.32	21.44	7th Power Plan
College	Ventilation	Ventilation - Variable Speed Control	sqft	New	0.02	15	\$181.39	19%	50%	\$598.64	6.73	6.89	AEG-BEST
College	Ventilation	Ventilation - Demand Controlled	sqft	New	0.01	15	\$0.25	15%	75%	\$1.46	7.35	7.55	7th Power Plan
College	Cooling	Destratification Fans (HVLS)	Strat Fan	New	2,665.24	15	\$7,270.90	15%	25%	\$0.02	22.32	19.93	AEG Research
College	Heating	Destratification Fans (HVLS)	Strat Fan	New	29,625.65	15	\$7,270.90	15%	25%	\$0.02	57.09	48.64	AEG Research
College	Cooling	RTU - Maintenance	tonCool	New	50.19	3	\$35.00	15%	45%	\$0.17	5.40	5.08	AEG Research
College	Cooling	RTU - Advanced Controls	sqft	New	0.11	15	\$0.07	15%	45%	\$0.05	31.42	28.78	7th Power Plan
College	Cooling	RTU - Evaporative Precooler	tonCool	New	102.83	15	\$681.62	15%	75%	\$0.54	271.92	254.34	AEG Research
College	Cooling	Ductless Mini Split Heat Pump	tonCool	New	228.55	15	\$3,359.26	15%	25%	\$0.47	3.68	3.43	7th Power Plan
College	Heating	Ductless Mini Split Heat Pump	tonCool	New	450.23	15	\$3,359.26	15%	25%	\$0.47	41.37	36.20	7th Power Plan
College	Cooling	Thermostat - WiFi/Interactive	sqft	New	0.28	5	\$0.66	30%	40%	\$0.06	6.03	5.62	7th Power Plan
College	Heating	Thermostat - WiFi/Interactive	sqft	New	1.70	5	\$0.66	30%	40%	\$0.06	8.45	7.14	7th Power Plan
College	Ventilation	Thermostat - WiFi/Interactive	sqft	New	0.14	5	\$0.66	30%	40%	\$0.06	4.06	4.18	7th Power Plan
College	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	New	85.62	10	\$8.35	25%	65%	\$0.01	1.72	2.02	Illinois TRM
College	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	New	89.40	10	\$11.64	25%	65%	\$0.01	0.90	1.05	7th Power Plan
College	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	New	44.74	15	\$36.75	15%	25%	\$0.03	0.70	0.75	Hawaii TRM
College	Water Heating	Water Heater - Pipe Insulation	PipeFeet	New	264.29	15	\$14.88	1%	75%	\$0.00	6.51	7.38	AEG-BEST
College	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	New	58.82	4	\$144.04	25%	65%	\$0.24	0.55	0.69	7th Power Plan
College	Water Heating	Water Heater - Thermostat Setback	WHunits	New	43.89	2	\$5.00	15%	75%	\$0.02	0.22	0.29	Illinois TRM
College	Water Heating	Water Heater - Solar System	PipeFeet	New	924.82	20	\$215.28	1%	30%	\$0.01	9.22	10.41	AEG-BEST

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College	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.36	15	\$0.35	11%	23%	\$0.06	177.72	181.37	7th Power Plan
College	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.50	15	\$0.58	11%	23%	\$0.07	244.17	249.92	7th Power Plan
College	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	New	299.49	15	\$54.41	1%	3%	\$0.01	1.93	2.01	7th Power Plan
College	Interior Lighting	Interior Lighting - Timeclocks and Timers	occ sens	New	0.00	8	\$111.67	7%	15%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
College	Interior Lighting	Interior Lighting - Skylights	1000 sqft	New	0.00	15	\$1,006.35	18%	33%	\$0.00	0.00	0.00	AEG Research
College	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	1000 sqft	New	218.96	16	\$1,807.69	5%	15%	\$0.48	22.01	23.41	7th Power Plan
College	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	New	2,100.14	11	\$30.80	15%	50%	\$0.00	60.71	63.08	Illinois TRM
College	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	ELtg Watts	New	0.33	8	\$0.63	15%	25%	\$0.17	18.19	19.74	7th Power Plan
College	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	New	30.24	8	\$55.10	15%	25%	\$0.16	9.71	10.56	Pacific Gas and Electric Research
College	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	New	36.88	7	\$3,400.00	15%	30%	\$8.75	15.72	17.02	AEG Research
College	Refrigeration	Refrigeration - Anti-Sweat Heater	Fridge Feet	New	7.08	8	\$48.18	0%	25%	\$1.07	0.26	0.22	7th Power Plan
College	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	New	21.58	4	\$10.44	0%	25%	\$0.13	0.29	0.23	Michigan Energy Measures Database
College	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	New	217.25	16	\$165.20	0%	25%	\$0.08	1.51	1.29	7th Power Plan
College	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	New	22.99	15	\$335.85	0%	0%	\$1.58	0.00	0.00	7th Power Plan
College	Refrigeration	Refrigeration - Strip Curtain	Walkin Door	New	13.16	2	\$10.41	0%	25%	\$0.38	0.03	0.02	7th Power Plan
College	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	New	0.37	15	\$45.43	0%	13%	\$13.05	3.05	2.58	Annual Energy Outlook, 2015
College	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	New	7.77	15	\$313.82	0%	13%	\$4.35	5.32	4.51	Annual Energy Outlook, 2015
College	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	New	144.62	10	\$506.05	0%	25%	\$0.47	0.77	0.64	Vermont TRM
College	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	New	7.47	6	\$45.41	0%	0%	\$1.17	0.00	0.00	7th Power Plan

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College	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	New	0.60	8	\$3.72	0%	0%	\$0.97	0.00	0.00	7th Power Plan
College	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	New	97.42	5	\$45.85	0%	0%	\$0.10	0.00	0.00	Illinois TRM
College	Refrigeration	Grocery - ECMs for Display Cases	Fridge Case	New	31.04	16	\$165.20	0%	25%	\$0.56	0.55	0.47	7th Power Plan
College	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	New	1,440.36	5	\$187.94	25%	75%	\$0.03	1.59	1.30	Illinois TRM
College	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	New	1,520.62	18	\$8,526.67	25%	50%	\$0.28	35.34	35.91	7th Power Plan
College	Office Equipment	Office Equipment - Smart Power Strips	Smart Strip	New	38.86	4	\$41.63	10%	50%	\$0.25	9.15	6.74	7th Power Plan
College	Cooling	Lodging - Guest Room Controls	LodgUnit	New	247.85	15	\$260.00	0%	0%	\$1.11	0.00	0.00	AEG-BEST
College	Heating	Lodging - Guest Room Controls	LodgUnit	New	-277.61	15	\$260.00	0%	0%	\$1.11	0.00	0.00	AEG-BEST
College	Office Equipment	Data Center - Best Practice Measures	sqft	New	0.01	5	\$0.00	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
College	Cooling	Data Center - Commercially Available Measures	sqft	New	0.01	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
College	Ventilation	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
College	Interior Lighting	Data Center - Commercially Available Measures	sqft	New	0.03	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
College	Office Equipment	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
College	Cooling	Data Center - Cutting Edge Measures	sqft	New	0.03	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
College	Office Equipment	Data Center - Cutting Edge Measures	sqft	New	0.00	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
College	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	New	1,563.56	18	\$4,092.80	0%	5%	\$0.14	6.09	6.13	7th Power Plan
College	Miscellaneous	Pool Pump - Timer	perBldg	New	518.26	10	\$85.22	15%	75%	\$0.02	8.55	7.52	Ontario Power TRM
College	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	New	3,960.37	6	\$35.93	1%	3%	\$0.00	1.75	1.48	7th Power Plan
College	Cooling	Advanced New Construction Designs	sqft	New	0.65	25	\$4.11	10%	30%	\$0.05	262.66	244.98	AEG Research

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College	Heating	Advanced New Construction Designs	sqft	New	3.88	25	\$4.11	10%	30%	\$0.05	358.53	327.22	AEG Research
College	Ventilation	Advanced New Construction Designs	sqft	New	0.31	25	\$4.11	10%	30%	\$0.05	171.15	172.73	AEG Research
College	Water Heating	Advanced New Construction Designs	sqft	New	0.33	25	\$4.11	10%	30%	\$0.05	27.01	28.29	AEG Research
College	Interior Lighting	Advanced New Construction Designs	sqft	New	0.68	25	\$4.11	10%	30%	\$0.05	276.22	279.23	AEG Research
College	Exterior Lighting	Advanced New Construction Designs	sqft	New	0.18	25	\$4.11	10%	30%	\$0.05	76.17	77.42	AEG Research
College	Cooling	Strategic Energy Management	sqft	New	0.10	3	\$0.30	3%	29%	\$0.08	4.37	4.09	AEG Research
College	Heating	Strategic Energy Management	sqft	New	0.57	3	\$0.30	3%	29%	\$0.08	6.10	5.08	AEG Research
College	Ventilation	Strategic Energy Management	sqft	New	0.05	3	\$0.30	3%	29%	\$0.08	2.94	3.02	AEG Research
College	Water Heating	Strategic Energy Management	sqft	New	0.05	3	\$0.30	3%	29%	\$0.08	0.47	0.60	AEG Research
College	Interior Lighting	Strategic Energy Management	sqft	New	0.10	3	\$0.30	3%	29%	\$0.08	4.79	5.45	AEG Research
College	Exterior Lighting	Strategic Energy Management	sqft	New	0.03	3	\$0.30	3%	29%	\$0.08	1.31	1.47	AEG Research
College	Refrigeration	Strategic Energy Management	sqft	New	0.01	3	\$0.30	3%	29%	\$0.08	0.42	0.34	AEG Research
College	Office Equipment	Strategic Energy Management	sqft	New	0.05	3	\$0.30	3%	29%	\$0.08	2.51	1.83	AEG Research
College	Cooling	Commissioning	sqft	New	0.13	3	\$1.03	10%	46%	\$0.23	8.37	7.82	AEG Research
College	Heating	Commissioning	sqft	New	0.79	3	\$1.03	10%	46%	\$0.23	11.70	9.72	AEG Research
College	Ventilation	Commissioning	sqft	New	0.06	3	\$1.03	10%	46%	\$0.23	5.64	5.78	AEG Research
College	Water Heating	Commissioning	sqft	New	0.02	3	\$1.03	10%	46%	\$0.23	0.30	0.38	AEG Research
College	Interior Lighting	Commissioning	sqft	New	0.12	3	\$1.03	10%	46%	\$0.23	7.64	8.69	AEG Research
College	Exterior Lighting	Commissioning	sqft	New	0.03	3	\$1.03	10%	46%	\$0.23	2.09	2.34	AEG Research
College	Refrigeration	Commissioning	sqft	New	0.02	3	\$1.03	10%	46%	\$0.23	1.34	1.07	AEG Research
College	Cooling	Retrocommissioning	sqft	New	0.13	3	\$0.65	0%	0%	\$0.15	0.00	0.00	AEG Research
College	Heating	Retrocommissioning	sqft	New	0.79	3	\$0.65	0%	0%	\$0.15	0.00	0.00	AEG Research

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College	Ventilation	Retrocommissioning	sqft	New	0.06	3	\$0.65	0%	0%	\$0.15	0.00	0.00	AEG Research
College	Water Heating	Retrocommissioning	sqft	New	0.02	3	\$0.65	0%	0%	\$0.15	0.00	0.00	AEG Research
College	Interior Lighting	Retrocommissioning	sqft	New	0.12	3	\$0.65	0%	0%	\$0.15	0.00	0.00	AEG Research
College	Exterior Lighting	Retrocommissioning	sqft	New	0.03	3	\$0.65	0%	0%	\$0.15	0.00	0.00	AEG Research
College	Refrigeration	Retrocommissioning	sqft	New	0.02	3	\$0.65	0%	0%	\$0.15	0.00	0.00	AEG Research
College	Interior Lighting	Fruit Storage - Lighting Controls	sqft	New	0.08	10	\$0.09	0%	0%	\$0.08	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
College	Refrigeration	Fruit Storage Refrigeration Retrofit	sqft	New	0.07	10	\$1.09	0%	0%	\$2.13	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
College	Refrigeration	Fruit Storage Refrigeration Tuneup	sqft	New	0.02	3	\$0.23	0%	0%	\$4.37	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
College	Refrigeration	Fruit Storage Retrofit - CO2 Scrub	sqft	New	0.03	10	\$3.13	0%	0%	\$12.65	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
College	Refrigeration	Fruit Storage Retrofit - Membrane	sqft	New	0.01	10	\$0.68	0%	0%	\$13.73	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
School	Cooling	Insulation - Ceiling	sqft roof	Existing	0.01	45	\$1.28	15%	35%	\$0.15	11.99	11.40	Building Energy Simulation Tool
School	Heating	Insulation - Ceiling	sqft roof	Existing	0.58	45	\$1.28	15%	35%	\$0.15	169.50	151.28	Building Energy Simulation Tool
School	Ventilation	Insulation - Ceiling	sqft roof	Existing	0.06	45	\$1.28	15%	35%	\$0.15	87.67	92.07	Building Energy Simulation Tool
School	Cooling	Insulation - Ducting	sqft duct	Existing	0.22	20	\$0.84	15%	35%	\$0.00	112.30	110.03	Building Energy Simulation Tool
School	Heating	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.84	15%	35%	\$0.00	0.00	0.00	Building Energy Simulation Tool
School	Ventilation	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.84	15%	35%	\$0.00	0.00	0.00	Building Energy Simulation Tool
School	Cooling	Building Shell - Cool Roofs	sqft roof	Existing	0.15	20	\$0.78	45%	50%	\$10.00	35.15	37.16	Building Energy Simulation Tool
School	Heating	Building Shell - Cool Roofs	sqft roof	Existing	-0.20	20	\$0.78	45%	50%	\$10.00	-13.91	-13.07	Building Energy Simulation Tool
School	Ventilation	Building Shell - Cool Roofs	sqft roof	Existing	-0.02	20	\$0.78	45%	50%	\$10.00	-7.57	-8.26	Building Energy Simulation Tool
School	Cooling	Insulation - Wall Cavity	sqft wall	Existing	-0.17	45	\$0.78	15%	35%	\$0.10	-54.26	-50.79	Building Energy Simulation Tool

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School	Heating	Insulation - Wall Cavity	sqft wall	Existing	0.74	45	\$0.78	15%	35%	\$0.10	67.58	60.14	Building Energy Simulation Tool
School	Ventilation	Insulation - Wall Cavity	sqft wall	Existing	0.08	45	\$0.78	15%	35%	\$0.10	35.29	36.76	Building Energy Simulation Tool
School	Cooling	HVAC - Duct Repair and Sealing	tonCool	Existing	8.95	18	\$0.57	15%	50%	\$10.00	60.17	63.79	Building Energy Simulation Tool
School	Heating	HVAC - Duct Repair and Sealing	tonCool	Existing	-10.66	18	\$0.57	15%	50%	\$10.00	-21.13	-19.86	Building Energy Simulation Tool
School	Ventilation	HVAC - Duct Repair and Sealing	tonCool	Existing	-1.17	18	\$0.57	15%	50%	\$10.00	-11.50	-12.54	Building Energy Simulation Tool
School	Cooling	Windows - High Efficiency Glazing	sqft window	Existing	4.21	30	\$35.93	48%	48%	\$0.06	0.00	0.00	7th Power Plan
School	Heating	Windows - High Efficiency Glazing	sqft window	Existing	41.25	30	\$35.93	48%	48%	\$0.06	0.00	0.00	7th Power Plan
School	Ventilation	Windows - High Efficiency Glazing	sqft window	Existing	2.50	30	\$35.93	48%	48%	\$0.06	0.00	0.00	7th Power Plan
School	Cooling	Chiller - Chilled Water Reset	ChillCtrl	Existing	7,731.28	10	\$884.85	15%	75%	\$0.01	184.60	166.07	AEG-BEST
School	Cooling	Chiller - Chilled Water Variable-Flow System	HP cool	Existing	213.79	15	\$332.55	15%	75%	\$0.15	701.09	651.09	AEG-BEST
School	Cooling	Chiller - Variable Speed Fans	HP fan	Existing	503.82	15	\$208.36	15%	75%	\$0.04	166.64	151.62	New Jersey TRM
School	Cooling	Water-Cooled Chiller - Condenser Water Reset	ChillCtrl	Existing	0.00	10	\$884.85	15%	75%	\$0.00	0.00	0.00	AEG-BEST
School	Cooling	HVAC - Economizer	HP cool	Existing	43.28	10	\$168.42	18%	75%	\$0.44	394.25	389.20	AEG-BEST
School	Heating	Space Heating - Heat Recovery Ventilator	CFM	Existing	1.31	14	\$5.08	3%	75%	\$0.43	705.22	604.86	7th Power Plan
School	Ventilation	Ventilation - ECM on VAV Boxes	sqft	Existing	0.16	18	\$0.25	15%	20%	\$0.12	58.41	61.03	7th Power Plan
School	Ventilation	Ventilation - Variable Speed Control	sqft	Existing	0.01	15	\$181.39	13%	50%	\$1,051.63	40.31	45.12	AEG-BEST
School	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.01	15	\$0.25	15%	75%	\$2.57	37.65	41.50	7th Power Plan
School	Cooling	Destratification Fans (HVLS)	Strat Fan	Existing	1,912.84	15	\$7,270.90	15%	15%	\$0.04	0.00	0.00	AEG Research
School	Heating	Destratification Fans (HVLS)	Strat Fan	Existing	17,361.00	15	\$7,270.90	15%	15%	\$0.04	0.00	0.00	AEG Research
School	Cooling	RTU - Maintenance	tonCool	Existing	25.25	3	\$35.00	15%	45%	\$0.37	86.37	92.37	AEG Research
School	Cooling	RTU - Advanced Controls	sqft	Existing	0.12	15	\$0.07	15%	45%	\$0.06	99.72	93.76	7th Power Plan

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School	Cooling	RTU - Evaporative Precooler	tonCool	Existing	51.61	15	\$681.62	15%	75%	\$1.15	317.52	316.74	AEG Research
School	Cooling	Ductless Mini Split Heat Pump	tonCool	Existing	118.45	15	\$3,359.26	15%	25%	\$0.74	8.25	8.88	7th Power Plan
School	Heating	Ductless Mini Split Heat Pump	tonCool	Existing	323.38	15	\$3,359.26	15%	25%	\$0.74	115.62	102.76	7th Power Plan
School	Cooling	Thermostat - WiFi/Interactive	sqft	Existing	0.20	5	\$0.66	30%	40%	\$0.10	99.15	99.64	7th Power Plan
School	Heating	Thermostat - WiFi/Interactive	sqft	Existing	0.98	5	\$0.66	30%	40%	\$0.10	140.83	129.39	7th Power Plan
School	Ventilation	Thermostat - WiFi/Interactive	sqft	Existing	0.11	5	\$0.66	30%	40%	\$0.10	76.30	81.48	7th Power Plan
School	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	Existing	75.02	10	\$8.35	25%	65%	\$0.01	12.09	18.05	Illinois TRM
School	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	Existing	77.71	10	\$11.64	25%	65%	\$0.01	6.24	9.39	7th Power Plan
School	Water Heating	Water Heater - High Efficiency Circulation Pump	WHUnits	Existing	66.35	15	\$36.75	15%	25%	\$0.03	1.80	2.40	Hawaii TRM
School	Water Heating	Water Heater - Pipe Insulation	PipeFeet	Existing	238.83	15	\$14.88	16%	75%	\$0.00	23.91	33.76	AEG-BEST
School	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	Existing	51.47	4	\$144.04	25%	65%	\$0.41	8.09	12.20	7th Power Plan
School	Water Heating	Water Heater - Thermostat Setback	WHUnits	Existing	66.40	2	\$5.00	15%	75%	\$0.02	11.76	17.59	Illinois TRM
School	Water Heating	Water Heater - Solar System	PipeFeet	Existing	827.32	20	\$215.28	1%	30%	\$0.01	40.26	57.77	AEG-BEST
School	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.28	15	\$0.35	3%	23%	\$0.10	477.33	546.86	7th Power Plan
School	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.39	15	\$0.58	3%	23%	\$0.11	643.02	752.55	7th Power Plan
School	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	Existing	240.37	15	\$54.41	1%	3%	\$0.02	13.39	16.87	7th Power Plan
School	Interior Lighting	Interior Lighting - Timeclocks and Timers	occ sens	Existing	0.00	8	\$111.67	7%	15%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
School	Interior Lighting	Interior Lighting - Skylights	1000 sqft	Existing	0.00	15	\$1,006.35	15%	30%	\$0.00	0.00	0.00	AEG Research
School	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	1000 sqft	Existing	199.76	16	\$1,807.69	5%	15%	\$0.65	130.46	175.57	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
School	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	Existing	1,909.65	11	\$30.80	15%	50%	\$0.00	462.98	564.84	Illinois TRM
School	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	ELtg Watts	Existing	0.38	8	\$0.63	15%	25%	\$0.19	179.64	238.07	7th Power Plan
School	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	Existing	36.42	8	\$55.10	15%	25%	\$0.17	98.02	127.94	Pacific Gas and Electric Research
School	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	Existing	42.08	7	\$3,400.00	15%	30%	\$9.45	165.28	229.51	AEG Research
School	Refrigeration	Refrigeration - Anti-Sweat Heater	Fridge Feet	Existing	12.46	8	\$48.18	0%	25%	\$0.59	8.77	10.61	7th Power Plan
School	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	Existing	31.14	4	\$10.44	0%	25%	\$0.09	18.64	20.76	Michigan Energy Measures Database
School	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	Existing	304.99	16	\$165.20	0%	25%	\$0.06	27.64	29.31	7th Power Plan
School	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	Existing	27.87	15	\$335.85	0%	0%	\$1.26	0.00	0.00	7th Power Plan
School	Refrigeration	Refrigeration - Strip Curtain	Walkin Door	Existing	18.43	2	\$10.41	0%	25%	\$0.26	5.80	6.07	7th Power Plan
School	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	Existing	0.43	15	\$45.43	0%	13%	\$10.45	49.31	49.67	Annual Energy Outlook, 2015
School	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	Existing	9.35	15	\$313.82	0%	13%	\$3.48	91.46	88.43	Annual Energy Outlook, 2015
School	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	Existing	198.52	10	\$506.05	0%	25%	\$0.34	17.84	19.36	Vermont TRM
School	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	Existing	9.07	6	\$45.41	0%	0%	\$0.93	0.00	0.00	7th Power Plan
School	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	Existing	0.73	8	\$3.72	0%	0%	\$0.77	0.00	0.00	7th Power Plan
School	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	Existing	126.90	5	\$45.85	0%	0%	\$0.08	0.00	0.00	Illinois TRM
School	Refrigeration	Grocery - ECMs for Display Cases	Fridge Case	Existing	37.98	16	\$165.20	0%	25%	\$0.44	9.32	8.91	7th Power Plan
School	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	Existing	1,446.27	5	\$187.94	25%	75%	\$0.03	76.61	65.97	Illinois TRM
School	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	Existing	1,356.83	18	\$8,526.67	25%	50%	\$0.50	97.92	103.64	7th Power Plan
School	Office Equipment	Office Equipment - Smart Power Strips	Smart Strip	Existing	23.49	4	\$41.63	10%	50%	\$0.42	163.55	127.66	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
School	Cooling	Lodging - Guest Room Controls	LodgUnit	Existing	110.79	15	\$260.00	0%	0%	\$10.00	0.00	0.00	AEG-BEST
School	Heating	Lodging - Guest Room Controls	LodgUnit	Existing	-183.27	15	\$260.00	0%	0%	\$10.00	0.00	0.00	AEG-BEST
School	Office Equipment	Data Center - Best Practice Measures	sqft	Existing	0.02	5	\$0.00	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
School	Cooling	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
School	Ventilation	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
School	Interior Lighting	Data Center - Commercially Available Measures	sqft	Existing	0.02	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
School	Office Equipment	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
School	Cooling	Data Center - Cutting Edge Measures	sqft	Existing	0.02	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
School	Office Equipment	Data Center - Cutting Edge Measures	sqft	Existing	0.00	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
School	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	Existing	1,367.34	18	\$4,092.80	0%	0%	\$0.24	0.00	0.00	7th Power Plan
School	Miscellaneous	Pool Pump - Timer	perBldg	Existing	571.50	10	\$85.22	15%	75%	\$0.02	5.08	4.47	Ontario Power TRM
School	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	Existing	2,629.56	6	\$35.93	1%	3%	\$0.00	29.09	25.64	7th Power Plan
School	Cooling	Advanced New Construction Designs	sqft	Existing	0.35	25	\$4.11	0%	0%	\$0.09	0.00	0.00	AEG Research
School	Heating	Advanced New Construction Designs	sqft	Existing	2.10	25	\$4.11	0%	0%	\$0.09	0.00	0.00	AEG Research
School	Ventilation	Advanced New Construction Designs	sqft	Existing	0.22	25	\$4.11	0%	0%	\$0.09	0.00	0.00	AEG Research
School	Water Heating	Advanced New Construction Designs	sqft	Existing	0.25	25	\$4.11	0%	0%	\$0.09	0.00	0.00	AEG Research
School	Interior Lighting	Advanced New Construction Designs	sqft	Existing	0.53	25	\$4.11	0%	0%	\$0.09	0.00	0.00	AEG Research
School	Exterior Lighting	Advanced New Construction Designs	sqft	Existing	0.17	25	\$4.11	0%	0%	\$0.09	0.00	0.00	AEG Research
School	Cooling	Strategic Energy Management	sqft	Existing	0.06	3	\$0.12	2%	22%	\$0.05	68.64	73.75	AEG Research

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
School	Heating	Strategic Energy Management	sqft	Existing	0.33	3	\$0.12	2%	22%	\$0.05	102.00	92.23	AEG Research
School	Ventilation	Strategic Energy Management	sqft	Existing	0.04	3	\$0.12	2%	22%	\$0.05	55.86	61.24	AEG Research
School	Water Heating	Strategic Energy Management	sqft	Existing	0.04	3	\$0.12	2%	22%	\$0.05	7.49	11.37	AEG Research
School	Interior Lighting	Strategic Energy Management	sqft	Existing	0.08	3	\$0.12	2%	22%	\$0.05	109.26	148.55	AEG Research
School	Exterior Lighting	Strategic Energy Management	sqft	Existing	0.03	3	\$0.12	2%	22%	\$0.05	33.72	46.00	AEG Research
School	Refrigeration	Strategic Energy Management	sqft	Existing	0.02	3	\$0.12	2%	22%	\$0.05	30.75	29.57	AEG Research
School	Office Equipment	Strategic Energy Management	sqft	Existing	0.03	3	\$0.12	2%	22%	\$0.05	53.58	42.51	AEG Research
School	Cooling	Commissioning	sqft	Existing	0.09	3	\$0.39	0%	0%	\$0.14	0.00	0.00	AEG Research
School	Heating	Commissioning	sqft	Existing	0.44	3	\$0.39	0%	0%	\$0.14	0.00	0.00	AEG Research
School	Ventilation	Commissioning	sqft	Existing	0.05	3	\$0.39	0%	0%	\$0.14	0.00	0.00	AEG Research
School	Water Heating	Commissioning	sqft	Existing	0.02	3	\$0.39	0%	0%	\$0.14	0.00	0.00	AEG Research
School	Interior Lighting	Commissioning	sqft	Existing	0.09	3	\$0.39	0%	0%	\$0.14	0.00	0.00	AEG Research
School	Exterior Lighting	Commissioning	sqft	Existing	0.03	3	\$0.39	0%	0%	\$0.14	0.00	0.00	AEG Research
School	Refrigeration	Commissioning	sqft	Existing	0.04	3	\$0.39	0%	0%	\$0.14	0.00	0.00	AEG Research
School	Cooling	Retrocommissioning	sqft	Existing	0.09	3	\$0.25	10%	47%	\$0.09	174.14	188.13	AEG Research
School	Heating	Retrocommissioning	sqft	Existing	0.45	3	\$0.25	10%	47%	\$0.09	258.78	235.27	AEG Research
School	Ventilation	Retrocommissioning	sqft	Existing	0.05	3	\$0.25	10%	47%	\$0.09	140.79	155.79	AEG Research
School	Water Heating	Retrocommissioning	sqft	Existing	0.02	3	\$0.25	10%	47%	\$0.09	6.33	9.67	AEG Research
School	Interior Lighting	Retrocommissioning	sqft	Existing	0.10	3	\$0.25	10%	47%	\$0.09	230.98	315.82	AEG Research
School	Exterior Lighting	Retrocommissioning	sqft	Existing	0.03	3	\$0.25	10%	47%	\$0.09	71.28	97.80	AEG Research
School	Refrigeration	Retrocommissioning	sqft	Existing	0.05	3	\$0.25	10%	47%	\$0.09	126.27	124.16	AEG Research
School	Interior Lighting	Fruit Storage - Lighting Controls	sqft	Existing	0.07	10	\$0.09	0%	0%	\$0.12	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx

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School	Refrigeration	Fruit Storage Refrigeration Retrofit	sqft	Existing	0.15	10	\$1.09	0%	0%	\$0.97	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
School	Refrigeration	Fruit Storage Refrigeration Tuneup	sqft	Existing	0.04	3	\$0.23	0%	0%	\$1.98	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
School	Refrigeration	Fruit Storage Retrofit - CO2 Scrub	sqft	Existing	0.07	10	\$3.13	0%	0%	\$5.74	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
School	Refrigeration	Fruit Storage Retrofit - Membrane	sqft	Existing	0.01	10	\$0.68	0%	0%	\$6.23	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
School	Cooling	Insulation - Ceiling	sqft roof	New	0.00	45	\$1.28	15%	50%	\$0.80	0.00	0.00	Building Energy Simulation Tool
School	Heating	Insulation - Ceiling	sqft roof	New	0.11	45	\$1.28	15%	50%	\$0.80	14.63	13.57	Building Energy Simulation Tool
School	Ventilation	Insulation - Ceiling	sqft roof	New	0.01	45	\$1.28	15%	50%	\$0.80	7.16	7.27	Building Energy Simulation Tool
School	Cooling	Insulation - Ducting	sqft duct	New	0.15	20	\$0.84	15%	50%	\$0.00	38.79	36.58	Building Energy Simulation Tool
School	Heating	Insulation - Ducting	sqft duct	New	0.00	20	\$0.84	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
School	Ventilation	Insulation - Ducting	sqft duct	New	0.00	20	\$0.84	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
School	Cooling	Building Shell - Cool Roofs	sqft roof	New	0.05	20	\$0.78	45%	50%	\$8.84	3.85	3.63	Building Energy Simulation Tool
School	Heating	Building Shell - Cool Roofs	sqft roof	New	-0.05	20	\$0.78	45%	50%	\$8.84	-0.92	-0.84	Building Energy Simulation Tool
School	Ventilation	Building Shell - Cool Roofs	sqft roof	New	0.00	20	\$0.78	45%	50%	\$8.84	-0.45	-0.46	Building Energy Simulation Tool
School	Cooling	Insulation - Wall Cavity	sqft wall	New	-0.01	45	\$0.78	15%	50%	\$0.99	-1.83	-1.73	Building Energy Simulation Tool
School	Heating	Insulation - Wall Cavity	sqft wall	New	0.07	45	\$0.78	15%	50%	\$0.99	2.81	2.59	Building Energy Simulation Tool
School	Ventilation	Insulation - Wall Cavity	sqft wall	New	0.00	45	\$0.78	15%	50%	\$0.99	1.39	1.40	Building Energy Simulation Tool
School	Cooling	HVAC - Duct Repair and Sealing	tonCool	New	6.56	18	\$0.57	15%	35%	\$10.00	7.49	7.11	Building Energy Simulation Tool
School	Heating	HVAC - Duct Repair and Sealing	tonCool	New	-12.29	18	\$0.57	15%	35%	\$10.00	-3.68	-3.39	Building Energy Simulation Tool
School	Ventilation	HVAC - Duct Repair and Sealing	tonCool	New	-0.92	18	\$0.57	15%	35%	\$10.00	-1.83	-1.85	Building Energy Simulation Tool

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
School	Cooling	Windows - High Efficiency Glazing	sqft window	New	2.94	30	\$35.93	66%	66%	\$0.07	0.00	0.00	7th Power Plan
School	Heating	Windows - High Efficiency Glazing	sqft window	New	38.62	30	\$35.93	66%	66%	\$0.07	0.00	0.00	7th Power Plan
School	Ventilation	Windows - High Efficiency Glazing	sqft window	New	1.65	30	\$35.93	66%	66%	\$0.07	0.00	0.00	7th Power Plan
School	Cooling	Chiller - Chilled Water Reset	ChillCtrl	New	5,740.15	10	\$884.85	15%	75%	\$0.02	14.73	13.00	AEG-BEST
School	Cooling	Chiller - Chilled Water Variable-Flow System	HP cool	New	161.91	15	\$332.55	15%	75%	\$0.18	73.92	66.18	AEG-BEST
School	Cooling	Chiller - Variable Speed Fans	HP fan	New	375.36	15	\$208.36	15%	75%	\$0.05	17.11	15.33	New Jersey TRM
School	Cooling	Water-Cooled Chiller - Condenser Water Reset	ChillCtrl	New	0.00	10	\$884.85	15%	75%	\$0.00	0.00	0.00	AEG-BEST
School	Cooling	HVAC - Economizer	HP cool	New	31.23	10	\$168.42	18%	75%	\$0.57	32.81	29.72	AEG-BEST
School	Heating	Space Heating - Heat Recovery Ventilator	CFM	New	1.22	14	\$5.08	6%	75%	\$0.46	80.88	70.23	7th Power Plan
School	Ventilation	Ventilation - ECM on VAV Boxes	sqft	New	0.10	18	\$0.25	15%	20%	\$0.12	13.00	13.08	7th Power Plan
School	Ventilation	Ventilation - Variable Speed Control	sqft	New	0.01	15	\$181.39	19%	50%	\$1,047.57	4.11	4.19	AEG-BEST
School	Ventilation	Ventilation - Demand Controlled	sqft	New	0.01	15	\$0.25	15%	75%	\$2.56	4.49	4.59	7th Power Plan
School	Cooling	Destratification Fans (HVLS)	Strat Fan	New	1,335.90	15	\$7,270.90	15%	15%	\$0.04	0.00	0.00	AEG Research
School	Heating	Destratification Fans (HVLS)	Strat Fan	New	16,252.88	15	\$7,270.90	15%	15%	\$0.04	0.00	0.00	AEG Research
School	Cooling	RTU - Maintenance	tonCool	New	30.25	3	\$35.00	15%	45%	\$0.29	2.54	2.38	AEG Research
School	Cooling	RTU - Advanced Controls	sqft	New	0.14	15	\$0.07	15%	45%	\$0.04	30.03	27.55	7th Power Plan
School	Cooling	RTU - Evaporative Precooler	tonCool	New	62.12	15	\$681.62	15%	75%	\$0.91	129.78	121.17	AEG Research
School	Cooling	Ductless Mini Split Heat Pump	tonCool	New	137.74	15	\$3,359.26	15%	25%	\$0.69	1.80	1.67	7th Power Plan
School	Heating	Ductless Mini Split Heat Pump	tonCool	New	328.18	15	\$3,359.26	15%	25%	\$0.69	19.28	16.87	7th Power Plan
School	Cooling	Thermostat - WiFi/Interactive	sqft	New	0.14	5	\$0.66	30%	40%	\$0.11	2.58	2.40	7th Power Plan
School	Heating	Thermostat - WiFi/Interactive	sqft	New	0.94	5	\$0.66	30%	40%	\$0.11	4.47	3.77	7th Power Plan

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School	Ventilation	Thermostat - WiFi/Interactive	sqft	New	0.07	5	\$0.66	30%	40%	\$0.11	2.22	2.27	7th Power Plan
School	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	New	49.82	10	\$8.35	25%	65%	\$0.01	0.96	1.13	Illinois TRM
School	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	New	52.00	10	\$11.64	25%	65%	\$0.01	0.50	0.59	7th Power Plan
School	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	New	44.57	15	\$36.75	15%	25%	\$0.03	0.40	0.42	Hawaii TRM
School	Water Heating	Water Heater - Pipe Insulation	PipeFeet	New	154.19	15	\$14.88	1%	75%	\$0.00	3.65	4.14	AEG-BEST
School	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	New	34.37	4	\$144.04	25%	65%	\$0.41	0.31	0.38	7th Power Plan
School	Water Heating	Water Heater - Thermostat Setback	WHunits	New	44.62	2	\$5.00	15%	75%	\$0.02	0.13	0.16	Illinois TRM
School	Water Heating	Water Heater - Solar System	PipeFeet	New	538.94	20	\$215.28	1%	30%	\$0.01	5.16	5.83	AEG-BEST
School	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.23	15	\$0.35	11%	23%	\$0.10	123.28	125.71	7th Power Plan
School	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.32	15	\$0.58	11%	23%	\$0.11	169.42	173.26	7th Power Plan
School	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	New	197.02	15	\$54.41	1%	3%	\$0.02	1.35	1.40	7th Power Plan
School	Interior Lighting	Interior Lighting - Timeclocks and Timers	occ sens	New	0.00	8	\$111.67	7%	15%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
School	Interior Lighting	Interior Lighting - Skylights	1000 sqft	New	0.00	15	\$1,006.35	18%	33%	\$0.00	0.00	0.00	AEG Research
School	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	1000 sqft	New	150.04	16	\$1,807.69	5%	15%	\$0.70	16.07	16.98	7th Power Plan
School	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	New	1,431.66	11	\$30.80	15%	50%	\$0.00	43.92	45.60	Illinois TRM
School	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	ELtg Watts	New	0.29	8	\$0.63	15%	25%	\$0.19	14.30	15.59	7th Power Plan
School	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fxt	New	27.51	8	\$55.10	15%	25%	\$0.18	7.63	8.34	Pacific Gas and Electric Research
School	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fxt	New	33.57	7	\$3,400.00	15%	30%	\$9.57	12.36	13.43	AEG Research
School	Refrigeration	Refrigeration - Anti-Sweat Heater	Fridge Feet	New	8.72	8	\$48.18	0%	25%	\$0.87	0.85	0.70	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
School	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	New	24.24	4	\$10.44	0%	25%	\$0.11	0.85	0.69	Michigan Energy Measures Database
School	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	New	244.12	16	\$165.20	0%	25%	\$0.07	4.44	3.80	7th Power Plan
School	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	New	25.82	15	\$335.85	0%	0%	\$1.40	0.00	0.00	7th Power Plan
School	Refrigeration	Refrigeration - Strip Curtain	Walkin Door	New	16.20	2	\$10.41	0%	25%	\$0.31	0.08	0.06	7th Power Plan
School	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	New	0.41	15	\$45.43	0%	13%	\$11.61	9.00	7.61	Annual Energy Outlook, 2015
School	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	New	8.73	15	\$313.82	0%	13%	\$3.87	15.68	13.31	Annual Energy Outlook, 2015
School	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	New	162.45	10	\$506.05	0%	25%	\$0.42	2.26	1.88	Vermont TRM
School	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	New	8.38	6	\$45.41	0%	0%	\$1.04	0.00	0.00	7th Power Plan
School	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	New	0.68	8	\$3.72	0%	0%	\$0.86	0.00	0.00	7th Power Plan
School	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	New	119.97	5	\$45.85	0%	0%	\$0.08	0.00	0.00	Illinois TRM
School	Refrigeration	Grocery - ECMs for Display Cases	Fridge Case	New	34.87	16	\$165.20	0%	25%	\$0.50	1.61	1.37	7th Power Plan
School	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	New	1,440.38	5	\$187.94	25%	75%	\$0.03	5.14	4.19	Illinois TRM
School	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	New	873.69	18	\$8,526.67	25%	50%	\$0.50	21.73	22.03	7th Power Plan
School	Office Equipment	Office Equipment - Smart Power Strips	Smart Strip	New	27.63	4	\$41.63	10%	50%	\$0.35	6.94	5.07	7th Power Plan
School	Cooling	Lodging - Guest Room Controls	LodgUnit	New	132.44	15	\$260.00	0%	0%	\$10.00	0.00	0.00	AEG-BEST
School	Heating	Lodging - Guest Room Controls	LodgUnit	New	-191.19	15	\$260.00	0%	0%	\$10.00	0.00	0.00	AEG-BEST
School	Office Equipment	Data Center - Best Practice Measures	sqft	New	0.01	5	\$0.00	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
School	Cooling	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
School	Ventilation	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx

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School	Interior Lighting	Data Center - Commercially Available Measures	sqft	New	0.02	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
School	Office Equipment	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
School	Cooling	Data Center - Cutting Edge Measures	sqft	New	0.01	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
School	Office Equipment	Data Center - Cutting Edge Measures	sqft	New	0.00	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
School	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	New	893.30	18	\$4,092.80	0%	0%	\$0.24	0.00	0.00	7th Power Plan
School	Miscellaneous	Pool Pump - Timer	perBldg	New	571.81	10	\$85.22	15%	75%	\$0.02	0.66	0.58	Ontario Power TRM
School	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	New	2,626.48	6	\$35.93	1%	3%	\$0.00	1.23	1.03	7th Power Plan
School	Cooling	Advanced New Construction Designs	sqft	New	0.33	25	\$4.11	10%	25%	\$0.09	84.96	79.02	AEG Research
School	Heating	Advanced New Construction Designs	sqft	New	2.14	25	\$4.11	10%	25%	\$0.09	141.61	129.74	AEG Research
School	Ventilation	Advanced New Construction Designs	sqft	New	0.16	25	\$4.11	10%	25%	\$0.09	69.74	70.41	AEG Research
School	Water Heating	Advanced New Construction Designs	sqft	New	0.17	25	\$4.11	10%	25%	\$0.09	10.12	10.58	AEG Research
School	Interior Lighting	Advanced New Construction Designs	sqft	New	0.45	25	\$4.11	10%	25%	\$0.09	145.14	146.70	AEG Research
School	Exterior Lighting	Advanced New Construction Designs	sqft	New	0.14	25	\$4.11	10%	25%	\$0.09	44.81	45.97	AEG Research
School	Cooling	Strategic Energy Management	sqft	New	0.05	3	\$0.10	2%	22%	\$0.05	1.43	1.33	AEG Research
School	Heating	Strategic Energy Management	sqft	New	0.32	3	\$0.10	2%	22%	\$0.05	2.48	2.05	AEG Research
School	Ventilation	Strategic Energy Management	sqft	New	0.02	3	\$0.10	2%	22%	\$0.05	1.23	1.26	AEG Research
School	Water Heating	Strategic Energy Management	sqft	New	0.03	3	\$0.10	2%	22%	\$0.05	0.18	0.23	AEG Research
School	Interior Lighting	Strategic Energy Management	sqft	New	0.07	3	\$0.10	2%	22%	\$0.05	2.58	2.94	AEG Research
School	Exterior Lighting	Strategic Energy Management	sqft	New	0.02	3	\$0.10	2%	22%	\$0.05	0.79	0.89	AEG Research

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School	Refrigeration	Strategic Energy Management	sqft	New	0.03	3	\$0.10	2%	22%	\$0.05	0.96	0.77	AEG Research
School	Office Equipment	Strategic Energy Management	sqft	New	0.04	3	\$0.10	2%	22%	\$0.05	1.46	1.06	AEG Research
School	Cooling	Commissioning	sqft	New	0.07	3	\$0.33	10%	47%	\$0.13	3.66	3.41	AEG Research
School	Heating	Commissioning	sqft	New	0.44	3	\$0.33	10%	47%	\$0.13	6.35	5.26	AEG Research
School	Ventilation	Commissioning	sqft	New	0.03	3	\$0.33	10%	47%	\$0.13	3.15	3.21	AEG Research
School	Water Heating	Commissioning	sqft	New	0.01	3	\$0.33	10%	47%	\$0.13	0.15	0.19	AEG Research
School	Interior Lighting	Commissioning	sqft	New	0.08	3	\$0.33	10%	47%	\$0.13	5.51	6.26	AEG Research
School	Exterior Lighting	Commissioning	sqft	New	0.02	3	\$0.33	10%	47%	\$0.13	1.69	1.89	AEG Research
School	Refrigeration	Commissioning	sqft	New	0.06	3	\$0.33	10%	47%	\$0.13	4.06	3.25	AEG Research
School	Cooling	Retrocommissioning	sqft	New	0.07	3	\$0.21	0%	0%	\$0.08	0.00	0.00	AEG Research
School	Heating	Retrocommissioning	sqft	New	0.44	3	\$0.21	0%	0%	\$0.08	0.00	0.00	AEG Research
School	Ventilation	Retrocommissioning	sqft	New	0.03	3	\$0.21	0%	0%	\$0.08	0.00	0.00	AEG Research
School	Water Heating	Retrocommissioning	sqft	New	0.01	3	\$0.21	0%	0%	\$0.08	0.00	0.00	AEG Research
School	Interior Lighting	Retrocommissioning	sqft	New	0.08	3	\$0.21	0%	0%	\$0.08	0.00	0.00	AEG Research
School	Exterior Lighting	Retrocommissioning	sqft	New	0.02	3	\$0.21	0%	0%	\$0.08	0.00	0.00	AEG Research
School	Refrigeration	Retrocommissioning	sqft	New	0.06	3	\$0.21	0%	0%	\$0.08	0.00	0.00	AEG Research
School	Interior Lighting	Fruit Storage - Lighting Controls	sqft	New	0.06	10	\$0.09	0%	0%	\$0.12	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
School	Refrigeration	Fruit Storage Refrigeration Retrofit	sqft	New	0.19	10	\$1.09	0%	0%	\$0.77	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
School	Refrigeration	Fruit Storage Refrigeration Tuneup	sqft	New	0.05	3	\$0.23	0%	0%	\$1.58	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
School	Refrigeration	Fruit Storage Retrofit - CO2 Scrub	sqft	New	0.09	10	\$3.13	0%	0%	\$4.56	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
School	Refrigeration	Fruit Storage Retrofit - Membrane	sqft	New	0.02	10	\$0.68	0%	0%	\$4.95	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Lodging	Cooling	Insulation - Ceiling	sqft roof	Existing	0.00	45	\$1.28	15%	35%	\$0.20	0.00	0.00	Building Energy Simulation Tool

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Lodging	Heating	Insulation - Ceiling	sqft roof	Existing	0.36	45	\$1.28	15%	35%	\$0.20	186.82	163.57	Building Energy Simulation Tool
Lodging	Ventilation	Insulation - Ceiling	sqft roof	Existing	0.14	45	\$1.28	15%	35%	\$0.20	162.59	155.90	Building Energy Simulation Tool
Lodging	Cooling	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.84	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Lodging	Heating	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.84	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Lodging	Ventilation	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.84	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Lodging	Cooling	Building Shell - Cool Roofs	sqft roof	Existing	0.13	20	\$0.78	45%	50%	\$10.00	30.86	34.42	Building Energy Simulation Tool
Lodging	Heating	Building Shell - Cool Roofs	sqft roof	Existing	-0.20	20	\$0.78	45%	50%	\$10.00	-24.94	-23.69	Building Energy Simulation Tool
Lodging	Ventilation	Building Shell - Cool Roofs	sqft roof	Existing	-0.09	20	\$0.78	45%	50%	\$10.00	-24.93	-24.76	Building Energy Simulation Tool
Lodging	Cooling	Insulation - Wall Cavity	sqft wall	Existing	0.00	45	\$0.78	15%	35%	\$0.27	-1.45	-1.40	Building Energy Simulation Tool
Lodging	Heating	Insulation - Wall Cavity	sqft wall	Existing	0.17	45	\$0.78	15%	35%	\$0.27	34.15	29.86	Building Energy Simulation Tool
Lodging	Ventilation	Insulation - Wall Cavity	sqft wall	Existing	0.06	45	\$0.78	15%	35%	\$0.27	29.92	28.55	Building Energy Simulation Tool
Lodging	Cooling	HVAC - Duct Repair and Sealing	tonCool	Existing	0.00	18	\$0.57	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Lodging	Heating	HVAC - Duct Repair and Sealing	tonCool	Existing	0.00	18	\$0.57	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Lodging	Ventilation	HVAC - Duct Repair and Sealing	tonCool	Existing	0.00	18	\$0.57	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Lodging	Cooling	Windows - High Efficiency Glazing	sqft window	Existing	2.01	30	\$35.93	48%	48%	\$0.18	0.00	0.00	7th Power Plan
Lodging	Heating	Windows - High Efficiency Glazing	sqft window	Existing	11.83	30	\$35.93	48%	48%	\$0.18	0.00	0.00	7th Power Plan
Lodging	Ventilation	Windows - High Efficiency Glazing	sqft window	Existing	2.63	30	\$35.93	48%	48%	\$0.18	0.00	0.00	7th Power Plan
Lodging	Cooling	Chiller - Chilled Water Reset	ChillCtrl	Existing	3,428.19	10	\$884.85	15%	75%	\$0.03	22.89	22.14	AEG-BEST
Lodging	Cooling	Chiller - Chilled Water Variable-Flow System	HP cool	Existing	71.64	15	\$332.55	15%	75%	\$0.43	66.27	64.81	AEG-BEST

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Lodging	Cooling	Chiller - Variable Speed Fans	HP fan	Existing	178.58	15	\$208.36	15%	75%	\$0.11	16.58	16.06	New Jersey TRM
Lodging	Cooling	Water-Cooled Chiller - Condenser Water Reset	ChillCtrl	Existing	11,969.17	10	\$884.85	15%	75%	\$0.01	62.64	60.43	AEG-BEST
Lodging	Cooling	HVAC - Economizer	HP cool	Existing	45.16	10	\$168.42	18%	75%	\$0.43	122.51	121.94	AEG-BEST
Lodging	Heating	Space Heating - Heat Recovery Ventilator	CFM	Existing	1.77	14	\$5.08	3%	75%	\$0.32	703.43	593.39	7th Power Plan
Lodging	Ventilation	Ventilation - ECM on VAV Boxes	sqft	Existing	0.25	18	\$0.25	15%	20%	\$0.09	74.76	71.44	7th Power Plan
Lodging	Ventilation	Ventilation - Variable Speed Control	sqft	Existing	0.06	15	\$181.39	13%	50%	\$277.69	140.41	138.63	AEG-BEST
Lodging	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.01	15	\$0.25	15%	75%	\$1.87	48.40	46.72	7th Power Plan
Lodging	Cooling	Destratification Fans (HVLS)	Strat Fan	Existing	1,836.90	15	\$7,270.90	15%	30%	\$0.07	128.59	125.65	AEG Research
Lodging	Heating	Destratification Fans (HVLS)	Strat Fan	Existing	10,151.36	15	\$7,270.90	15%	30%	\$0.07	361.84	300.36	AEG Research
Lodging	Cooling	RTU - Maintenance	tonCool	Existing	60.21	3	\$35.00	15%	45%	\$0.16	63.32	63.01	AEG Research
Lodging	Cooling	RTU - Advanced Controls	sqft	Existing	0.18	15	\$0.07	15%	45%	\$0.04	64.69	61.26	7th Power Plan
Lodging	Cooling	RTU - Evaporative Precooler	tonCool	Existing	123.64	15	\$681.62	15%	75%	\$0.51	237.48	228.06	AEG Research
Lodging	Cooling	Ductless Mini Split Heat Pump	tonCool	Existing	274.62	15	\$3,359.26	15%	75%	\$0.69	1,329.08	1,374.48	7th Power Plan
Lodging	Heating	Ductless Mini Split Heat Pump	tonCool	Existing	184.42	15	\$3,359.26	15%	75%	\$0.69	702.97	623.26	7th Power Plan
Lodging	Cooling	Thermostat - WiFi/Interactive	sqft	Existing	0.20	5	\$0.66	30%	40%	\$0.13	99.64	100.43	7th Power Plan
Lodging	Heating	Thermostat - WiFi/Interactive	sqft	Existing	0.56	5	\$0.66	30%	40%	\$0.13	142.65	129.51	7th Power Plan
Lodging	Ventilation	Thermostat - WiFi/Interactive	sqft	Existing	0.23	5	\$0.66	30%	40%	\$0.13	134.22	130.50	7th Power Plan
Lodging	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	Existing	417.47	10	\$8.35	25%	65%	\$0.00	38.43	55.65	Illinois TRM
Lodging	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	Existing	433.80	10	\$11.64	25%	65%	\$0.00	19.92	29.02	7th Power Plan
Lodging	Water Heating	Water Heater - High Efficiency Circulation Pump	WHUnits	Existing	68.60	15	\$36.75	15%	25%	\$0.03	5.85	7.60	Hawaii TRM
Lodging	Water Heating	Water Heater - Pipe Insulation	PipeFeet	Existing	1,309.05	15	\$14.88	16%	75%	\$0.00	74.46	103.67	AEG-BEST

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Lodging	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	Existing	288.70	4	\$144.04	25%	65%	\$0.08	26.08	37.97	7th Power Plan
Lodging	Water Heating	Water Heater - Thermostat Setback	WHUnits	Existing	68.67	2	\$5.00	15%	75%	\$0.02	37.74	54.64	Illinois TRM
Lodging	Water Heating	Water Heater - Solar System	PipeFeet	Existing	4,560.44	20	\$215.28	1%	30%	\$0.00	126.43	177.95	AEG-BEST
Lodging	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.25	15	\$0.35	3%	23%	\$0.11	398.96	405.28	7th Power Plan
Lodging	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.35	15	\$0.58	3%	23%	\$0.13	542.84	559.83	7th Power Plan
Lodging	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	Existing	487.03	15	\$54.41	1%	3%	\$0.01	14.40	16.60	7th Power Plan
Lodging	Interior Lighting	Interior Lighting - Timeclocks and Timers	occ sens	Existing	0.00	8	\$111.67	7%	15%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Lodging	Interior Lighting	Interior Lighting - Skylights	1000 sqft	Existing	0.00	15	\$1,006.35	15%	25%	\$0.00	0.00	0.00	AEG Research
Lodging	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	1000 sqft	Existing	59.57	16	\$1,807.69	5%	15%	\$2.20	34.38	41.87	7th Power Plan
Lodging	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	Existing	552.19	11	\$30.80	15%	50%	\$0.01	115.83	132.57	Illinois TRM
Lodging	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	ELtg Watts	Existing	5.13	8	\$0.63	15%	25%	\$0.01	352.19	456.34	7th Power Plan
Lodging	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	Existing	159.50	8	\$55.10	15%	25%	\$0.04	178.45	237.58	Pacific Gas and Electric Research
Lodging	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	Existing	190.99	7	\$3,400.00	15%	30%	\$1.97	315.82	434.57	AEG Research
Lodging	Refrigeration	Refrigeration - Anti-Sweat Heater	Fridge Feet	Existing	51.88	8	\$48.18	0%	0%	\$0.14	0.00	0.00	7th Power Plan
Lodging	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	Existing	103.96	4	\$10.44	0%	0%	\$0.03	0.00	0.00	Michigan Energy Measures Database
Lodging	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	Existing	827.71	16	\$165.20	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Lodging	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	Existing	129.89	15	\$335.85	0%	0%	\$0.28	0.00	0.00	7th Power Plan
Lodging	Refrigeration	Refrigeration - Strip Curtain	Walkin Door	Existing	76.94	2	\$10.41	0%	0%	\$0.06	0.00	0.00	7th Power Plan
Lodging	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBtuh	Existing	2.12	15	\$45.43	0%	0%	\$2.29	0.00	0.00	Annual Energy Outlook, 2015

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Lodging	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	Existing	44.01	15	\$313.82	0%	0%	\$0.76	0.00	0.00	Annual Energy Outlook, 2015
Lodging	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	Existing	546.75	10	\$506.05	0%	0%	\$0.12	0.00	0.00	Vermont TRM
Lodging	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	Existing	49.92	6	\$45.41	0%	0%	\$0.17	0.00	0.00	7th Power Plan
Lodging	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	Existing	4.02	8	\$3.72	0%	0%	\$0.14	0.00	0.00	7th Power Plan
Lodging	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	Existing	531.43	5	\$45.85	0%	0%	\$0.02	0.00	0.00	Illinois TRM
Lodging	Refrigeration	Grocery - ECMs for Display Cases	Fridge Case	Existing	210.41	16	\$165.20	0%	0%	\$0.08	0.00	0.00	7th Power Plan
Lodging	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	Existing	1,454.51	5	\$187.94	25%	75%	\$0.03	137.53	118.14	Illinois TRM
Lodging	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	Existing	2,102.80	18	\$8,526.67	25%	50%	\$0.36	125.63	121.40	7th Power Plan
Lodging	Office Equipment	Office Equipment - Smart Power Strips	Smart Strip	Existing	12.75	4	\$41.63	10%	50%	\$0.77	73.77	55.90	7th Power Plan
Lodging	Cooling	Lodging - Guest Room Controls	LodgUnit	Existing	210.67	15	\$260.00	15%	75%	\$0.20	782.39	724.36	AEG-BEST
Lodging	Heating	Lodging - Guest Room Controls	LodgUnit	Existing	-80.85	15	\$260.00	15%	75%	\$0.20	-228.60	-192.87	AEG-BEST
Lodging	Office Equipment	Data Center - Best Practice Measures	sqft	Existing	0.01	5	\$0.00	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Lodging	Cooling	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Lodging	Ventilation	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Lodging	Interior Lighting	Data Center - Commercially Available Measures	sqft	Existing	0.03	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Lodging	Office Equipment	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Lodging	Cooling	Data Center - Cutting Edge Measures	sqft	Existing	0.02	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Lodging	Office Equipment	Data Center - Cutting Edge Measures	sqft	Existing	0.00	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Lodging	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	Existing	3,562.76	18	\$4,092.80	0%	0%	\$0.10	0.00	0.00	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Lodging	Miscellaneous	Pool Pump - Timer	perBldg	Existing	468.41	10	\$85.22	15%	75%	\$0.02	25.97	22.95	Ontario Power TRM
Lodging	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	Existing	5,800.47	6	\$35.93	1%	3%	\$0.00	31.64	28.01	7th Power Plan
Lodging	Cooling	Advanced New Construction Designs	sqft	Existing	0.36	25	\$4.11	0%	0%	\$0.06	0.00	0.00	AEG Research
Lodging	Heating	Advanced New Construction Designs	sqft	Existing	1.26	25	\$4.11	0%	0%	\$0.06	0.00	0.00	AEG Research
Lodging	Ventilation	Advanced New Construction Designs	sqft	Existing	0.44	25	\$4.11	0%	0%	\$0.06	0.00	0.00	AEG Research
Lodging	Water Heating	Advanced New Construction Designs	sqft	Existing	1.14	25	\$4.11	0%	0%	\$0.06	0.00	0.00	AEG Research
Lodging	Interior Lighting	Advanced New Construction Designs	sqft	Existing	0.85	25	\$4.11	0%	0%	\$0.06	0.00	0.00	AEG Research
Lodging	Exterior Lighting	Advanced New Construction Designs	sqft	Existing	0.42	25	\$4.11	0%	0%	\$0.06	0.00	0.00	AEG Research
Lodging	Cooling	Strategic Energy Management	sqft	Existing	0.06	3	\$0.18	0%	0%	\$0.06	0.00	0.00	AEG Research
Lodging	Heating	Strategic Energy Management	sqft	Existing	0.18	3	\$0.18	0%	0%	\$0.06	0.00	0.00	AEG Research
Lodging	Ventilation	Strategic Energy Management	sqft	Existing	0.08	3	\$0.18	0%	0%	\$0.06	0.00	0.00	AEG Research
Lodging	Water Heating	Strategic Energy Management	sqft	Existing	0.18	3	\$0.18	0%	0%	\$0.06	0.00	0.00	AEG Research
Lodging	Interior Lighting	Strategic Energy Management	sqft	Existing	0.10	3	\$0.18	0%	0%	\$0.06	0.00	0.00	AEG Research
Lodging	Exterior Lighting	Strategic Energy Management	sqft	Existing	0.06	3	\$0.18	0%	0%	\$0.06	0.00	0.00	AEG Research
Lodging	Refrigeration	Strategic Energy Management	sqft	Existing	0.05	3	\$0.18	0%	0%	\$0.06	0.00	0.00	AEG Research
Lodging	Office Equipment	Strategic Energy Management	sqft	Existing	0.02	3	\$0.18	0%	0%	\$0.06	0.00	0.00	AEG Research
Lodging	Cooling	Commissioning	sqft	Existing	0.08	3	\$0.42	0%	0%	\$0.14	0.00	0.00	AEG Research
Lodging	Heating	Commissioning	sqft	Existing	0.24	3	\$0.42	0%	0%	\$0.14	0.00	0.00	AEG Research
Lodging	Ventilation	Commissioning	sqft	Existing	0.10	3	\$0.42	0%	0%	\$0.14	0.00	0.00	AEG Research
Lodging	Water Heating	Commissioning	sqft	Existing	0.08	3	\$0.42	0%	0%	\$0.14	0.00	0.00	AEG Research
Lodging	Interior Lighting	Commissioning	sqft	Existing	0.12	3	\$0.42	0%	0%	\$0.14	0.00	0.00	AEG Research

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Lodging	Exterior Lighting	Commissioning	sqft	Existing	0.06	3	\$0.42	0%	0%	\$0.14	0.00	0.00	AEG Research
Lodging	Refrigeration	Commissioning	sqft	Existing	0.10	3	\$0.42	0%	0%	\$0.14	0.00	0.00	AEG Research
Lodging	Cooling	Retrocommissioning	sqft	Existing	0.08	3	\$0.26	15%	76%	\$0.09	252.60	298.31	AEG Research
Lodging	Heating	Retrocommissioning	sqft	Existing	0.25	3	\$0.26	15%	76%	\$0.09	408.32	375.36	AEG Research
Lodging	Ventilation	Retrocommissioning	sqft	Existing	0.11	3	\$0.26	15%	76%	\$0.09	408.06	394.84	AEG Research
Lodging	Water Heating	Retrocommissioning	sqft	Existing	0.08	3	\$0.26	15%	76%	\$0.09	46.69	68.27	AEG Research
Lodging	Interior Lighting	Retrocommissioning	sqft	Existing	0.12	3	\$0.26	15%	76%	\$0.09	428.30	516.75	AEG Research
Lodging	Exterior Lighting	Retrocommissioning	sqft	Existing	0.07	3	\$0.26	15%	76%	\$0.09	227.33	307.00	AEG Research
Lodging	Refrigeration	Retrocommissioning	sqft	Existing	0.11	3	\$0.26	15%	76%	\$0.09	406.93	381.07	AEG Research
Lodging	Interior Lighting	Fruit Storage - Lighting Controls	sqft	Existing	0.09	10	\$0.09	0%	0%	\$0.10	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Lodging	Refrigeration	Fruit Storage Refrigeration Retrofit	sqft	Existing	0.34	10	\$1.09	0%	0%	\$0.43	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Lodging	Refrigeration	Fruit Storage Refrigeration Tuneup	sqft	Existing	0.08	3	\$0.23	0%	0%	\$0.89	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Lodging	Refrigeration	Fruit Storage Retrofit - CO2 Scrub	sqft	Existing	0.15	10	\$3.13	0%	0%	\$2.56	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Lodging	Refrigeration	Fruit Storage Retrofit - Membrane	sqft	Existing	0.03	10	\$0.68	0%	0%	\$2.78	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Lodging	Cooling	Insulation - Ceiling	sqft roof	New	0.00	45	\$1.28	15%	50%	\$0.91	0.00	0.00	Building Energy Simulation Tool
Lodging	Heating	Insulation - Ceiling	sqft roof	New	0.08	45	\$1.28	15%	50%	\$0.91	14.58	13.45	Building Energy Simulation Tool
Lodging	Ventilation	Insulation - Ceiling	sqft roof	New	0.02	45	\$1.28	15%	50%	\$0.91	12.19	11.72	Building Energy Simulation Tool
Lodging	Cooling	Insulation - Ducting	sqft duct	New	0.00	20	\$0.84	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Lodging	Heating	Insulation - Ducting	sqft duct	New	0.00	20	\$0.84	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Lodging	Ventilation	Insulation - Ducting	sqft duct	New	0.00	20	\$0.84	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Lodging	Cooling	Building Shell - Cool Roofs	sqft roof	New	0.04	20	\$0.78	45%	50%	\$10.00	2.68	2.46	Building Energy Simulation Tool

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Lodging	Heating	Building Shell - Cool Roofs	sqft roof	New	-0.09	20	\$0.78	45%	50%	\$10.00	-2.36	-2.17	Building Energy Simulation Tool
Lodging	Ventilation	Building Shell - Cool Roofs	sqft roof	New	-0.03	20	\$0.78	45%	50%	\$10.00	-2.01	-1.93	Building Energy Simulation Tool
Lodging	Cooling	Insulation - Wall Cavity	sqft wall	New	0.00	45	\$0.78	15%	50%	\$3.03	0.00	0.00	Building Energy Simulation Tool
Lodging	Heating	Insulation - Wall Cavity	sqft wall	New	0.01	45	\$0.78	15%	50%	\$3.03	1.01	0.93	Building Energy Simulation Tool
Lodging	Ventilation	Insulation - Wall Cavity	sqft wall	New	0.00	45	\$0.78	15%	50%	\$3.03	0.86	0.83	Building Energy Simulation Tool
Lodging	Cooling	HVAC - Duct Repair and Sealing	tonCool	New	0.00	18	\$0.57	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Lodging	Heating	HVAC - Duct Repair and Sealing	tonCool	New	0.00	18	\$0.57	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Lodging	Ventilation	HVAC - Duct Repair and Sealing	tonCool	New	0.00	18	\$0.57	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Lodging	Cooling	Windows - High Efficiency Glazing	sqft window	New	1.52	30	\$35.93	66%	66%	\$0.19	0.00	0.00	7th Power Plan
Lodging	Heating	Windows - High Efficiency Glazing	sqft window	New	11.46	30	\$35.93	66%	66%	\$0.19	0.00	0.00	7th Power Plan
Lodging	Ventilation	Windows - High Efficiency Glazing	sqft window	New	2.07	30	\$35.93	66%	66%	\$0.19	0.00	0.00	7th Power Plan
Lodging	Cooling	Chiller - Chilled Water Reset	ChillCtrl	New	2,891.47	10	\$884.85	15%	75%	\$0.03	2.08	1.81	AEG-BEST
Lodging	Cooling	Chiller - Chilled Water Variable-Flow System	HP cool	New	60.13	15	\$332.55	15%	75%	\$0.49	7.62	6.79	AEG-BEST
Lodging	Cooling	Chiller - Variable Speed Fans	HP fan	New	150.81	15	\$208.36	15%	75%	\$0.12	1.93	1.69	New Jersey TRM
Lodging	Cooling	Water-Cooled Chiller - Condenser Water Reset	ChillCtrl	New	11,738.68	10	\$884.85	15%	75%	\$0.01	6.61	5.74	AEG-BEST
Lodging	Cooling	HVAC - Economizer	HP cool	New	42.43	10	\$168.42	18%	75%	\$0.43	12.27	11.04	AEG-BEST
Lodging	Heating	Space Heating - Heat Recovery Ventilator	CFM	New	1.72	14	\$5.08	6%	75%	\$0.33	66.66	57.42	7th Power Plan
Lodging	Ventilation	Ventilation - ECM on VAV Boxes	sqft	New	0.20	18	\$0.25	15%	20%	\$0.10	13.92	13.25	7th Power Plan
Lodging	Ventilation	Ventilation - Variable Speed Control	sqft	New	0.05	15	\$181.39	19%	50%	\$292.66	12.03	11.14	AEG-BEST

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Lodging	Ventilation	Ventilation - Demand Controlled	sqft	New	0.01	15	\$0.25	15%	75%	\$1.97	4.79	4.45	7th Power Plan
Lodging	Cooling	Destratification Fans (HVLS)	Strat Fan	New	1,406.40	15	\$7,270.90	15%	30%	\$0.07	13.58	11.92	AEG Research
Lodging	Heating	Destratification Fans (HVLS)	Strat Fan	New	9,825.51	15	\$7,270.90	15%	30%	\$0.07	37.01	31.52	AEG Research
Lodging	Cooling	RTU - Maintenance	tonCool	New	59.06	3	\$35.00	15%	45%	\$0.16	1.36	1.23	AEG Research
Lodging	Cooling	RTU - Advanced Controls	sqft	New	0.17	15	\$0.07	15%	45%	\$0.03	15.38	13.73	7th Power Plan
Lodging	Cooling	RTU - Evaporative Precooler	tonCool	New	120.26	15	\$681.62	15%	75%	\$0.50	69.39	63.40	AEG Research
Lodging	Cooling	Ductless Mini Split Heat Pump	tonCool	New	335.32	15	\$3,359.26	15%	75%	\$0.59	302.69	271.99	7th Power Plan
Lodging	Heating	Ductless Mini Split Heat Pump	tonCool	New	191.53	15	\$3,359.26	15%	75%	\$0.59	101.66	88.50	7th Power Plan
Lodging	Cooling	Thermostat - WiFi/Interactive	sqft	New	0.14	5	\$0.66	30%	40%	\$0.14	2.38	2.23	7th Power Plan
Lodging	Heating	Thermostat - WiFi/Interactive	sqft	New	0.55	5	\$0.66	30%	40%	\$0.14	3.61	3.05	7th Power Plan
Lodging	Ventilation	Thermostat - WiFi/Interactive	sqft	New	0.18	5	\$0.66	30%	40%	\$0.14	3.08	2.81	7th Power Plan
Lodging	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	New	271.09	10	\$8.35	25%	65%	\$0.00	2.54	2.98	Illinois TRM
Lodging	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	New	283.23	10	\$11.64	25%	65%	\$0.00	1.33	1.56	7th Power Plan
Lodging	Water Heating	Water Heater - High Efficiency Circulation Pump	WHUnits	New	44.92	15	\$36.75	15%	25%	\$0.03	1.06	1.13	Hawaii TRM
Lodging	Water Heating	Water Heater - Pipe Insulation	PipeFeet	New	833.19	15	\$14.88	1%	75%	\$0.00	9.61	10.90	AEG-BEST
Lodging	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	New	187.45	4	\$144.04	25%	65%	\$0.08	0.82	1.02	7th Power Plan
Lodging	Water Heating	Water Heater - Thermostat Setback	WHUnits	New	44.98	2	\$5.00	15%	75%	\$0.02	0.34	0.43	Illinois TRM
Lodging	Water Heating	Water Heater - Solar System	PipeFeet	New	2,921.19	20	\$215.28	1%	30%	\$0.00	13.64	15.41	AEG-BEST
Lodging	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.23	15	\$0.35	11%	23%	\$0.10	87.01	87.85	7th Power Plan
Lodging	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.32	15	\$0.58	11%	23%	\$0.11	120.09	121.53	7th Power Plan
Lodging	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	New	434.00	15	\$54.41	1%	3%	\$0.01	1.21	1.30	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Lodging	Interior Lighting	Interior Lighting - Timeclocks and Timers	occ sens	New	0.00	8	\$111.67	7%	15%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Lodging	Interior Lighting	Interior Lighting - Skylights	1000 sqft	New	0.00	15	\$1,006.35	18%	25%	\$0.00	0.00	0.00	AEG Research
Lodging	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	1000 sqft	New	46.89	16	\$1,807.69	5%	15%	\$2.26	3.51	3.68	7th Power Plan
Lodging	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	New	439.34	11	\$30.80	15%	50%	\$0.01	9.45	9.72	Illinois TRM
Lodging	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	ELtg Watts	New	3.22	8	\$0.63	15%	25%	\$0.01	20.96	24.32	7th Power Plan
Lodging	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	New	102.35	8	\$55.10	15%	25%	\$0.04	11.06	12.77	Pacific Gas and Electric Research
Lodging	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	New	125.41	7	\$3,400.00	15%	30%	\$1.98	17.65	20.91	AEG Research
Lodging	Refrigeration	Refrigeration - Anti-Sweat Heater	Fridge Feet	New	35.59	8	\$48.18	0%	0%	\$0.21	0.00	0.00	7th Power Plan
Lodging	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	New	74.14	4	\$10.44	0%	0%	\$0.04	0.00	0.00	Michigan Energy Measures Database
Lodging	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	New	641.99	16	\$165.20	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Lodging	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	New	119.63	15	\$335.85	0%	0%	\$0.30	0.00	0.00	7th Power Plan
Lodging	Refrigeration	Refrigeration - Strip Curtain	Walkin Door	New	66.13	2	\$10.41	0%	0%	\$0.08	0.00	0.00	7th Power Plan
Lodging	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBtuh	New	1.96	15	\$45.43	0%	0%	\$2.50	0.00	0.00	Annual Energy Outlook, 2015
Lodging	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	New	40.53	15	\$313.82	0%	0%	\$0.83	0.00	0.00	Annual Energy Outlook, 2015
Lodging	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	New	429.16	10	\$506.05	0%	0%	\$0.16	0.00	0.00	Vermont TRM
Lodging	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	New	45.09	6	\$45.41	0%	0%	\$0.19	0.00	0.00	7th Power Plan
Lodging	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	New	3.63	8	\$3.72	0%	0%	\$0.16	0.00	0.00	7th Power Plan
Lodging	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	New	490.10	5	\$45.85	0%	0%	\$0.02	0.00	0.00	Illinois TRM
Lodging	Refrigeration	Grocery - ECMs for Display Cases	Fridge Case	New	187.70	16	\$165.20	0%	0%	\$0.09	0.00	0.00	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Lodging	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	New	1,431.57	5	\$187.94	25%	75%	\$0.03	7.27	5.95	Illinois TRM
Lodging	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	New	1,709.52	18	\$8,526.67	25%	50%	\$0.38	23.29	22.33	7th Power Plan
Lodging	Office Equipment	Office Equipment - Smart Power Strips	Smart Strip	New	14.71	4	\$41.63	10%	50%	\$0.66	2.59	1.89	7th Power Plan
Lodging	Cooling	Lodging - Guest Room Controls	LodgUnit	New	247.57	15	\$260.00	15%	75%	\$0.14	162.45	143.18	AEG-BEST
Lodging	Heating	Lodging - Guest Room Controls	LodgUnit	New	-80.54	15	\$260.00	15%	75%	\$0.14	-31.07	-26.78	AEG-BEST
Lodging	Office Equipment	Data Center - Best Practice Measures	sqft	New	0.01	5	\$0.00	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Lodging	Cooling	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Lodging	Ventilation	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Lodging	Interior Lighting	Data Center - Commercially Available Measures	sqft	New	0.02	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Lodging	Office Equipment	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Lodging	Cooling	Data Center - Cutting Edge Measures	sqft	New	0.02	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Lodging	Office Equipment	Data Center - Cutting Edge Measures	sqft	New	0.00	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Lodging	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	New	2,913.09	18	\$4,092.80	0%	0%	\$0.11	0.00	0.00	7th Power Plan
Lodging	Miscellaneous	Pool Pump - Timer	perBldg	New	465.73	10	\$85.22	15%	75%	\$0.02	2.91	2.55	Ontario Power TRM
Lodging	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	New	5,759.07	6	\$35.93	1%	3%	\$0.00	1.16	0.98	7th Power Plan
Lodging	Cooling	Advanced New Construction Designs	sqft	New	0.36	25	\$4.11	10%	25%	\$0.06	83.64	76.20	AEG Research
Lodging	Heating	Advanced New Construction Designs	sqft	New	1.28	25	\$4.11	10%	25%	\$0.06	117.25	107.10	AEG Research
Lodging	Ventilation	Advanced New Construction Designs	sqft	New	0.40	25	\$4.11	10%	25%	\$0.06	97.27	92.56	AEG Research
Lodging	Water Heating	Advanced New Construction Designs	sqft	New	0.75	25	\$4.11	10%	25%	\$0.06	36.99	38.75	AEG Research

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Lodging	Interior Lighting	Advanced New Construction Designs	sqft	New	0.60	25	\$4.11	10%	25%	\$0.06	132.42	132.76	AEG Research
Lodging	Exterior Lighting	Advanced New Construction Designs	sqft	New	0.25	25	\$4.11	10%	25%	\$0.06	63.76	66.27	AEG Research
Lodging	Cooling	Strategic Energy Management	sqft	New	0.05	3	\$0.19	0%	0%	\$0.07	0.00	0.00	AEG Research
Lodging	Heating	Strategic Energy Management	sqft	New	0.19	3	\$0.19	0%	0%	\$0.07	0.00	0.00	AEG Research
Lodging	Ventilation	Strategic Energy Management	sqft	New	0.06	3	\$0.19	0%	0%	\$0.07	0.00	0.00	AEG Research
Lodging	Water Heating	Strategic Energy Management	sqft	New	0.11	3	\$0.19	0%	0%	\$0.07	0.00	0.00	AEG Research
Lodging	Interior Lighting	Strategic Energy Management	sqft	New	0.09	3	\$0.19	0%	0%	\$0.07	0.00	0.00	AEG Research
Lodging	Exterior Lighting	Strategic Energy Management	sqft	New	0.04	3	\$0.19	0%	0%	\$0.07	0.00	0.00	AEG Research
Lodging	Refrigeration	Strategic Energy Management	sqft	New	0.06	3	\$0.19	0%	0%	\$0.07	0.00	0.00	AEG Research
Lodging	Office Equipment	Strategic Energy Management	sqft	New	0.02	3	\$0.19	0%	0%	\$0.07	0.00	0.00	AEG Research
Lodging	Cooling	Commissioning	sqft	New	0.07	3	\$0.42	15%	76%	\$0.14	5.57	5.34	AEG Research
Lodging	Heating	Commissioning	sqft	New	0.26	3	\$0.42	15%	76%	\$0.14	8.43	7.02	AEG Research
Lodging	Ventilation	Commissioning	sqft	New	0.08	3	\$0.42	15%	76%	\$0.14	7.19	6.47	AEG Research
Lodging	Water Heating	Commissioning	sqft	New	0.05	3	\$0.42	15%	76%	\$0.14	0.92	1.16	AEG Research
Lodging	Interior Lighting	Commissioning	sqft	New	0.10	3	\$0.42	15%	76%	\$0.14	8.23	10.22	AEG Research
Lodging	Exterior Lighting	Commissioning	sqft	New	0.04	3	\$0.42	15%	76%	\$0.14	3.94	4.89	AEG Research
Lodging	Refrigeration	Commissioning	sqft	New	0.13	3	\$0.42	15%	76%	\$0.14	9.87	7.96	AEG Research
Lodging	Cooling	Retrocommissioning	sqft	New	0.07	3	\$0.27	0%	0%	\$0.09	0.00	0.00	AEG Research
Lodging	Heating	Retrocommissioning	sqft	New	0.26	3	\$0.27	0%	0%	\$0.09	0.00	0.00	AEG Research
Lodging	Ventilation	Retrocommissioning	sqft	New	0.08	3	\$0.27	0%	0%	\$0.09	0.00	0.00	AEG Research
Lodging	Water Heating	Retrocommissioning	sqft	New	0.05	3	\$0.27	0%	0%	\$0.09	0.00	0.00	AEG Research
Lodging	Interior Lighting	Retrocommissioning	sqft	New	0.10	3	\$0.27	0%	0%	\$0.09	0.00	0.00	AEG Research

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Lodging	Exterior Lighting	Retrocommissioning	sqft	New	0.04	3	\$0.27	0%	0%	\$0.09	0.00	0.00	AEG Research
Lodging	Refrigeration	Retrocommissioning	sqft	New	0.13	3	\$0.27	0%	0%	\$0.09	0.00	0.00	AEG Research
Lodging	Interior Lighting	Fruit Storage - Lighting Controls	sqft	New	0.07	10	\$0.09	0%	0%	\$0.09	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Lodging	Refrigeration	Fruit Storage Refrigeration Retrofit	sqft	New	0.40	10	\$1.09	0%	0%	\$0.36	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Lodging	Refrigeration	Fruit Storage Refrigeration Tuneup	sqft	New	0.10	3	\$0.23	0%	0%	\$0.74	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Lodging	Refrigeration	Fruit Storage Retrofit - CO2 Scrub	sqft	New	0.20	10	\$3.13	0%	0%	\$2.15	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Lodging	Refrigeration	Fruit Storage Retrofit - Membrane	sqft	New	0.04	10	\$0.68	0%	0%	\$2.34	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse	Cooling	Insulation - Ceiling	sqft roof	Existing	0.12	45	\$1.28	15%	35%	\$0.12	66.90	61.90	Building Energy Simulation Tool
Warehouse	Heating	Insulation - Ceiling	sqft roof	Existing	0.59	45	\$1.28	15%	35%	\$0.12	353.78	336.94	Building Energy Simulation Tool
Warehouse	Ventilation	Insulation - Ceiling	sqft roof	Existing	0.01	45	\$1.28	15%	35%	\$0.12	31.93	32.81	Building Energy Simulation Tool
Warehouse	Cooling	Insulation - Ducting	sqft duct	Existing	0.04	20	\$0.84	15%	35%	\$1.01	21.60	21.92	Building Energy Simulation Tool
Warehouse	Heating	Insulation - Ducting	sqft duct	Existing	0.02	20	\$0.84	15%	35%	\$1.01	14.33	13.93	Building Energy Simulation Tool
Warehouse	Ventilation	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.84	15%	35%	\$1.01	1.25	1.34	Building Energy Simulation Tool
Warehouse	Cooling	Building Shell - Cool Roofs	sqft roof	Existing	0.13	20	\$0.78	45%	50%	\$10.00	17.61	18.19	Building Energy Simulation Tool
Warehouse	Heating	Building Shell - Cool Roofs	sqft roof	Existing	-0.37	20	\$0.78	45%	50%	\$10.00	-54.13	-53.44	Building Energy Simulation Tool
Warehouse	Ventilation	Building Shell - Cool Roofs	sqft roof	Existing	-0.01	20	\$0.78	45%	50%	\$10.00	-4.66	-5.09	Building Energy Simulation Tool
Warehouse	Cooling	Insulation - Wall Cavity	sqft wall	Existing	0.01	45	\$0.78	15%	35%	\$0.01	1.11	1.00	Building Energy Simulation Tool
Warehouse	Heating	Insulation - Wall Cavity	sqft wall	Existing	4.89	45	\$0.78	15%	35%	\$0.01	581.91	513.96	Building Energy Simulation Tool
Warehouse	Ventilation	Insulation - Wall Cavity	sqft wall	Existing	0.07	45	\$0.78	15%	35%	\$0.01	43.45	44.17	Building Energy Simulation Tool

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Warehouse	Cooling	HVAC - Duct Repair and Sealing	tonCool	Existing	7.70	18	\$0.57	15%	25%	\$0.00	4.54	4.08	Building Energy Simulation Tool
Warehouse	Heating	HVAC - Duct Repair and Sealing	tonCool	Existing	32.72	18	\$0.57	15%	25%	\$0.00	20.51	18.11	Building Energy Simulation Tool
Warehouse	Ventilation	HVAC - Duct Repair and Sealing	tonCool	Existing	0.49	18	\$0.57	15%	25%	\$0.00	1.53	1.56	Building Energy Simulation Tool
Warehouse	Cooling	Windows - High Efficiency Glazing	sqft window	Existing	3.04	30	\$35.93	48%	48%	\$0.07	0.00	0.00	7th Power Plan
Warehouse	Heating	Windows - High Efficiency Glazing	sqft window	Existing	32.53	30	\$35.93	48%	48%	\$0.07	0.00	0.00	7th Power Plan
Warehouse	Ventilation	Windows - High Efficiency Glazing	sqft window	Existing	0.33	30	\$35.93	48%	48%	\$0.07	0.00	0.00	7th Power Plan
Warehouse	Cooling	Chiller - Chilled Water Reset	ChillCtrl	Existing	0.00	10	\$884.85	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Warehouse	Cooling	Chiller - Chilled Water Variable-Flow System	HP cool	Existing	0.00	15	\$332.55	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Warehouse	Cooling	Chiller - Variable Speed Fans	HP fan	Existing	0.00	15	\$208.36	15%	75%	\$0.00	0.00	0.00	New Jersey TRM
Warehouse	Cooling	Water-Cooled Chiller - Condenser Water Reset	ChillCtrl	Existing	0.00	10	\$884.85	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Warehouse	Cooling	HVAC - Economizer	HP cool	Existing	76.99	10	\$168.42	18%	75%	\$0.27	195.13	177.11	AEG-BEST
Warehouse	Heating	Space Heating - Heat Recovery Ventilator	CFM	Existing	11.62	14	\$5.08	3%	75%	\$0.05	1,697.82	1,438.35	7th Power Plan
Warehouse	Ventilation	Ventilation - ECM on VAV Boxes	sqft	Existing	0.05	18	\$0.25	15%	20%	\$0.44	34.93	36.19	7th Power Plan
Warehouse	Ventilation	Ventilation - Variable Speed Control	sqft	Existing	0.00	15	\$181.39	13%	50%	\$3,682.81	23.46	26.27	AEG-BEST
Warehouse	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.25	15%	75%	\$9.01	21.50	23.97	7th Power Plan
Warehouse	Cooling	Destratification Fans (HVLS)	Strat Fan	Existing	1,789.02	15	\$7,270.90	15%	75%	\$0.04	295.19	253.78	AEG Research
Warehouse	Heating	Destratification Fans (HVLS)	Strat Fan	Existing	18,501.84	15	\$7,270.90	15%	75%	\$0.04	3,187.93	2,796.14	AEG Research
Warehouse	Cooling	RTU - Maintenance	tonCool	Existing	60.75	3	\$35.00	15%	45%	\$0.17	88.13	88.71	AEG Research
Warehouse	Cooling	RTU - Advanced Controls	sqft	Existing	0.07	15	\$0.07	15%	45%	\$0.10	48.13	43.96	7th Power Plan
Warehouse	Cooling	RTU - Evaporative Precooler	tonCool	Existing	126.99	15	\$681.62	15%	75%	\$0.51	340.72	322.67	AEG Research
Warehouse	Cooling	Ductless Mini Split Heat Pump	tonCool	Existing	285.03	15	\$3,359.26	15%	25%	\$0.36	8.54	8.76	7th Power Plan

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Warehouse	Heating	Ductless Mini Split Heat Pump	tonCool	Existing	569.98	15	\$3,359.26	15%	25%	\$0.36	263.03	248.01	7th Power Plan
Warehouse	Cooling	Thermostat - WiFi/Interactive	sqft	Existing	0.18	5	\$0.66	30%	40%	\$0.10	47.76	48.06	7th Power Plan
Warehouse	Heating	Thermostat - WiFi/Interactive	sqft	Existing	0.98	5	\$0.66	30%	40%	\$0.10	292.05	281.73	7th Power Plan
Warehouse	Ventilation	Thermostat - WiFi/Interactive	sqft	Existing	0.02	5	\$0.66	30%	40%	\$0.10	26.22	27.41	7th Power Plan
Warehouse	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	Existing	48.03	10	\$8.35	25%	65%	\$0.01	12.84	19.82	Illinois TRM
Warehouse	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	Existing	49.33	10	\$11.64	25%	65%	\$0.02	6.55	10.27	7th Power Plan
Warehouse	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	Existing	63.09	15	\$36.75	15%	75%	\$0.03	11.34	15.48	Hawaii TRM
Warehouse	Water Heating	Water Heater - Pipe Insulation	PipeFeet	Existing	159.46	15	\$14.88	16%	75%	\$0.01	26.95	37.87	AEG-BEST
Warehouse	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	Existing	31.85	4	\$144.04	25%	65%	\$0.62	8.15	13.10	7th Power Plan
Warehouse	Water Heating	Water Heater - Thermostat Setback	WHunits	Existing	62.48	2	\$5.00	15%	75%	\$0.02	12.02	19.00	Illinois TRM
Warehouse	Water Heating	Water Heater - Solar System	PipeFeet	Existing	544.16	20	\$215.28	1%	30%	\$0.02	44.44	64.24	AEG-BEST
Warehouse	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.25	15	\$0.35	3%	23%	\$0.11	898.78	1,003.15	7th Power Plan
Warehouse	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.34	15	\$0.58	3%	23%	\$0.13	1,210.85	1,380.20	7th Power Plan
Warehouse	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	Existing	695.75	15	\$54.41	1%	3%	\$0.01	25.11	30.07	7th Power Plan
Warehouse	Interior Lighting	Interior Lighting - Timeclocks and Timers	occ sens	Existing	0.00	8	\$111.67	7%	15%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Warehouse	Interior Lighting	Interior Lighting - Skylights	1000 sqft	Existing	0.00	15	\$1,006.35	15%	30%	\$0.00	0.00	0.00	AEG Research
Warehouse	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	1000 sqft	Existing	38.72	16	\$1,807.69	5%	15%	\$3.46	54.96	70.30	7th Power Plan
Warehouse	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	Existing	363.36	11	\$30.80	15%	50%	\$0.01	190.12	223.82	Illinois TRM
Warehouse	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	ELtg Watts	Existing	1.02	8	\$0.63	15%	25%	\$0.07	251.21	318.59	7th Power Plan

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Warehouse	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	Existing	84.00	8	\$55.10	15%	25%	\$0.07	127.11	165.86	Pacific Gas and Electric Research
Warehouse	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	Existing	100.17	7	\$3,400.00	15%	30%	\$3.82	223.61	302.83	AEG Research
Warehouse	Refrigeration	Refrigeration - Anti-Sweat Heater	Fridge Feet	Existing	95.40	8	\$48.18	0%	0%	\$0.08	0.00	0.00	7th Power Plan
Warehouse	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	Existing	89.71	4	\$10.44	0%	0%	\$0.03	0.00	0.00	Michigan Energy Measures Database
Warehouse	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	Existing	972.66	16	\$165.20	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Warehouse	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	Existing	95.27	15	\$335.85	0%	0%	\$0.37	0.00	0.00	7th Power Plan
Warehouse	Refrigeration	Refrigeration - Strip Curtain	Walkin Door	Existing	141.44	2	\$10.41	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Warehouse	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBtuh	Existing	1.55	15	\$45.43	0%	0%	\$3.08	0.00	0.00	Annual Energy Outlook, 2015
Warehouse	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	Existing	32.28	15	\$313.82	0%	0%	\$1.03	0.00	0.00	Annual Energy Outlook, 2015
Warehouse	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	Existing	639.32	10	\$506.05	0%	0%	\$0.10	0.00	0.00	Vermont TRM
Warehouse	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	Existing	38.12	6	\$45.41	0%	0%	\$0.22	0.00	0.00	7th Power Plan
Warehouse	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	Existing	3.07	8	\$3.72	0%	0%	\$0.19	0.00	0.00	7th Power Plan
Warehouse	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	Existing	981.56	5	\$45.85	0%	0%	\$0.01	0.00	0.00	Illinois TRM
Warehouse	Refrigeration	Grocery - ECMs for Display Cases	Fridge Case	Existing	161.46	16	\$165.20	0%	0%	\$0.11	0.00	0.00	7th Power Plan
Warehouse	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	Existing	1,441.80	5	\$187.94	25%	75%	\$0.03	28.16	24.24	Illinois TRM
Warehouse	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	Existing	381.06	18	\$8,526.67	25%	50%	\$1.75	58.23	61.29	7th Power Plan
Warehouse	Office Equipment	Office Equipment - Smart Power Strips	Smart Strip	Existing	5.48	4	\$41.63	10%	50%	\$1.77	84.11	61.78	7th Power Plan
Warehouse	Cooling	Lodging - Guest Room Controls	LodgUnit	Existing	129.02	15	\$260.00	0%	0%	\$10.00	0.00	0.00	AEG-BEST
Warehouse	Heating	Lodging - Guest Room Controls	LodgUnit	Existing	-159.12	15	\$260.00	0%	0%	\$10.00	0.00	0.00	AEG-BEST

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Warehouse	Office Equipment	Data Center - Best Practice Measures	sqft	Existing	0.02	5	\$0.00	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse	Cooling	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse	Ventilation	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse	Interior Lighting	Data Center - Commercially Available Measures	sqft	Existing	0.02	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse	Office Equipment	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse	Cooling	Data Center - Cutting Edge Measures	sqft	Existing	0.02	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse	Office Equipment	Data Center - Cutting Edge Measures	sqft	Existing	0.00	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	Existing	1,301.27	18	\$4,092.80	0%	0%	\$0.25	0.00	0.00	7th Power Plan
Warehouse	Miscellaneous	Pool Pump - Timer	perBldg	Existing	0.00	10	\$85.22	15%	75%	\$0.00	0.00	0.00	Ontario Power TRM
Warehouse	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	Existing	6,585.08	6	\$35.93	1%	3%	\$0.00	0.00	40.60	7th Power Plan
Warehouse	Cooling	Advanced New Construction Designs	sqft	Existing	0.35	25	\$4.11	0%	0%	\$0.10	0.00	0.00	AEG Research
Warehouse	Heating	Advanced New Construction Designs	sqft	Existing	2.10	25	\$4.11	0%	0%	\$0.10	0.00	0.00	AEG Research
Warehouse	Ventilation	Advanced New Construction Designs	sqft	Existing	0.03	25	\$4.11	0%	0%	\$0.10	0.00	0.00	AEG Research
Warehouse	Water Heating	Advanced New Construction Designs	sqft	Existing	0.03	25	\$4.11	0%	0%	\$0.10	0.00	0.00	AEG Research
Warehouse	Interior Lighting	Advanced New Construction Designs	sqft	Existing	0.50	25	\$4.11	0%	0%	\$0.10	0.00	0.00	AEG Research
Warehouse	Exterior Lighting	Advanced New Construction Designs	sqft	Existing	0.12	25	\$4.11	0%	0%	\$0.10	0.00	0.00	AEG Research
Warehouse	Cooling	Strategic Energy Management	sqft	Existing	0.06	3	\$0.07	3%	11%	\$0.04	13.93	14.34	AEG Research
Warehouse	Heating	Strategic Energy Management	sqft	Existing	0.33	3	\$0.07	3%	11%	\$0.04	85.18	82.75	AEG Research
Warehouse	Ventilation	Strategic Energy Management	sqft	Existing	0.01	3	\$0.07	3%	11%	\$0.04	7.43	8.06	AEG Research

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Warehouse	Water Heating	Strategic Energy Management	sqft	Existing	0.00	3	\$0.07	3%	11%	\$0.04	1.72	2.76	AEG Research
Warehouse	Interior Lighting	Strategic Energy Management	sqft	Existing	0.07	3	\$0.07	3%	11%	\$0.04	82.29	106.68	AEG Research
Warehouse	Exterior Lighting	Strategic Energy Management	sqft	Existing	0.02	3	\$0.07	3%	11%	\$0.04	18.39	24.36	AEG Research
Warehouse	Refrigeration	Strategic Energy Management	sqft	Existing	0.00	3	\$0.07	3%	11%	\$0.04	3.69	3.50	AEG Research
Warehouse	Office Equipment	Strategic Energy Management	sqft	Existing	0.01	3	\$0.07	3%	11%	\$0.04	11.39	8.35	AEG Research
Warehouse	Cooling	Commissioning	sqft	Existing	0.08	3	\$0.31	0%	0%	\$0.13	0.00	0.00	AEG Research
Warehouse	Heating	Commissioning	sqft	Existing	0.44	3	\$0.31	0%	0%	\$0.13	0.00	0.00	AEG Research
Warehouse	Ventilation	Commissioning	sqft	Existing	0.01	3	\$0.31	0%	0%	\$0.13	0.00	0.00	AEG Research
Warehouse	Water Heating	Commissioning	sqft	Existing	0.00	3	\$0.31	0%	0%	\$0.13	0.00	0.00	AEG Research
Warehouse	Interior Lighting	Commissioning	sqft	Existing	0.08	3	\$0.31	0%	0%	\$0.13	0.00	0.00	AEG Research
Warehouse	Exterior Lighting	Commissioning	sqft	Existing	0.02	3	\$0.31	0%	0%	\$0.13	0.00	0.00	AEG Research
Warehouse	Refrigeration	Commissioning	sqft	Existing	0.01	3	\$0.31	0%	0%	\$0.13	0.00	0.00	AEG Research
Warehouse	Cooling	Retrocommissioning	sqft	Existing	0.08	3	\$0.20	11%	73%	\$0.08	148.03	153.44	AEG Research
Warehouse	Heating	Retrocommissioning	sqft	Existing	0.46	3	\$0.20	11%	73%	\$0.08	909.99	886.40	AEG Research
Warehouse	Ventilation	Retrocommissioning	sqft	Existing	0.01	3	\$0.20	11%	73%	\$0.08	79.33	86.36	AEG Research
Warehouse	Water Heating	Retrocommissioning	sqft	Existing	0.00	3	\$0.20	11%	73%	\$0.08	6.03	9.80	AEG Research
Warehouse	Interior Lighting	Retrocommissioning	sqft	Existing	0.08	3	\$0.20	11%	73%	\$0.08	731.19	951.39	AEG Research
Warehouse	Exterior Lighting	Retrocommissioning	sqft	Existing	0.02	3	\$0.20	11%	73%	\$0.08	163.84	217.49	AEG Research
Warehouse	Refrigeration	Retrocommissioning	sqft	Existing	0.01	3	\$0.20	11%	73%	\$0.08	65.73	62.53	AEG Research
Warehouse	Interior Lighting	Fruit Storage - Lighting Controls	sqft	Existing	0.06	10	\$0.09	0%	0%	\$0.14	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse	Refrigeration	Fruit Storage Refrigeration Retrofit	sqft	Existing	0.02	10	\$1.09	0%	0%	\$6.89	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse	Refrigeration	Fruit Storage Refrigeration Tuneup	sqft	Existing	0.01	3	\$0.23	0%	0%	\$14.14	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx

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Warehouse	Refrigeration	Fruit Storage Retrofit - CO2 Scrub	sqft	Existing	0.01	10	\$3.13	0%	0%	\$40.88	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse	Refrigeration	Fruit Storage Retrofit - Membrane	sqft	Existing	0.00	10	\$0.68	0%	0%	\$44.36	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse	Cooling	Insulation - Ceiling	sqft roof	New	0.00	45	\$1.28	15%	50%	\$0.15	0.00	0.00	Building Energy Simulation Tool
Warehouse	Heating	Insulation - Ceiling	sqft roof	New	0.64	45	\$1.28	15%	50%	\$0.15	161.04	146.94	Building Energy Simulation Tool
Warehouse	Ventilation	Insulation - Ceiling	sqft roof	New	0.01	45	\$1.28	15%	50%	\$0.15	10.60	10.50	Building Energy Simulation Tool
Warehouse	Cooling	Insulation - Ducting	sqft duct	New	0.06	20	\$0.84	15%	25%	\$0.76	3.86	3.60	Building Energy Simulation Tool
Warehouse	Heating	Insulation - Ducting	sqft duct	New	0.04	20	\$0.84	15%	25%	\$0.76	2.57	2.36	Building Energy Simulation Tool
Warehouse	Ventilation	Insulation - Ducting	sqft duct	New	0.00	20	\$0.84	15%	25%	\$0.76	0.17	0.17	Building Energy Simulation Tool
Warehouse	Cooling	Building Shell - Cool Roofs	sqft roof	New	0.12	20	\$0.78	45%	50%	\$10.00	4.08	3.81	Building Energy Simulation Tool
Warehouse	Heating	Building Shell - Cool Roofs	sqft roof	New	-0.41	20	\$0.78	45%	50%	\$10.00	-14.94	-13.68	Building Energy Simulation Tool
Warehouse	Ventilation	Building Shell - Cool Roofs	sqft roof	New	0.00	20	\$0.78	45%	50%	\$10.00	-0.96	-0.96	Building Energy Simulation Tool
Warehouse	Cooling	Insulation - Wall Cavity	sqft wall	New	-0.01	45	\$0.78	15%	50%	\$0.09	-0.32	-0.30	Building Energy Simulation Tool
Warehouse	Heating	Insulation - Wall Cavity	sqft wall	New	0.68	45	\$0.78	15%	50%	\$0.09	32.16	29.58	Building Energy Simulation Tool
Warehouse	Ventilation	Insulation - Wall Cavity	sqft wall	New	0.01	45	\$0.78	15%	50%	\$0.09	2.03	2.01	Building Energy Simulation Tool
Warehouse	Cooling	HVAC - Duct Repair and Sealing	tonCool	New	11.72	18	\$0.57	15%	25%	\$0.00	1.55	1.43	Building Energy Simulation Tool
Warehouse	Heating	HVAC - Duct Repair and Sealing	tonCool	New	26.86	18	\$0.57	15%	25%	\$0.00	3.70	3.40	Building Energy Simulation Tool
Warehouse	Ventilation	HVAC - Duct Repair and Sealing	tonCool	New	0.25	18	\$0.57	15%	25%	\$0.00	0.23	0.23	Building Energy Simulation Tool
Warehouse	Cooling	Windows - High Efficiency Glazing	sqft window	New	2.55	30	\$35.93	66%	66%	\$0.08	0.00	0.00	7th Power Plan
Warehouse	Heating	Windows - High Efficiency Glazing	sqft window	New	34.87	30	\$35.93	66%	66%	\$0.08	0.00	0.00	7th Power Plan

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Warehouse	Ventilation	Windows - High Efficiency Glazing	sqft window	New	0.20	30	\$35.93	66%	66%	\$0.08	0.00	0.00	7th Power Plan
Warehouse	Cooling	Chiller - Chilled Water Reset	ChillCtrl	New	0.00	10	\$884.85	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Warehouse	Cooling	Chiller - Chilled Water Variable-Flow System	HP cool	New	0.00	15	\$332.55	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Warehouse	Cooling	Chiller - Variable Speed Fans	HP fan	New	0.00	15	\$208.36	15%	75%	\$0.00	0.00	0.00	New Jersey TRM
Warehouse	Cooling	Water-Cooled Chiller - Condenser Water Reset	ChillCtrl	New	0.00	10	\$884.85	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Warehouse	Cooling	HVAC - Economizer	HP cool	New	63.20	10	\$168.42	18%	75%	\$0.32	14.73	13.20	AEG-BEST
Warehouse	Heating	Space Heating - Heat Recovery Ventilator	CFM	New	11.40	14	\$5.08	6%	75%	\$0.05	179.24	152.34	7th Power Plan
Warehouse	Ventilation	Ventilation - ECM on VAV Boxes	sqft	New	0.03	18	\$0.25	15%	20%	\$0.45	7.36	7.34	7th Power Plan
Warehouse	Ventilation	Ventilation - Variable Speed Control	sqft	New	0.00	15	\$181.39	19%	50%	\$3,787.94	2.35	2.34	AEG-BEST
Warehouse	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.25	15%	75%	\$9.27	2.57	2.56	7th Power Plan
Warehouse	Cooling	Destratification Fans (HVLS)	Strat Fan	New	1,452.69	15	\$7,270.90	15%	75%	\$0.04	28.25	24.33	AEG Research
Warehouse	Heating	Destratification Fans (HVLS)	Strat Fan	New	18,747.57	15	\$7,270.90	15%	75%	\$0.04	381.20	324.08	AEG Research
Warehouse	Cooling	RTU - Maintenance	tonCool	New	71.42	3	\$35.00	15%	45%	\$0.15	2.07	1.82	AEG Research
Warehouse	Cooling	RTU - Advanced Controls	sqft	New	0.08	15	\$0.07	15%	45%	\$0.09	11.91	10.60	7th Power Plan
Warehouse	Cooling	RTU - Evaporative Precooler	tonCool	New	150.72	15	\$681.62	15%	75%	\$0.46	109.82	100.31	AEG Research
Warehouse	Cooling	Ductless Mini Split Heat Pump	tonCool	New	374.14	15	\$3,359.26	15%	25%	\$0.33	1.88	1.70	7th Power Plan
Warehouse	Heating	Ductless Mini Split Heat Pump	tonCool	New	631.41	15	\$3,359.26	15%	25%	\$0.33	46.72	40.25	7th Power Plan
Warehouse	Cooling	Thermostat - WiFi/Interactive	sqft	New	0.15	5	\$0.66	30%	40%	\$0.11	1.29	1.14	7th Power Plan
Warehouse	Heating	Thermostat - WiFi/Interactive	sqft	New	1.06	5	\$0.66	30%	40%	\$0.11	9.41	7.86	7th Power Plan
Warehouse	Ventilation	Thermostat - WiFi/Interactive	sqft	New	0.01	5	\$0.66	30%	40%	\$0.11	0.62	0.61	7th Power Plan
Warehouse	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	New	32.45	10	\$8.35	25%	65%	\$0.01	1.01	1.18	Illinois TRM

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Warehouse	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	New	33.77	10	\$11.64	25%	65%	\$0.02	0.53	0.62	7th Power Plan
Warehouse	Water Heating	Water Heater - High Efficiency Circulation Pump	WHUnits	New	43.49	15	\$36.75	15%	75%	\$0.03	2.50	2.64	Hawaii TRM
Warehouse	Water Heating	Water Heater - Pipe Insulation	PipeFeet	New	102.44	15	\$14.88	1%	75%	\$0.01	3.89	4.42	AEG-BEST
Warehouse	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	New	22.33	4	\$144.04	25%	65%	\$0.62	0.33	0.40	7th Power Plan
Warehouse	Water Heating	Water Heater - Thermostat Setback	WHUnits	New	43.25	2	\$5.00	15%	75%	\$0.02	0.13	0.17	Illinois TRM
Warehouse	Water Heating	Water Heater - Solar System	PipeFeet	New	355.21	20	\$215.28	1%	30%	\$0.02	5.48	6.18	AEG-BEST
Warehouse	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.19	15	\$0.35	11%	23%	\$0.11	202.50	210.43	7th Power Plan
Warehouse	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.26	15	\$0.58	11%	23%	\$0.13	278.26	290.00	7th Power Plan
Warehouse	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	New	536.29	15	\$54.41	1%	3%	\$0.01	2.19	2.36	7th Power Plan
Warehouse	Interior Lighting	Interior Lighting - Timeclocks and Timers	occ sens	New	0.00	8	\$111.67	7%	15%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Warehouse	Interior Lighting	Interior Lighting - Skylights	1000 sqft	New	0.00	15	\$1,006.35	18%	33%	\$0.00	0.00	0.00	AEG Research
Warehouse	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	1000 sqft	New	28.32	16	\$1,807.69	5%	15%	\$3.64	6.09	6.55	7th Power Plan
Warehouse	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	New	265.77	11	\$30.80	15%	50%	\$0.01	16.32	17.46	Illinois TRM
Warehouse	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	ELtg Watts	New	0.72	8	\$0.63	15%	25%	\$0.07	17.35	19.39	7th Power Plan
Warehouse	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	New	60.15	8	\$55.10	15%	25%	\$0.07	9.15	10.18	Pacific Gas and Electric Research
Warehouse	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	New	73.94	7	\$3,400.00	15%	30%	\$3.84	14.81	16.62	AEG Research
Warehouse	Refrigeration	Refrigeration - Anti-Sweat Heater	Fridge Feet	New	65.42	8	\$48.18	0%	0%	\$0.11	0.00	0.00	7th Power Plan
Warehouse	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	New	66.63	4	\$10.44	0%	0%	\$0.04	0.00	0.00	Michigan Energy Measures Database
Warehouse	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	New	788.18	16	\$165.20	0%	0%	\$0.02	0.00	0.00	7th Power Plan

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Warehouse	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	New	87.58	15	\$335.85	0%	0%	\$0.41	0.00	0.00	7th Power Plan
Warehouse	Refrigeration	Refrigeration - Strip Curtain	Walkin Door	New	121.58	2	\$10.41	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Warehouse	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	New	1.43	15	\$45.43	0%	0%	\$3.38	0.00	0.00	Annual Energy Outlook, 2015
Warehouse	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	New	29.67	15	\$313.82	0%	0%	\$1.13	0.00	0.00	Annual Energy Outlook, 2015
Warehouse	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	New	526.28	10	\$506.05	0%	0%	\$0.13	0.00	0.00	Vermont TRM
Warehouse	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	New	34.44	6	\$45.41	0%	0%	\$0.25	0.00	0.00	7th Power Plan
Warehouse	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	New	2.77	8	\$3.72	0%	0%	\$0.21	0.00	0.00	7th Power Plan
Warehouse	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	New	902.09	5	\$45.85	0%	0%	\$0.01	0.00	0.00	Illinois TRM
Warehouse	Refrigeration	Grocery - ECMs for Display Cases	Fridge Case	New	143.53	16	\$165.20	0%	0%	\$0.12	0.00	0.00	7th Power Plan
Warehouse	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	New	1,372.26	5	\$187.94	25%	75%	\$0.03	1.48	1.22	Illinois TRM
Warehouse	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	New	271.97	18	\$8,526.67	25%	50%	\$1.80	12.52	12.51	7th Power Plan
Warehouse	Office Equipment	Office Equipment - Smart Power Strips	Smart Strip	New	6.19	4	\$41.63	10%	50%	\$1.56	3.17	2.29	7th Power Plan
Warehouse	Cooling	Lodging - Guest Room Controls	LodgUnit	New	197.29	15	\$260.00	0%	0%	\$3.35	0.00	0.00	AEG-BEST
Warehouse	Heating	Lodging - Guest Room Controls	LodgUnit	New	-199.24	15	\$260.00	0%	0%	\$3.35	0.00	0.00	AEG-BEST
Warehouse	Office Equipment	Data Center - Best Practice Measures	sqft	New	0.02	5	\$0.00	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse	Cooling	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse	Ventilation	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse	Interior Lighting	Data Center - Commercially Available Measures	sqft	New	0.01	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse	Office Equipment	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx

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Warehouse	Cooling	Data Center - Cutting Edge Measures	sqft	New	0.02	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse	Office Equipment	Data Center - Cutting Edge Measures	sqft	New	0.00	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	New	925.50	18	\$4,092.80	0%	0%	\$0.26	0.00	0.00	7th Power Plan
Warehouse	Miscellaneous	Pool Pump - Timer	perBldg	New	0.00	10	\$85.22	15%	75%	\$0.00	0.00	0.00	Ontario Power TRM
Warehouse	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	New	6,585.08	6	\$35.93	1%	3%	\$0.00	0.00	1.56	7th Power Plan
Warehouse	Cooling	Advanced New Construction Designs	sqft	New	0.36	25	\$4.11	10%	15%	\$0.10	14.18	12.96	AEG Research
Warehouse	Heating	Advanced New Construction Designs	sqft	New	2.36	25	\$4.11	10%	15%	\$0.10	96.83	87.81	AEG Research
Warehouse	Ventilation	Advanced New Construction Designs	sqft	New	0.02	25	\$4.11	10%	15%	\$0.10	6.37	6.35	AEG Research
Warehouse	Water Heating	Advanced New Construction Designs	sqft	New	0.02	25	\$4.11	10%	15%	\$0.10	1.98	2.06	AEG Research
Warehouse	Interior Lighting	Advanced New Construction Designs	sqft	New	0.36	25	\$4.11	10%	15%	\$0.10	78.67	80.60	AEG Research
Warehouse	Exterior Lighting	Advanced New Construction Designs	sqft	New	0.07	25	\$4.11	10%	15%	\$0.10	17.49	17.79	AEG Research
Warehouse	Cooling	Strategic Energy Management	sqft	New	0.05	3	\$0.07	3%	11%	\$0.04	0.29	0.25	AEG Research
Warehouse	Heating	Strategic Energy Management	sqft	New	0.36	3	\$0.07	3%	11%	\$0.04	2.09	1.73	AEG Research
Warehouse	Ventilation	Strategic Energy Management	sqft	New	0.00	3	\$0.07	3%	11%	\$0.04	0.13	0.13	AEG Research
Warehouse	Water Heating	Strategic Energy Management	sqft	New	0.00	3	\$0.07	3%	11%	\$0.04	0.04	0.05	AEG Research
Warehouse	Interior Lighting	Strategic Energy Management	sqft	New	0.06	3	\$0.07	3%	11%	\$0.04	1.71	1.99	AEG Research
Warehouse	Exterior Lighting	Strategic Energy Management	sqft	New	0.01	3	\$0.07	3%	11%	\$0.04	0.38	0.45	AEG Research
Warehouse	Refrigeration	Strategic Energy Management	sqft	New	0.00	3	\$0.07	3%	11%	\$0.04	0.09	0.08	AEG Research
Warehouse	Office Equipment	Strategic Energy Management	sqft	New	0.01	3	\$0.07	3%	11%	\$0.04	0.27	0.19	AEG Research
Warehouse	Cooling	Commissioning	sqft	New	0.07	3	\$0.29	11%	73%	\$0.13	3.06	2.68	AEG Research

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Warehouse	Heating	Commissioning	sqft	New	0.50	3	\$0.29	11%	73%	\$0.13	22.41	18.52	AEG Research
Warehouse	Ventilation	Commissioning	sqft	New	0.00	3	\$0.29	11%	73%	\$0.13	1.45	1.43	AEG Research
Warehouse	Water Heating	Commissioning	sqft	New	0.00	3	\$0.29	11%	73%	\$0.13	0.15	0.19	AEG Research
Warehouse	Interior Lighting	Commissioning	sqft	New	0.06	3	\$0.29	11%	73%	\$0.13	15.24	17.81	AEG Research
Warehouse	Exterior Lighting	Commissioning	sqft	New	0.01	3	\$0.29	11%	73%	\$0.13	3.39	4.02	AEG Research
Warehouse	Refrigeration	Commissioning	sqft	New	0.01	3	\$0.29	11%	73%	\$0.13	1.65	1.34	AEG Research
Warehouse	Cooling	Retrocommissioning	sqft	New	0.07	3	\$0.18	0%	0%	\$0.08	0.00	0.00	AEG Research
Warehouse	Heating	Retrocommissioning	sqft	New	0.50	3	\$0.18	0%	0%	\$0.08	0.00	0.00	AEG Research
Warehouse	Ventilation	Retrocommissioning	sqft	New	0.00	3	\$0.18	0%	0%	\$0.08	0.00	0.00	AEG Research
Warehouse	Water Heating	Retrocommissioning	sqft	New	0.00	3	\$0.18	0%	0%	\$0.08	0.00	0.00	AEG Research
Warehouse	Interior Lighting	Retrocommissioning	sqft	New	0.06	3	\$0.18	0%	0%	\$0.08	0.00	0.00	AEG Research
Warehouse	Exterior Lighting	Retrocommissioning	sqft	New	0.01	3	\$0.18	0%	0%	\$0.08	0.00	0.00	AEG Research
Warehouse	Refrigeration	Retrocommissioning	sqft	New	0.01	3	\$0.18	0%	0%	\$0.08	0.00	0.00	AEG Research
Warehouse	Interior Lighting	Fruit Storage - Lighting Controls	sqft	New	0.05	10	\$0.09	0%	0%	\$0.14	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse	Refrigeration	Fruit Storage Refrigeration Retrofit	sqft	New	0.02	10	\$1.09	0%	0%	\$6.30	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse	Refrigeration	Fruit Storage Refrigeration Tuneup	sqft	New	0.01	3	\$0.23	0%	0%	\$12.91	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse	Refrigeration	Fruit Storage Retrofit - CO2 Scrub	sqft	New	0.01	10	\$3.13	0%	0%	\$37.33	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse	Refrigeration	Fruit Storage Retrofit - Membrane	sqft	New	0.00	10	\$0.68	0%	0%	\$40.51	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse, Controlled Atm.	Cooling	Insulation - Ceiling	sqft roof	Existing	0.09	45	\$1.28	15%	35%	\$0.14	0.78	0.74	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Heating	Insulation - Ceiling	sqft roof	Existing	0.54	45	\$1.28	15%	35%	\$0.14	1.83	1.67	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Ventilation	Insulation - Ceiling	sqft roof	Existing	0.04	45	\$1.28	15%	35%	\$0.14	1.03	1.07	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Cooling	Insulation - Ducting	sqft duct	Existing	0.03	20	\$0.84	15%	50%	\$1.24	0.42	0.44	Building Energy Simulation Tool

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Warehouse, Controlled Atm.	Heating	Insulation - Ducting	sqft duct	Existing	0.02	20	\$0.84	15%	50%	\$1.24	0.12	0.12	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Ventilation	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.84	15%	50%	\$1.24	0.07	0.08	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Cooling	Building Shell - Cool Roofs	sqft roof	Existing	0.10	20	\$0.78	45%	50%	\$10.00	0.20	0.21	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Heating	Building Shell - Cool Roofs	sqft roof	Existing	-0.34	20	\$0.78	45%	50%	\$10.00	-0.28	-0.26	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Ventilation	Building Shell - Cool Roofs	sqft roof	Existing	-0.03	20	\$0.78	45%	50%	\$10.00	-0.16	-0.17	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Cooling	Insulation - Wall Cavity	sqft wall	Existing	0.01	45	\$0.78	15%	35%	\$0.01	0.01	0.01	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Heating	Insulation - Wall Cavity	sqft wall	Existing	4.01	45	\$0.78	15%	35%	\$0.01	2.65	2.34	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Ventilation	Insulation - Wall Cavity	sqft wall	Existing	0.32	45	\$0.78	15%	35%	\$0.01	1.42	1.44	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Cooling	HVAC - Duct Repair and Sealing	tonCool	Existing	5.68	18	\$0.57	15%	50%	\$0.00	0.18	0.17	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Heating	HVAC - Duct Repair and Sealing	tonCool	Existing	26.81	18	\$0.57	15%	50%	\$0.00	0.33	0.29	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Ventilation	HVAC - Duct Repair and Sealing	tonCool	Existing	2.14	18	\$0.57	15%	50%	\$0.00	0.18	0.18	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Cooling	Windows - High Efficiency Glazing	sqft window	Existing	2.31	30	\$35.93	48%	48%	\$0.09	0.00	0.00	7th Power Plan
Warehouse, Controlled Atm.	Heating	Windows - High Efficiency Glazing	sqft window	Existing	29.51	30	\$35.93	48%	48%	\$0.09	0.00	0.00	7th Power Plan
Warehouse, Controlled Atm.	Ventilation	Windows - High Efficiency Glazing	sqft window	Existing	1.42	30	\$35.93	48%	48%	\$0.09	0.00	0.00	7th Power Plan
Warehouse, Controlled Atm.	Cooling	Chiller - Chilled Water Reset	ChillCtrl	Existing	3,009.61	10	\$884.85	15%	75%	\$0.04	0.40	0.36	AEG-BEST
Warehouse, Controlled Atm.	Cooling	Chiller - Chilled Water Variable-Flow System	HP cool	Existing	117.88	15	\$332.55	15%	75%	\$0.28	2.15	2.01	AEG-BEST
Warehouse, Controlled Atm.	Cooling	Chiller - Variable Speed Fans	HP fan	Existing	443.35	15	\$208.36	15%	75%	\$0.05	0.82	0.74	New Jersey TRM
Warehouse, Controlled Atm.	Cooling	Water-Cooled Chiller - Condenser Water Reset	ChillCtrl	Existing	22,870.76	10	\$884.85	15%	75%	\$0.00	0.30	0.28	AEG-BEST
Warehouse, Controlled Atm.	Cooling	HVAC - Economizer	HP cool	Existing	56.67	10	\$168.42	18%	75%	\$0.35	2.24	2.14	AEG-BEST

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Warehouse, Controlled Atm.	Heating	Space Heating - Heat Recovery Ventilator	CFM	Existing	9.51	14	\$5.08	3%	75%	\$0.06	7.72	6.55	7th Power Plan
Warehouse, Controlled Atm.	Ventilation	Ventilation - ECM on VAV Boxes	sqft	Existing	0.14	18	\$0.25	15%	20%	\$0.15	0.79	0.81	7th Power Plan
Warehouse, Controlled Atm.	Ventilation	Ventilation - Variable Speed Control	sqft	Existing	0.01	15	\$181.39	13%	50%	\$1,240.92	0.53	0.59	AEG-BEST
Warehouse, Controlled Atm.	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.01	15	\$0.25	15%	75%	\$3.04	0.49	0.53	7th Power Plan
Warehouse, Controlled Atm.	Cooling	Destratification Fans (HVLS)	Strat Fan	Existing	1,285.96	15	\$7,270.90	15%	15%	\$0.05	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Heating	Destratification Fans (HVLS)	Strat Fan	Existing	15,141.96	15	\$7,270.90	15%	15%	\$0.05	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Cooling	RTU - Maintenance	tonCool	Existing	48.77	3	\$35.00	15%	45%	\$0.19	0.67	0.71	AEG Research
Warehouse, Controlled Atm.	Cooling	RTU - Advanced Controls	sqft	Existing	0.06	15	\$0.07	15%	45%	\$0.12	0.39	0.36	7th Power Plan
Warehouse, Controlled Atm.	Cooling	RTU - Evaporative Precooler	tonCool	Existing	103.80	15	\$681.62	15%	75%	\$0.60	2.63	2.57	AEG Research
Warehouse, Controlled Atm.	Cooling	Ductless Mini Split Heat Pump	tonCool	Existing	236.29	15	\$3,359.26	15%	25%	\$0.43	0.06	0.07	7th Power Plan
Warehouse, Controlled Atm.	Heating	Ductless Mini Split Heat Pump	tonCool	Existing	518.42	15	\$3,359.26	15%	25%	\$0.43	1.38	1.23	7th Power Plan
Warehouse, Controlled Atm.	Cooling	Thermostat - WiFi/Interactive	sqft	Existing	0.13	5	\$0.66	30%	40%	\$0.12	0.53	0.55	7th Power Plan
Warehouse, Controlled Atm.	Heating	Thermostat - WiFi/Interactive	sqft	Existing	0.86	5	\$0.66	30%	40%	\$0.12	1.45	1.36	7th Power Plan
Warehouse, Controlled Atm.	Ventilation	Thermostat - WiFi/Interactive	sqft	Existing	0.07	5	\$0.66	30%	40%	\$0.12	0.81	0.87	7th Power Plan
Warehouse, Controlled Atm.	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	Existing	83.29	10	\$8.35	25%	65%	\$0.01	0.21	0.31	Illinois TRM
Warehouse, Controlled Atm.	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	Existing	86.08	10	\$11.64	25%	65%	\$0.01	0.11	0.16	7th Power Plan
Warehouse, Controlled Atm.	Water Heating	Water Heater - High Efficiency Circulation Pump	WHUnits	Existing	65.69	15	\$36.75	15%	75%	\$0.03	0.18	0.25	Hawaii TRM
Warehouse, Controlled Atm.	Water Heating	Water Heater - Pipe Insulation	PipeFeet	Existing	268.12	15	\$14.88	16%	75%	\$0.00	0.41	0.58	AEG-BEST
Warehouse, Controlled Atm.	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	Existing	55.89	4	\$144.04	25%	65%	\$0.37	0.13	0.21	7th Power Plan

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Warehouse, Controlled Atm.	Water Heating	Water Heater - Thermostat Setback	WHunits	Existing	65.28	2	\$5.00	15%	75%	\$0.02	0.20	0.30	Illinois TRM
Warehouse, Controlled Atm.	Water Heating	Water Heater - Solar System	PipeFeet	Existing	925.28	20	\$215.28	1%	30%	\$0.01	0.69	0.99	AEG-BEST
Warehouse, Controlled Atm.	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.25	15	\$0.35	13%	38%	\$0.11	8.75	9.77	7th Power Plan
Warehouse, Controlled Atm.	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.34	15	\$0.58	13%	38%	\$0.13	11.65	13.37	7th Power Plan
Warehouse, Controlled Atm.	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	Existing	695.75	15	\$54.41	1%	3%	\$0.01	0.19	0.23	7th Power Plan
Warehouse, Controlled Atm.	Interior Lighting	Interior Lighting - Timeclocks and Timers	occ sens	Existing	0.00	8	\$111.67	7%	15%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Warehouse, Controlled Atm.	Interior Lighting	Interior Lighting - Skylights	1000 sqft	Existing	0.00	15	\$1,006.35	15%	30%	\$0.00	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	1000 sqft	Existing	36.81	16	\$1,807.69	5%	15%	\$3.46	0.38	0.51	7th Power Plan
Warehouse, Controlled Atm.	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	Existing	363.36	11	\$30.80	15%	50%	\$0.01	1.42	1.68	Illinois TRM
Warehouse, Controlled Atm.	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	ELtg Watts	Existing	2.01	8	\$0.63	15%	25%	\$0.03	1.88	2.38	7th Power Plan
Warehouse, Controlled Atm.	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	Existing	84.00	8	\$55.10	15%	25%	\$0.07	0.95	1.24	Pacific Gas and Electric Research
Warehouse, Controlled Atm.	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	Existing	100.17	7	\$3,400.00	15%	30%	\$3.82	1.67	2.27	AEG Research
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Anti-Sweat Heater	Fridge Feet	Existing	656.96	8	\$48.18	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	Existing	14,307.45	4	\$10.44	0%	0%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	Existing	94,841.50	16	\$165.20	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	Existing	2,937.20	15	\$335.85	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Strip Curtain	Walkin Door	Existing	1,624.46	2	\$10.41	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBtuh	Existing	48.00	15	\$45.43	0%	0%	\$0.10	0.00	0.00	Annual Energy Outlook, 2015
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	Existing	995.15	15	\$313.82	0%	0%	\$0.03	0.00	0.00	Annual Energy Outlook, 2015

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Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	Existing	63,702.48	10	\$506.05	0%	0%	\$0.00	0.00	0.00	Vermont TRM
Warehouse, Controlled Atm.	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	Existing	382.94	6	\$45.41	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Warehouse, Controlled Atm.	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	Existing	30.86	8	\$3.72	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Warehouse, Controlled Atm.	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	Existing	6,620.88	5	\$45.85	0%	0%	\$0.00	0.00	0.00	Illinois TRM
Warehouse, Controlled Atm.	Refrigeration	Grocery - ECMs for Display Cases	Fridge Case	Existing	1,586.87	16	\$165.20	2%	25%	\$0.01	0.26	0.24	7th Power Plan
Warehouse, Controlled Atm.	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	Existing	1,454.05	5	\$187.94	25%	75%	\$0.03	12.92	11.04	Illinois TRM
Warehouse, Controlled Atm.	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	Existing	1,141.28	18	\$8,526.67	25%	50%	\$0.59	1.32	1.37	7th Power Plan
Warehouse, Controlled Atm.	Office Equipment	Office Equipment - Smart Power Strips	Smart Strip	Existing	6.23	4	\$41.63	10%	50%	\$1.56	0.72	0.53	7th Power Plan
Warehouse, Controlled Atm.	Cooling	Lodging - Guest Room Controls	LodgUnit	Existing	107.44	15	\$260.00	0%	0%	\$10.00	0.00	0.00	AEG-BEST
Warehouse, Controlled Atm.	Heating	Lodging - Guest Room Controls	LodgUnit	Existing	-144.53	15	\$260.00	0%	0%	\$10.00	0.00	0.00	AEG-BEST
Warehouse, Controlled Atm.	Office Equipment	Data Center - Best Practice Measures	sqft	Existing	0.01	5	\$0.00	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse, Controlled Atm.	Cooling	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse, Controlled Atm.	Ventilation	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse, Controlled Atm.	Interior Lighting	Data Center - Commercially Available Measures	sqft	Existing	0.02	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse, Controlled Atm.	Office Equipment	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse, Controlled Atm.	Cooling	Data Center - Cutting Edge Measures	sqft	Existing	0.01	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse, Controlled Atm.	Office Equipment	Data Center - Cutting Edge Measures	sqft	Existing	0.00	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse, Controlled Atm.	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	Existing	3,890.83	18	\$4,092.80	0%	0%	\$0.08	0.00	0.00	7th Power Plan
Warehouse, Controlled Atm.	Miscellaneous	Pool Pump - Timer	perBldg	Existing	0.00	10	\$85.22	15%	75%	\$0.00	0.00	0.00	Ontario Power TRM

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Warehouse, Controlled Atm.	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	Existing	26,683.21	6	\$35.93	1%	3%	\$0.00	0.00	1.23	7th Power Plan
Warehouse, Controlled Atm.	Cooling	Advanced New Construction Designs	sqft	Existing	0.26	25	\$4.11	0%	0%	\$0.11	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Heating	Advanced New Construction Designs	sqft	Existing	1.90	25	\$4.11	0%	0%	\$0.11	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Ventilation	Advanced New Construction Designs	sqft	Existing	0.13	25	\$4.11	0%	0%	\$0.11	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Water Heating	Advanced New Construction Designs	sqft	Existing	0.07	25	\$4.11	0%	0%	\$0.11	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Interior Lighting	Advanced New Construction Designs	sqft	Existing	0.49	25	\$4.11	0%	0%	\$0.11	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Exterior Lighting	Advanced New Construction Designs	sqft	Existing	0.12	25	\$4.11	0%	0%	\$0.11	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Cooling	Strategic Energy Management	sqft	Existing	0.04	3	\$0.32	3%	11%	\$0.09	0.15	0.17	AEG Research
Warehouse, Controlled Atm.	Heating	Strategic Energy Management	sqft	Existing	0.29	3	\$0.32	3%	11%	\$0.09	0.42	0.39	AEG Research
Warehouse, Controlled Atm.	Ventilation	Strategic Energy Management	sqft	Existing	0.02	3	\$0.32	3%	11%	\$0.09	0.23	0.26	AEG Research
Warehouse, Controlled Atm.	Water Heating	Strategic Energy Management	sqft	Existing	0.01	3	\$0.32	3%	11%	\$0.09	0.04	0.06	AEG Research
Warehouse, Controlled Atm.	Interior Lighting	Strategic Energy Management	sqft	Existing	0.07	3	\$0.32	3%	11%	\$0.09	0.57	0.78	AEG Research
Warehouse, Controlled Atm.	Exterior Lighting	Strategic Energy Management	sqft	Existing	0.02	3	\$0.32	3%	11%	\$0.09	0.13	0.18	AEG Research
Warehouse, Controlled Atm.	Refrigeration	Strategic Energy Management	sqft	Existing	0.57	3	\$0.32	3%	11%	\$0.09	5.04	5.35	AEG Research
Warehouse, Controlled Atm.	Office Equipment	Strategic Energy Management	sqft	Existing	0.01	3	\$0.32	3%	11%	\$0.09	0.10	0.07	AEG Research
Warehouse, Controlled Atm.	Cooling	Commissioning	sqft	Existing	0.06	3	\$0.25	0%	0%	\$0.04	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Heating	Commissioning	sqft	Existing	0.40	3	\$0.25	0%	0%	\$0.04	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Ventilation	Commissioning	sqft	Existing	0.03	3	\$0.25	0%	0%	\$0.04	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Water Heating	Commissioning	sqft	Existing	0.00	3	\$0.25	0%	0%	\$0.04	0.00	0.00	AEG Research

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Warehouse, Controlled Atm.	Interior Lighting	Commissioning	sqft	Existing	0.08	3	\$0.25	0%	0%	\$0.04	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Exterior Lighting	Commissioning	sqft	Existing	0.02	3	\$0.25	0%	0%	\$0.04	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Refrigeration	Commissioning	sqft	Existing	1.31	3	\$0.25	0%	0%	\$0.04	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Cooling	Retrocommissioning	sqft	Existing	0.06	3	\$0.16	11%	73%	\$0.03	1.78	1.84	AEG Research
Warehouse, Controlled Atm.	Heating	Retrocommissioning	sqft	Existing	0.42	3	\$0.16	11%	73%	\$0.03	4.78	4.28	AEG Research
Warehouse, Controlled Atm.	Ventilation	Retrocommissioning	sqft	Existing	0.04	3	\$0.16	11%	73%	\$0.03	2.67	2.85	AEG Research
Warehouse, Controlled Atm.	Water Heating	Retrocommissioning	sqft	Existing	0.00	3	\$0.16	11%	73%	\$0.03	0.15	0.23	AEG Research
Warehouse, Controlled Atm.	Interior Lighting	Retrocommissioning	sqft	Existing	0.08	3	\$0.16	11%	73%	\$0.03	5.25	7.05	AEG Research
Warehouse, Controlled Atm.	Exterior Lighting	Retrocommissioning	sqft	Existing	0.02	3	\$0.16	11%	73%	\$0.03	1.23	1.63	AEG Research
Warehouse, Controlled Atm.	Refrigeration	Retrocommissioning	sqft	Existing	1.38	3	\$0.16	11%	73%	\$0.03	96.66	98.63	AEG Research
Warehouse, Controlled Atm.	Interior Lighting	Fruit Storage - Lighting Controls	sqft	Existing	0.06	10	\$0.09	25%	75%	\$0.14	3.02	4.01	Controlled Atmosphere Measure Inputs.xlsx
Warehouse, Controlled Atm.	Refrigeration	Fruit Storage Refrigeration Retrofit	sqft	Existing	4.39	10	\$1.09	0%	0%	\$0.03	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse, Controlled Atm.	Refrigeration	Fruit Storage Refrigeration Tuneup	sqft	Existing	1.10	3	\$0.23	0%	0%	\$0.07	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse, Controlled Atm.	Refrigeration	Fruit Storage Retrofit - CO2 Scrub	sqft	Existing	2.12	10	\$3.13	12%	25%	\$0.20	31.30	31.41	Controlled Atmosphere Measure Inputs.xlsx
Warehouse, Controlled Atm.	Refrigeration	Fruit Storage Retrofit - Membrane	sqft	Existing	0.42	10	\$0.68	2%	25%	\$0.22	10.84	11.01	Controlled Atmosphere Measure Inputs.xlsx
Warehouse, Controlled Atm.	Cooling	Insulation - Ceiling	sqft roof	New	0.00	45	\$1.28	15%	50%	\$0.17	0.00	0.00	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Heating	Insulation - Ceiling	sqft roof	New	0.54	45	\$1.28	15%	50%	\$0.17	0.75	0.69	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Ventilation	Insulation - Ceiling	sqft roof	New	0.03	45	\$1.28	15%	50%	\$0.17	0.35	0.34	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Cooling	Insulation - Ducting	sqft duct	New	0.04	20	\$0.84	15%	50%	\$0.94	0.15	0.14	Building Energy Simulation Tool

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Warehouse, Controlled Atm.	Heating	Insulation - Ducting	sqft duct	New	0.03	20	\$0.84	15%	50%	\$0.94	0.04	0.04	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Ventilation	Insulation - Ducting	sqft duct	New	0.00	20	\$0.84	15%	50%	\$0.94	0.02	0.02	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Cooling	Building Shell - Cool Roofs	sqft roof	New	0.08	20	\$0.78	45%	50%	\$10.00	0.05	0.04	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Heating	Building Shell - Cool Roofs	sqft roof	New	-0.35	20	\$0.78	45%	50%	\$10.00	-0.07	-0.06	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Ventilation	Building Shell - Cool Roofs	sqft roof	New	-0.02	20	\$0.78	45%	50%	\$10.00	-0.03	-0.03	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Cooling	Insulation - Wall Cavity	sqft wall	New	0.00	45	\$0.78	15%	50%	\$0.11	0.00	0.00	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Heating	Insulation - Wall Cavity	sqft wall	New	0.56	45	\$0.78	15%	50%	\$0.11	0.15	0.13	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Ventilation	Insulation - Wall Cavity	sqft wall	New	0.03	45	\$0.78	15%	50%	\$0.11	0.07	0.07	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Cooling	HVAC - Duct Repair and Sealing	tonCool	New	7.99	18	\$0.57	15%	50%	\$0.00	0.06	0.06	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Heating	HVAC - Duct Repair and Sealing	tonCool	New	22.02	18	\$0.57	15%	50%	\$0.00	0.06	0.05	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Ventilation	HVAC - Duct Repair and Sealing	tonCool	New	1.11	18	\$0.57	15%	50%	\$0.00	0.03	0.03	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Cooling	Windows - High Efficiency Glazing	sqft window	New	1.76	30	\$35.93	66%	66%	\$0.09	0.00	0.00	7th Power Plan
Warehouse, Controlled Atm.	Heating	Windows - High Efficiency Glazing	sqft window	New	29.70	30	\$35.93	66%	66%	\$0.09	0.00	0.00	7th Power Plan
Warehouse, Controlled Atm.	Ventilation	Windows - High Efficiency Glazing	sqft window	New	0.87	30	\$35.93	66%	66%	\$0.09	0.00	0.00	7th Power Plan
Warehouse, Controlled Atm.	Cooling	Chiller - Chilled Water Reset	ChillCtrl	New	2,280.40	10	\$884.85	15%	75%	\$0.04	0.03	0.03	AEG-BEST
Warehouse, Controlled Atm.	Cooling	Chiller - Chilled Water Variable-Flow System	HP cool	New	90.56	15	\$332.55	15%	75%	\$0.33	0.21	0.18	AEG-BEST
Warehouse, Controlled Atm.	Cooling	Chiller - Variable Speed Fans	HP fan	New	333.36	15	\$208.36	15%	75%	\$0.06	0.08	0.07	New Jersey TRM
Warehouse, Controlled Atm.	Cooling	Water-Cooled Chiller - Condenser Water Reset	ChillCtrl	New	21,426.86	10	\$884.85	15%	75%	\$0.00	0.03	0.02	AEG-BEST
Warehouse, Controlled Atm.	Cooling	HVAC - Economizer	HP cool	New	43.42	10	\$168.42	18%	75%	\$0.42	0.17	0.15	AEG-BEST

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Warehouse, Controlled Atm.	Heating	Space Heating - Heat Recovery Ventilator	CFM	New	9.34	14	\$5.08	6%	75%	\$0.06	0.82	0.69	7th Power Plan
Warehouse, Controlled Atm.	Ventilation	Ventilation - ECM on VAV Boxes	sqft	New	0.10	18	\$0.25	15%	20%	\$0.15	0.16	0.16	7th Power Plan
Warehouse, Controlled Atm.	Ventilation	Ventilation - Variable Speed Control	sqft	New	0.01	15	\$181.39	19%	50%	\$1,276.35	0.05	0.05	AEG-BEST
Warehouse, Controlled Atm.	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.25	15%	75%	\$3.12	0.06	0.06	7th Power Plan
Warehouse, Controlled Atm.	Cooling	Destratification Fans (HVLS)	Strat Fan	New	980.26	15	\$7,270.90	15%	15%	\$0.05	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Heating	Destratification Fans (HVLS)	Strat Fan	New	15,364.39	15	\$7,270.90	15%	15%	\$0.05	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Cooling	RTU - Maintenance	tonCool	New	54.91	3	\$35.00	15%	45%	\$0.17	0.02	0.01	AEG Research
Warehouse, Controlled Atm.	Cooling	RTU - Advanced Controls	sqft	New	0.06	15	\$0.07	15%	45%	\$0.10	0.09	0.08	7th Power Plan
Warehouse, Controlled Atm.	Cooling	RTU - Evaporative Precooler	tonCool	New	114.43	15	\$681.62	15%	75%	\$0.53	0.83	0.77	AEG Research
Warehouse, Controlled Atm.	Cooling	Ductless Mini Split Heat Pump	tonCool	New	287.51	15	\$3,359.26	15%	25%	\$0.40	0.01	0.01	7th Power Plan
Warehouse, Controlled Atm.	Heating	Ductless Mini Split Heat Pump	tonCool	New	539.00	15	\$3,359.26	15%	25%	\$0.40	0.22	0.19	7th Power Plan
Warehouse, Controlled Atm.	Cooling	Thermostat - WiFi/Interactive	sqft	New	0.11	5	\$0.66	30%	40%	\$0.13	0.01	0.01	7th Power Plan
Warehouse, Controlled Atm.	Heating	Thermostat - WiFi/Interactive	sqft	New	0.90	5	\$0.66	30%	40%	\$0.13	0.04	0.04	7th Power Plan
Warehouse, Controlled Atm.	Ventilation	Thermostat - WiFi/Interactive	sqft	New	0.05	5	\$0.66	30%	40%	\$0.13	0.02	0.02	7th Power Plan
Warehouse, Controlled Atm.	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	New	55.36	10	\$8.35	25%	65%	\$0.01	0.02	0.02	Illinois TRM
Warehouse, Controlled Atm.	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	New	57.74	10	\$11.64	25%	65%	\$0.01	0.01	0.01	7th Power Plan
Warehouse, Controlled Atm.	Water Heating	Water Heater - High Efficiency Circulation Pump	WHUnits	New	44.27	15	\$36.75	15%	75%	\$0.03	0.04	0.04	Hawaii TRM
Warehouse, Controlled Atm.	Water Heating	Water Heater - Pipe Insulation	PipeFeet	New	172.26	15	\$14.88	1%	75%	\$0.00	0.06	0.07	AEG-BEST
Warehouse, Controlled Atm.	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	New	38.29	4	\$144.04	25%	65%	\$0.37	0.01	0.01	7th Power Plan

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Warehouse, Controlled Atm.	Water Heating	Water Heater - Thermostat Setback	WHunits	New	44.13	2	\$5.00	15%	75%	\$0.02	0.00	0.00	Illinois TRM
Warehouse, Controlled Atm.	Water Heating	Water Heater - Solar System	PipeFeet	New	600.93	20	\$215.28	1%	30%	\$0.01	0.08	0.10	AEG-BEST
Warehouse, Controlled Atm.	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.19	15	\$0.35	13%	38%	\$0.11	3.36	3.50	7th Power Plan
Warehouse, Controlled Atm.	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.26	15	\$0.58	13%	38%	\$0.13	4.52	4.73	7th Power Plan
Warehouse, Controlled Atm.	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	New	536.31	15	\$54.41	1%	3%	\$0.01	0.02	0.02	7th Power Plan
Warehouse, Controlled Atm.	Interior Lighting	Interior Lighting - Timeclocks and Timers	occ sens	New	0.00	8	\$111.67	7%	15%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Warehouse, Controlled Atm.	Interior Lighting	Interior Lighting - Skylights	1000 sqft	New	0.00	15	\$1,006.35	18%	33%	\$0.00	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	1000 sqft	New	26.49	16	\$1,807.69	5%	15%	\$3.64	0.04	0.05	7th Power Plan
Warehouse, Controlled Atm.	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	New	265.77	11	\$30.80	15%	50%	\$0.01	0.12	0.13	Illinois TRM
Warehouse, Controlled Atm.	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	ELtg Watts	New	1.41	8	\$0.63	15%	25%	\$0.03	0.13	0.15	7th Power Plan
Warehouse, Controlled Atm.	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fict	New	60.15	8	\$55.10	15%	25%	\$0.07	0.07	0.08	Pacific Gas and Electric Research
Warehouse, Controlled Atm.	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fict	New	73.94	7	\$3,400.00	15%	30%	\$3.84	0.11	0.12	AEG Research
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Anti-Sweat Heater	Fridge Feet	New	445.97	8	\$48.18	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	New	12,150.92	4	\$10.44	0%	0%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	New	80,622.38	16	\$165.20	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	New	2,540.87	15	\$335.85	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Strip Curtain	Walkin Door	New	1,381.21	2	\$10.41	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBtuh	New	41.53	15	\$45.43	0%	0%	\$0.12	0.00	0.00	Annual Energy Outlook, 2015
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	New	860.87	15	\$313.82	0%	0%	\$0.04	0.00	0.00	Annual Energy Outlook, 2015

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Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	New	54,151.88	10	\$506.05	0%	0%	\$0.00	0.00	0.00	Vermont TRM
Warehouse, Controlled Atm.	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	New	342.05	6	\$45.41	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Warehouse, Controlled Atm.	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	New	27.56	8	\$3.72	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Warehouse, Controlled Atm.	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	New	6,112.97	5	\$45.85	0%	0%	\$0.00	0.00	0.00	Illinois TRM
Warehouse, Controlled Atm.	Refrigeration	Grocery - ECMs for Display Cases	Fridge Case	New	1,417.31	16	\$165.20	2%	25%	\$0.01	0.04	0.03	7th Power Plan
Warehouse, Controlled Atm.	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	New	1,390.33	5	\$187.94	25%	75%	\$0.03	0.68	0.55	Illinois TRM
Warehouse, Controlled Atm.	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	New	810.19	18	\$8,526.67	25%	50%	\$0.61	0.28	0.28	7th Power Plan
Warehouse, Controlled Atm.	Office Equipment	Office Equipment - Smart Power Strips	Smart Strip	New	7.04	4	\$41.63	10%	50%	\$1.37	0.03	0.02	7th Power Plan
Warehouse, Controlled Atm.	Cooling	Lodging - Guest Room Controls	LodgUnit	New	150.16	15	\$260.00	0%	0%	\$2.06	0.00	0.00	AEG-BEST
Warehouse, Controlled Atm.	Heating	Lodging - Guest Room Controls	LodgUnit	New	-163.69	15	\$260.00	0%	0%	\$2.06	0.00	0.00	AEG-BEST
Warehouse, Controlled Atm.	Office Equipment	Data Center - Best Practice Measures	sqft	New	0.01	5	\$0.00	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse, Controlled Atm.	Cooling	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse, Controlled Atm.	Ventilation	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse, Controlled Atm.	Interior Lighting	Data Center - Commercially Available Measures	sqft	New	0.01	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse, Controlled Atm.	Office Equipment	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse, Controlled Atm.	Cooling	Data Center - Cutting Edge Measures	sqft	New	0.01	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse, Controlled Atm.	Office Equipment	Data Center - Cutting Edge Measures	sqft	New	0.00	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse, Controlled Atm.	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	New	2,767.91	18	\$4,092.80	0%	0%	\$0.09	0.00	0.00	7th Power Plan
Warehouse, Controlled Atm.	Miscellaneous	Pool Pump - Timer	perBldg	New	0.00	10	\$85.22	15%	75%	\$0.00	0.00	0.00	Ontario Power TRM

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Warehouse, Controlled Atm.	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	New	26,683.21	6	\$35.93	1%	3%	\$0.00	0.00	0.05	7th Power Plan
Warehouse, Controlled Atm.	Cooling	Advanced New Construction Designs	sqft	New	0.25	25	\$4.11	10%	15%	\$0.11	0.15	0.14	AEG Research
Warehouse, Controlled Atm.	Heating	Advanced New Construction Designs	sqft	New	2.01	25	\$4.11	10%	15%	\$0.11	0.45	0.42	AEG Research
Warehouse, Controlled Atm.	Ventilation	Advanced New Construction Designs	sqft	New	0.10	25	\$4.11	10%	15%	\$0.11	0.21	0.21	AEG Research
Warehouse, Controlled Atm.	Water Heating	Advanced New Construction Designs	sqft	New	0.05	25	\$4.11	10%	15%	\$0.11	0.05	0.05	AEG Research
Warehouse, Controlled Atm.	Interior Lighting	Advanced New Construction Designs	sqft	New	0.34	25	\$4.11	10%	15%	\$0.11	0.55	0.57	AEG Research
Warehouse, Controlled Atm.	Exterior Lighting	Advanced New Construction Designs	sqft	New	0.07	25	\$4.11	10%	15%	\$0.11	0.13	0.13	AEG Research
Warehouse, Controlled Atm.	Cooling	Strategic Energy Management	sqft	New	0.04	3	\$0.34	3%	11%	\$0.10	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Heating	Strategic Energy Management	sqft	New	0.31	3	\$0.34	3%	11%	\$0.10	0.01	0.01	AEG Research
Warehouse, Controlled Atm.	Ventilation	Strategic Energy Management	sqft	New	0.02	3	\$0.34	3%	11%	\$0.10	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Water Heating	Strategic Energy Management	sqft	New	0.01	3	\$0.34	3%	11%	\$0.10	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Interior Lighting	Strategic Energy Management	sqft	New	0.05	3	\$0.34	3%	11%	\$0.10	0.01	0.01	AEG Research
Warehouse, Controlled Atm.	Exterior Lighting	Strategic Energy Management	sqft	New	0.01	3	\$0.34	3%	11%	\$0.10	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Refrigeration	Strategic Energy Management	sqft	New	0.63	3	\$0.34	3%	11%	\$0.10	0.13	0.11	AEG Research
Warehouse, Controlled Atm.	Office Equipment	Strategic Energy Management	sqft	New	0.01	3	\$0.34	3%	11%	\$0.10	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Cooling	Commissioning	sqft	New	0.05	3	\$0.23	11%	73%	\$0.04	0.03	0.03	AEG Research
Warehouse, Controlled Atm.	Heating	Commissioning	sqft	New	0.43	3	\$0.23	11%	73%	\$0.04	0.11	0.09	AEG Research
Warehouse, Controlled Atm.	Ventilation	Commissioning	sqft	New	0.02	3	\$0.23	11%	73%	\$0.04	0.05	0.05	AEG Research
Warehouse, Controlled Atm.	Water Heating	Commissioning	sqft	New	0.00	3	\$0.23	11%	73%	\$0.04	0.00	0.00	AEG Research

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Warehouse, Controlled Atm.	Interior Lighting	Commissioning	sqft	New	0.06	3	\$0.23	11%	73%	\$0.04	0.11	0.13	AEG Research
Warehouse, Controlled Atm.	Exterior Lighting	Commissioning	sqft	New	0.01	3	\$0.23	11%	73%	\$0.04	0.03	0.03	AEG Research
Warehouse, Controlled Atm.	Refrigeration	Commissioning	sqft	New	1.46	3	\$0.23	11%	73%	\$0.04	2.42	1.95	AEG Research
Warehouse, Controlled Atm.	Cooling	Retrocommissioning	sqft	New	0.05	3	\$0.15	0%	0%	\$0.02	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Heating	Retrocommissioning	sqft	New	0.43	3	\$0.15	0%	0%	\$0.02	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Ventilation	Retrocommissioning	sqft	New	0.02	3	\$0.15	0%	0%	\$0.02	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Water Heating	Retrocommissioning	sqft	New	0.00	3	\$0.15	0%	0%	\$0.02	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Interior Lighting	Retrocommissioning	sqft	New	0.06	3	\$0.15	0%	0%	\$0.02	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Exterior Lighting	Retrocommissioning	sqft	New	0.01	3	\$0.15	0%	0%	\$0.02	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Refrigeration	Retrocommissioning	sqft	New	1.46	3	\$0.15	0%	0%	\$0.02	0.00	0.00	AEG Research
Warehouse, Controlled Atm.	Interior Lighting	Fruit Storage - Lighting Controls	sqft	New	0.04	10	\$0.09	25%	75%	\$0.14	0.26	0.29	Controlled Atmosphere Measure Inputs.xlsx
Warehouse, Controlled Atm.	Refrigeration	Fruit Storage Refrigeration Retrofit	sqft	New	4.55	10	\$1.09	0%	0%	\$0.03	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse, Controlled Atm.	Refrigeration	Fruit Storage Refrigeration Tuneup	sqft	New	1.17	3	\$0.23	0%	0%	\$0.07	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse, Controlled Atm.	Refrigeration	Fruit Storage Retrofit - CO2 Scrub	sqft	New	2.21	10	\$3.13	12%	25%	\$0.19	3.28	2.75	Controlled Atmosphere Measure Inputs.xlsx
Warehouse, Controlled Atm.	Refrigeration	Fruit Storage Retrofit - Membrane	sqft	New	0.44	10	\$0.68	2%	25%	\$0.21	1.15	0.97	Controlled Atmosphere Measure Inputs.xlsx
Data Center	Cooling	Insulation - Ceiling	sqft roof	Existing	2.83	45	\$1.28	15%	35%	\$0.02	0.09	0.09	Building Energy Simulation Tool
Data Center	Heating	Insulation - Ceiling	sqft roof	Existing	0.27	45	\$1.28	15%	35%	\$0.02	0.00	0.00	Building Energy Simulation Tool
Data Center	Ventilation	Insulation - Ceiling	sqft roof	Existing	1.71	45	\$1.28	15%	35%	\$0.02	0.06	0.06	Building Energy Simulation Tool
Data Center	Cooling	Insulation - Ducting	sqft duct	Existing	1.03	20	\$0.84	15%	35%	\$0.06	0.03	0.03	Building Energy Simulation Tool

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Data Center	Heating	Insulation - Ducting	sqft duct	Existing	0.01	20	\$0.84	15%	35%	\$0.06	0.00	0.00	Building Energy Simulation Tool
Data Center	Ventilation	Insulation - Ducting	sqft duct	Existing	0.07	20	\$0.84	15%	35%	\$0.06	0.00	0.00	Building Energy Simulation Tool
Data Center	Cooling	Building Shell - Cool Roofs	sqft roof	Existing	3.88	20	\$0.78	45%	50%	\$0.03	0.03	0.03	Building Energy Simulation Tool
Data Center	Heating	Building Shell - Cool Roofs	sqft roof	Existing	-0.18	20	\$0.78	45%	50%	\$0.03	0.00	0.00	Building Energy Simulation Tool
Data Center	Ventilation	Building Shell - Cool Roofs	sqft roof	Existing	-1.18	20	\$0.78	45%	50%	\$0.03	-0.01	-0.01	Building Energy Simulation Tool
Data Center	Cooling	Insulation - Wall Cavity	sqft wall	Existing	0.23	45	\$0.78	15%	35%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Data Center	Heating	Insulation - Wall Cavity	sqft wall	Existing	1.93	45	\$0.78	15%	35%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Data Center	Ventilation	Insulation - Wall Cavity	sqft wall	Existing	12.39	45	\$0.78	15%	35%	\$0.00	0.08	0.08	Building Energy Simulation Tool
Data Center	Cooling	HVAC - Duct Repair and Sealing	tonCool	Existing	36.51	18	\$0.57	15%	50%	\$0.00	0.02	0.02	Building Energy Simulation Tool
Data Center	Heating	HVAC - Duct Repair and Sealing	tonCool	Existing	2.58	18	\$0.57	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Data Center	Ventilation	HVAC - Duct Repair and Sealing	tonCool	Existing	16.59	18	\$0.57	15%	50%	\$0.00	0.01	0.01	Building Energy Simulation Tool
Data Center	Cooling	Windows - High Efficiency Glazing	sqft window	Existing	73.89	30	\$35.93	48%	48%	\$0.02	0.00	0.00	7th Power Plan
Data Center	Heating	Windows - High Efficiency Glazing	sqft window	Existing	14.79	30	\$35.93	48%	48%	\$0.02	0.00	0.00	7th Power Plan
Data Center	Ventilation	Windows - High Efficiency Glazing	sqft window	Existing	54.00	30	\$35.93	48%	48%	\$0.02	0.00	0.00	7th Power Plan
Data Center	Cooling	Chiller - Chilled Water Reset	ChillCtrl	Existing	19,452.76	10	\$884.85	15%	75%	\$0.01	0.04	0.03	AEG-BEST
Data Center	Cooling	Chiller - Chilled Water Variable-Flow System	HP cool	Existing	766.29	15	\$332.55	15%	75%	\$0.04	0.19	0.18	AEG-BEST
Data Center	Cooling	Chiller - Variable Speed Fans	HP fan	Existing	2,864.19	15	\$208.36	15%	75%	\$0.01	0.07	0.07	New Jersey TRM
Data Center	Cooling	Water-Cooled Chiller - Condenser Water Reset	ChillCtrl	Existing	77,592.56	10	\$884.85	15%	75%	\$0.00	0.05	0.05	AEG-BEST
Data Center	Cooling	HVAC - Economizer	HP cool	Existing	370.79	10	\$168.42	18%	75%	\$0.05	0.27	0.26	AEG-BEST

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Data Center	Heating	Space Heating - Heat Recovery Ventilator	CFM	Existing	0.09	14	\$5.08	3%	75%	\$6.24	0.01	0.01	7th Power Plan
Data Center	Ventilation	Ventilation - ECM on VAV Boxes	sqft	Existing	5.23	18	\$0.25	15%	20%	\$0.00	0.05	0.05	7th Power Plan
Data Center	Ventilation	Ventilation - Variable Speed Control	sqft	Existing	0.46	15	\$181.39	13%	50%	\$32.26	0.03	0.03	AEG-BEST
Data Center	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.27	15	\$0.25	15%	75%	\$0.08	0.03	0.03	7th Power Plan
Data Center	Cooling	Destratification Fans (HVLS)	Strat Fan	Existing	40,971.75	15	\$7,270.90	15%	15%	\$0.02	0.00	0.00	AEG Research
Data Center	Heating	Destratification Fans (HVLS)	Strat Fan	Existing	7,586.20	15	\$7,270.90	15%	15%	\$0.02	0.00	0.00	AEG Research
Data Center	Cooling	RTU - Maintenance	tonCool	Existing	162.94	3	\$35.00	15%	45%	\$0.06	0.05	0.05	AEG Research
Data Center	Cooling	RTU - Advanced Controls	sqft	Existing	0.92	15	\$0.07	15%	45%	\$0.01	0.03	0.03	7th Power Plan
Data Center	Cooling	RTU - Evaporative Precooler	tonCool	Existing	331.67	15	\$681.62	15%	75%	\$0.19	0.19	0.19	AEG Research
Data Center	Cooling	Ductless Mini Split Heat Pump	tonCool	Existing	757.05	15	\$3,359.26	15%	25%	\$0.37	0.00	0.00	7th Power Plan
Data Center	Heating	Ductless Mini Split Heat Pump	tonCool	Existing	65.01	15	\$3,359.26	15%	25%	\$0.37	0.00	0.00	7th Power Plan
Data Center	Cooling	Thermostat - WiFi/Interactive	sqft	Existing	4.45	5	\$0.66	30%	40%	\$0.02	0.07	0.07	7th Power Plan
Data Center	Heating	Thermostat - WiFi/Interactive	sqft	Existing	0.45	5	\$0.66	30%	40%	\$0.02	0.00	0.00	7th Power Plan
Data Center	Ventilation	Thermostat - WiFi/Interactive	sqft	Existing	2.86	5	\$0.66	30%	40%	\$0.02	0.05	0.05	7th Power Plan
Data Center	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	Existing	143.66	10	\$8.35	25%	65%	\$0.00	0.00	0.00	Illinois TRM
Data Center	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	Existing	148.48	10	\$11.64	25%	65%	\$0.01	0.00	0.00	7th Power Plan
Data Center	Water Heating	Water Heater - High Efficiency Circulation Pump	WHUnits	Existing	65.73	15	\$36.75	15%	75%	\$0.03	0.00	0.00	Hawaii TRM
Data Center	Water Heating	Water Heater - Pipe Insulation	PipeFeet	Existing	462.19	15	\$14.88	16%	75%	\$0.00	0.00	0.00	AEG-BEST
Data Center	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	Existing	97.36	4	\$144.04	25%	65%	\$0.21	0.00	0.00	7th Power Plan
Data Center	Water Heating	Water Heater - Thermostat Setback	WHUnits	Existing	65.33	2	\$5.00	15%	75%	\$0.02	0.00	0.00	Illinois TRM
Data Center	Water Heating	Water Heater - Solar System	PipeFeet	Existing	1,595.34	20	\$215.28	1%	30%	\$0.01	0.00	0.00	AEG-BEST

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Data Center	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.85	15	\$0.35	3%	23%	\$0.03	0.04	0.04	7th Power Plan
Data Center	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	1.17	15	\$0.58	3%	23%	\$0.04	0.05	0.05	7th Power Plan
Data Center	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	Existing	2,465.80	15	\$54.41	1%	3%	\$0.00	0.00	0.00	7th Power Plan
Data Center	Interior Lighting	Interior Lighting - Timeclocks and Timers	occ sens	Existing	0.00	8	\$111.67	7%	15%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Data Center	Interior Lighting	Interior Lighting - Skylights	1000 sqft	Existing	0.00	15	\$1,006.35	15%	25%	\$0.00	0.00	0.00	AEG Research
Data Center	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	1000 sqft	Existing	535.63	16	\$1,807.69	5%	15%	\$0.25	0.01	0.01	7th Power Plan
Data Center	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	Existing	5,100.59	11	\$30.80	15%	50%	\$0.00	0.03	0.04	Illinois TRM
Data Center	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	ELtg Watts	Existing	2.20	8	\$0.63	15%	25%	\$0.03	0.01	0.01	7th Power Plan
Data Center	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	Existing	77.25	8	\$55.10	15%	25%	\$0.08	0.00	0.01	Pacific Gas and Electric Research
Data Center	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	Existing	94.75	7	\$3,400.00	15%	30%	\$4.17	0.01	0.01	AEG Research
Data Center	Refrigeration	Refrigeration - Anti-Sweat Heater	Fridge Feet	Existing	23.22	8	\$48.18	0%	0%	\$0.32	0.00	0.00	7th Power Plan
Data Center	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	Existing	33.40	4	\$10.44	0%	0%	\$0.08	0.00	0.00	Michigan Energy Measures Database
Data Center	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	Existing	219.86	16	\$165.20	0%	0%	\$0.08	0.00	0.00	7th Power Plan
Data Center	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	Existing	27.50	15	\$335.85	0%	0%	\$1.31	0.00	0.00	7th Power Plan
Data Center	Refrigeration	Refrigeration - Strip Curtain	WalkIn Door	Existing	34.44	2	\$10.41	0%	0%	\$0.14	0.00	0.00	7th Power Plan
Data Center	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	Existing	0.45	15	\$45.43	0%	0%	\$10.84	0.00	0.00	Annual Energy Outlook, 2015
Data Center	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	Existing	9.32	15	\$313.82	0%	0%	\$3.61	0.00	0.00	Annual Energy Outlook, 2015
Data Center	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	Existing	146.06	10	\$506.05	0%	0%	\$0.46	0.00	0.00	Vermont TRM
Data Center	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	Existing	13.72	6	\$45.41	0%	0%	\$0.63	0.00	0.00	7th Power Plan

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Data Center	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	Existing	1.11	8	\$3.72	0%	0%	\$0.53	0.00	0.00	7th Power Plan
Data Center	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	Existing	233.85	5	\$45.85	0%	0%	\$0.04	0.00	0.00	Illinois TRM
Data Center	Refrigeration	Grocery - ECMs for Display Cases	Fridge Case	Existing	56.83	16	\$165.20	0%	0%	\$0.30	0.00	0.00	7th Power Plan
Data Center	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	Existing	1,447.18	5	\$187.94	25%	75%	\$0.03	0.00	0.00	Illinois TRM
Data Center	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	Existing	44,341.50	18	\$8,526.67	25%	50%	\$0.02	0.08	0.08	7th Power Plan
Data Center	Office Equipment	Office Equipment - Smart Power Strips	Smart Strip	Existing	3,026.93	4	\$41.63	10%	50%	\$0.00	0.56	0.37	7th Power Plan
Data Center	Cooling	Lodging - Guest Room Controls	LodgUnit	Existing	2,100.83	15	\$260.00	0%	0%	\$0.01	0.00	0.00	AEG-BEST
Data Center	Heating	Lodging - Guest Room Controls	LodgUnit	Existing	-98.51	15	\$260.00	0%	0%	\$0.01	0.00	0.00	AEG-BEST
Data Center	Office Equipment	Data Center - Best Practice Measures	sqft	Existing	12.47	5	\$0.91	20%	75%	\$0.01	1.64	1.48	com-datacenters-7p_v5p.xlsx
Data Center	Cooling	Data Center - Commercially Available Measures	sqft	Existing	0.09	8	\$2.27	10%	35%	\$0.10	0.00	0.00	com-datacenters-7p_v5p.xlsx
Data Center	Ventilation	Data Center - Commercially Available Measures	sqft	Existing	0.06	8	\$2.27	10%	35%	\$0.10	0.00	0.00	com-datacenters-7p_v5p.xlsx
Data Center	Interior Lighting	Data Center - Commercially Available Measures	sqft	Existing	0.06	8	\$2.27	10%	35%	\$0.10	0.00	0.00	com-datacenters-7p_v5p.xlsx
Data Center	Office Equipment	Data Center - Commercially Available Measures	sqft	Existing	2.75	8	\$2.27	10%	35%	\$0.10	0.16	0.15	com-datacenters-7p_v5p.xlsx
Data Center	Cooling	Data Center - Cutting Edge Measures	sqft	Existing	0.45	6	\$0.05	10%	15%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Data Center	Office Equipment	Data Center - Cutting Edge Measures	sqft	Existing	1.00	6	\$0.05	10%	15%	\$0.01	0.01	0.01	com-datacenters-7p_v5p.xlsx
Data Center	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	Existing	151,812.95	18	\$4,092.80	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Data Center	Miscellaneous	Pool Pump - Timer	perBldg	Existing	0.00	10	\$85.22	15%	75%	\$0.00	0.00	0.00	Ontario Power TRM
Data Center	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	Existing	261,025.83	6	\$35.93	1%	3%	\$0.00	0.00	0.02	7th Power Plan
Data Center	Cooling	Advanced New Construction Designs	sqft	Existing	8.31	25	\$4.11	0%	0%	\$0.02	0.00	0.00	AEG Research

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Data Center	Heating	Advanced New Construction Designs	sqft	Existing	0.95	25	\$4.11	0%	0%	\$0.02	0.00	0.00	AEG Research
Data Center	Ventilation	Advanced New Construction Designs	sqft	Existing	5.07	25	\$4.11	0%	0%	\$0.02	0.00	0.00	AEG Research
Data Center	Water Heating	Advanced New Construction Designs	sqft	Existing	0.12	25	\$4.11	0%	0%	\$0.02	0.00	0.00	AEG Research
Data Center	Interior Lighting	Advanced New Construction Designs	sqft	Existing	1.90	25	\$4.11	0%	0%	\$0.02	0.00	0.00	AEG Research
Data Center	Exterior Lighting	Advanced New Construction Designs	sqft	Existing	0.36	25	\$4.11	0%	0%	\$0.02	0.00	0.00	AEG Research
Data Center	Cooling	Strategic Energy Management	sqft	Existing	1.42	3	\$9.42	0%	0%	\$0.39	0.00	0.00	AEG Research
Data Center	Heating	Strategic Energy Management	sqft	Existing	0.14	3	\$9.42	0%	0%	\$0.39	0.00	0.00	AEG Research
Data Center	Ventilation	Strategic Energy Management	sqft	Existing	0.94	3	\$9.42	0%	0%	\$0.39	0.00	0.00	AEG Research
Data Center	Water Heating	Strategic Energy Management	sqft	Existing	0.02	3	\$9.42	0%	0%	\$0.39	0.00	0.00	AEG Research
Data Center	Interior Lighting	Strategic Energy Management	sqft	Existing	0.25	3	\$9.42	0%	0%	\$0.39	0.00	0.00	AEG Research
Data Center	Exterior Lighting	Strategic Energy Management	sqft	Existing	0.05	3	\$9.42	0%	0%	\$0.39	0.00	0.00	AEG Research
Data Center	Refrigeration	Strategic Energy Management	sqft	Existing	0.00	3	\$9.42	0%	0%	\$0.39	0.00	0.00	AEG Research
Data Center	Office Equipment	Strategic Energy Management	sqft	Existing	3.66	3	\$9.42	0%	0%	\$0.39	0.00	0.00	AEG Research
Data Center	Cooling	Commissioning	sqft	Existing	1.96	3	\$11.85	0%	0%	\$0.82	0.00	0.00	AEG Research
Data Center	Heating	Commissioning	sqft	Existing	0.19	3	\$11.85	0%	0%	\$0.82	0.00	0.00	AEG Research
Data Center	Ventilation	Commissioning	sqft	Existing	1.29	3	\$11.85	0%	0%	\$0.82	0.00	0.00	AEG Research
Data Center	Water Heating	Commissioning	sqft	Existing	0.01	3	\$11.85	0%	0%	\$0.82	0.00	0.00	AEG Research
Data Center	Interior Lighting	Commissioning	sqft	Existing	0.29	3	\$11.85	0%	0%	\$0.82	0.00	0.00	AEG Research
Data Center	Exterior Lighting	Commissioning	sqft	Existing	0.05	3	\$11.85	0%	0%	\$0.82	0.00	0.00	AEG Research
Data Center	Refrigeration	Commissioning	sqft	Existing	0.00	3	\$11.85	0%	0%	\$0.82	0.00	0.00	AEG Research
Data Center	Cooling	Retrocommissioning	sqft	Existing	2.03	3	\$7.52	2%	65%	\$0.52	0.22	0.22	AEG Research
Data Center	Heating	Retrocommissioning	sqft	Existing	0.20	3	\$7.52	2%	65%	\$0.52	0.01	0.01	AEG Research

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Data Center	Ventilation	Retrocommissioning	sqft	Existing	1.34	3	\$7.52	2%	65%	\$0.52	0.16	0.17	AEG Research
Data Center	Water Heating	Retrocommissioning	sqft	Existing	0.01	3	\$7.52	2%	65%	\$0.52	0.00	0.00	AEG Research
Data Center	Interior Lighting	Retrocommissioning	sqft	Existing	0.30	3	\$7.52	2%	65%	\$0.52	0.03	0.04	AEG Research
Data Center	Exterior Lighting	Retrocommissioning	sqft	Existing	0.05	3	\$7.52	2%	65%	\$0.52	0.01	0.01	AEG Research
Data Center	Refrigeration	Retrocommissioning	sqft	Existing	0.00	3	\$7.52	2%	65%	\$0.52	0.00	0.00	AEG Research
Data Center	Interior Lighting	Fruit Storage - Lighting Controls	sqft	Existing	0.21	10	\$0.09	0%	0%	\$0.04	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Data Center	Refrigeration	Fruit Storage Refrigeration Retrofit	sqft	Existing	0.00	10	\$1.09	0%	0%	\$28.96	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Data Center	Refrigeration	Fruit Storage Refrigeration Tuneup	sqft	Existing	0.00	3	\$0.23	0%	0%	\$59.38	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Data Center	Refrigeration	Fruit Storage Retrofit - CO2 Scrub	sqft	Existing	0.00	10	\$3.13	0%	0%	\$171.71	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Data Center	Refrigeration	Fruit Storage Retrofit - Membrane	sqft	Existing	0.00	10	\$0.68	0%	0%	\$186.33	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Data Center	Cooling	Insulation - Ceiling	sqft roof	New	0.00	45	\$1.28	15%	50%	\$0.05	0.00	0.00	Building Energy Simulation Tool
Data Center	Heating	Insulation - Ceiling	sqft roof	New	0.26	45	\$1.28	15%	50%	\$0.05	0.00	0.00	Building Energy Simulation Tool
Data Center	Ventilation	Insulation - Ceiling	sqft roof	New	1.09	45	\$1.28	15%	50%	\$0.05	0.02	0.02	Building Energy Simulation Tool
Data Center	Cooling	Insulation - Ducting	sqft duct	New	1.35	20	\$0.84	15%	50%	\$0.05	0.02	0.02	Building Energy Simulation Tool
Data Center	Heating	Insulation - Ducting	sqft duct	New	0.01	20	\$0.84	15%	50%	\$0.05	0.00	0.00	Building Energy Simulation Tool
Data Center	Ventilation	Insulation - Ducting	sqft duct	New	0.06	20	\$0.84	15%	50%	\$0.05	0.00	0.00	Building Energy Simulation Tool
Data Center	Cooling	Building Shell - Cool Roofs	sqft roof	New	2.95	20	\$0.78	45%	50%	\$0.04	0.01	0.01	Building Energy Simulation Tool
Data Center	Heating	Building Shell - Cool Roofs	sqft roof	New	-0.17	20	\$0.78	45%	50%	\$0.04	0.00	0.00	Building Energy Simulation Tool
Data Center	Ventilation	Building Shell - Cool Roofs	sqft roof	New	-0.74	20	\$0.78	45%	50%	\$0.04	0.00	0.00	Building Energy Simulation Tool
Data Center	Cooling	Insulation - Wall Cavity	sqft wall	New	-0.16	45	\$0.78	15%	50%	\$0.03	0.00	0.00	Building Energy Simulation Tool

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Data Center	Heating	Insulation - Wall Cavity	sqft wall	New	0.26	45	\$0.78	15%	50%	\$0.03	0.00	0.00	Building Energy Simulation Tool
Data Center	Ventilation	Insulation - Wall Cavity	sqft wall	New	1.11	45	\$0.78	15%	50%	\$0.03	0.00	0.00	Building Energy Simulation Tool
Data Center	Cooling	HVAC - Duct Repair and Sealing	tonCool	New	52.03	18	\$0.57	15%	35%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Data Center	Heating	HVAC - Duct Repair and Sealing	tonCool	New	2.07	18	\$0.57	15%	35%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Data Center	Ventilation	HVAC - Duct Repair and Sealing	tonCool	New	8.79	18	\$0.57	15%	35%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Data Center	Cooling	Windows - High Efficiency Glazing	sqft window	New	57.45	30	\$35.93	66%	66%	\$0.02	0.00	0.00	7th Power Plan
Data Center	Heating	Windows - High Efficiency Glazing	sqft window	New	14.23	30	\$35.93	66%	66%	\$0.02	0.00	0.00	7th Power Plan
Data Center	Ventilation	Windows - High Efficiency Glazing	sqft window	New	34.43	30	\$35.93	66%	66%	\$0.02	0.00	0.00	7th Power Plan
Data Center	Cooling	Chiller - Chilled Water Reset	ChillCtrl	New	14,928.32	10	\$884.85	15%	75%	\$0.01	0.00	0.00	AEG-BEST
Data Center	Cooling	Chiller - Chilled Water Variable-Flow System	HP cool	New	595.20	15	\$332.55	15%	75%	\$0.05	0.02	0.02	AEG-BEST
Data Center	Cooling	Chiller - Variable Speed Fans	HP fan	New	2,180.05	15	\$208.36	15%	75%	\$0.01	0.01	0.01	New Jersey TRM
Data Center	Cooling	Water-Cooled Chiller - Condenser Water Reset	ChillCtrl	New	73,827.78	10	\$884.85	15%	75%	\$0.00	0.01	0.01	AEG-BEST
Data Center	Cooling	HVAC - Economizer	HP cool	New	292.11	10	\$168.42	18%	75%	\$0.07	0.02	0.02	AEG-BEST
Data Center	Heating	Space Heating - Heat Recovery Ventilator	CFM	New	0.09	14	\$5.08	6%	75%	\$6.55	0.00	0.00	7th Power Plan
Data Center	Ventilation	Ventilation - ECM on VAV Boxes	sqft	New	3.82	18	\$0.25	15%	20%	\$0.00	0.01	0.01	7th Power Plan
Data Center	Ventilation	Ventilation - Variable Speed Control	sqft	New	0.35	15	\$181.39	19%	50%	\$33.19	0.00	0.00	AEG-BEST
Data Center	Ventilation	Ventilation - Demand Controlled	sqft	New	0.20	15	\$0.25	15%	75%	\$0.08	0.00	0.00	7th Power Plan
Data Center	Cooling	Destratification Fans (HVLS)	Strat Fan	New	31,852.71	15	\$7,270.90	15%	15%	\$0.02	0.00	0.00	AEG Research
Data Center	Heating	Destratification Fans (HVLS)	Strat Fan	New	7,299.53	15	\$7,270.90	15%	15%	\$0.02	0.00	0.00	AEG Research
Data Center	Cooling	RTU - Maintenance	tonCool	New	179.21	3	\$35.00	15%	45%	\$0.05	0.00	0.00	AEG Research
Data Center	Cooling	RTU - Advanced Controls	sqft	New	0.97	15	\$0.07	15%	45%	\$0.01	0.01	0.01	7th Power Plan

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Data Center	Cooling	RTU - Evaporative Precooler	tonCool	New	365.07	15	\$681.62	15%	75%	\$0.17	0.06	0.05	AEG Research
Data Center	Cooling	Ductless Mini Split Heat Pump	tonCool	New	936.07	15	\$3,359.26	15%	25%	\$0.30	0.00	0.00	7th Power Plan
Data Center	Heating	Ductless Mini Split Heat Pump	tonCool	New	65.66	15	\$3,359.26	15%	25%	\$0.30	0.00	0.00	7th Power Plan
Data Center	Cooling	Thermostat - WiFi/Interactive	sqft	New	3.52	5	\$0.66	30%	40%	\$0.02	0.00	0.00	7th Power Plan
Data Center	Heating	Thermostat - WiFi/Interactive	sqft	New	0.44	5	\$0.66	30%	40%	\$0.02	0.00	0.00	7th Power Plan
Data Center	Ventilation	Thermostat - WiFi/Interactive	sqft	New	1.82	5	\$0.66	30%	40%	\$0.02	0.00	0.00	7th Power Plan
Data Center	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	New	100.61	10	\$8.35	25%	65%	\$0.00	0.00	0.00	Illinois TRM
Data Center	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	New	104.92	10	\$11.64	25%	65%	\$0.01	0.00	0.00	7th Power Plan
Data Center	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	New	46.66	15	\$36.75	15%	75%	\$0.03	0.00	0.00	Hawaii TRM
Data Center	Water Heating	Water Heater - Pipe Insulation	PipeFeet	New	313.10	15	\$14.88	1%	75%	\$0.00	0.00	0.00	AEG-BEST
Data Center	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	New	69.72	4	\$144.04	25%	65%	\$0.21	0.00	0.00	7th Power Plan
Data Center	Water Heating	Water Heater - Thermostat Setback	WHunits	New	46.29	2	\$5.00	15%	75%	\$0.02	0.00	0.00	Illinois TRM
Data Center	Water Heating	Water Heater - Solar System	PipeFeet	New	1,092.20	20	\$215.28	1%	30%	\$0.01	0.00	0.00	AEG-BEST
Data Center	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.73	15	\$0.35	11%	23%	\$0.03	0.01	0.01	7th Power Plan
Data Center	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	1.01	15	\$0.58	11%	23%	\$0.04	0.01	0.01	7th Power Plan
Data Center	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	New	2,128.43	15	\$54.41	1%	3%	\$0.00	0.00	0.00	7th Power Plan
Data Center	Interior Lighting	Interior Lighting - Timeclocks and Timers	occ sens	New	0.00	8	\$111.67	7%	15%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Data Center	Interior Lighting	Interior Lighting - Skylights	1000 sqft	New	0.00	15	\$1,006.35	18%	25%	\$0.00	0.00	0.00	AEG Research
Data Center	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	1000 sqft	New	430.04	16	\$1,807.69	5%	15%	\$0.26	0.00	0.00	7th Power Plan

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Data Center	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	New	4,051.12	11	\$30.80	15%	50%	\$0.00	0.00	0.00	Illinois TRM
Data Center	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	ELtg Watts	New	1.60	8	\$0.63	15%	25%	\$0.03	0.00	0.00	7th Power Plan
Data Center	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	New	57.06	8	\$55.10	15%	25%	\$0.08	0.00	0.00	Pacific Gas and Electric Research
Data Center	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	New	70.85	7	\$3,400.00	15%	30%	\$4.20	0.00	0.00	AEG Research
Data Center	Refrigeration	Refrigeration - Anti-Sweat Heater	Fridge Feet	New	16.28	8	\$48.18	0%	0%	\$0.46	0.00	0.00	7th Power Plan
Data Center	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	New	25.87	4	\$10.44	0%	0%	\$0.11	0.00	0.00	Michigan Energy Measures Database
Data Center	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	New	172.45	16	\$165.20	0%	0%	\$0.10	0.00	0.00	7th Power Plan
Data Center	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	New	24.33	15	\$335.85	0%	0%	\$1.48	0.00	0.00	7th Power Plan
Data Center	Refrigeration	Refrigeration - Strip Curtain	Walkin Door	New	29.73	2	\$10.41	0%	0%	\$0.17	0.00	0.00	7th Power Plan
Data Center	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	New	0.40	15	\$45.43	0%	0%	\$12.27	0.00	0.00	Annual Energy Outlook, 2015
Data Center	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	New	8.24	15	\$313.82	0%	0%	\$4.09	0.00	0.00	Annual Energy Outlook, 2015
Data Center	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	New	115.46	10	\$506.05	0%	0%	\$0.59	0.00	0.00	Vermont TRM
Data Center	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	New	12.38	6	\$45.41	0%	0%	\$0.70	0.00	0.00	7th Power Plan
Data Center	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	New	1.00	8	\$3.72	0%	0%	\$0.58	0.00	0.00	7th Power Plan
Data Center	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	New	217.75	5	\$45.85	0%	0%	\$0.05	0.00	0.00	Illinois TRM
Data Center	Refrigeration	Grocery - ECMs for Display Cases	Fridge Case	New	51.30	16	\$165.20	0%	0%	\$0.33	0.00	0.00	7th Power Plan
Data Center	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	New	1,380.60	5	\$187.94	25%	75%	\$0.03	0.00	0.00	Illinois TRM
Data Center	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	New	32,437.86	18	\$8,526.67	25%	50%	\$0.02	0.02	0.02	7th Power Plan
Data Center	Office Equipment	Office Equipment - Smart Power Strips	Smart Strip	New	3,299.21	4	\$41.63	10%	50%	\$0.00	0.02	0.01	7th Power Plan

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Data Center	Cooling	Lodging - Guest Room Controls	LodgUnit	New	2,429.79	15	\$260.00	0%	0%	\$0.01	0.00	0.00	AEG-BEST
Data Center	Heating	Lodging - Guest Room Controls	LodgUnit	New	-98.00	15	\$260.00	0%	0%	\$0.01	0.00	0.00	AEG-BEST
Data Center	Office Equipment	Data Center - Best Practice Measures	sqft	New	12.55	5	\$0.91	20%	75%	\$0.01	0.13	0.11	com-datacenters-7p_v5p.xlsx
Data Center	Cooling	Data Center - Commercially Available Measures	sqft	New	0.07	8	\$2.24	10%	35%	\$0.10	0.00	0.00	com-datacenters-7p_v5p.xlsx
Data Center	Ventilation	Data Center - Commercially Available Measures	sqft	New	0.04	8	\$2.24	10%	35%	\$0.10	0.00	0.00	com-datacenters-7p_v5p.xlsx
Data Center	Interior Lighting	Data Center - Commercially Available Measures	sqft	New	0.05	8	\$2.24	10%	35%	\$0.10	0.00	0.00	com-datacenters-7p_v5p.xlsx
Data Center	Office Equipment	Data Center - Commercially Available Measures	sqft	New	2.90	8	\$2.24	10%	35%	\$0.10	0.02	0.02	com-datacenters-7p_v5p.xlsx
Data Center	Cooling	Data Center - Cutting Edge Measures	sqft	New	0.35	6	\$0.05	10%	15%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Data Center	Office Equipment	Data Center - Cutting Edge Measures	sqft	New	1.01	6	\$0.05	10%	15%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Data Center	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	New	109,401.14	18	\$4,092.80	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Data Center	Miscellaneous	Pool Pump - Timer	perBldg	New	0.00	10	\$85.22	15%	75%	\$0.00	0.00	0.00	Ontario Power TRM
Data Center	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	New	261,025.83	6	\$35.93	1%	3%	\$0.00	0.00	0.00	7th Power Plan
Data Center	Cooling	Advanced New Construction Designs	sqft	New	8.05	25	\$4.11	10%	15%	\$0.02	0.02	0.02	AEG Research
Data Center	Heating	Advanced New Construction Designs	sqft	New	0.96	25	\$4.11	10%	15%	\$0.02	0.00	0.00	AEG Research
Data Center	Ventilation	Advanced New Construction Designs	sqft	New	4.05	25	\$4.11	10%	15%	\$0.02	0.01	0.01	AEG Research
Data Center	Water Heating	Advanced New Construction Designs	sqft	New	0.08	25	\$4.11	10%	15%	\$0.02	0.00	0.00	AEG Research
Data Center	Interior Lighting	Advanced New Construction Designs	sqft	New	1.45	25	\$4.11	10%	15%	\$0.02	0.00	0.00	AEG Research
Data Center	Exterior Lighting	Advanced New Construction Designs	sqft	New	0.23	25	\$4.11	10%	15%	\$0.02	0.00	0.00	AEG Research
Data Center	Cooling	Strategic Energy Management	sqft	New	1.19	3	\$10.42	0%	0%	\$0.43	0.00	0.00	AEG Research

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Data Center	Heating	Strategic Energy Management	sqft	New	0.14	3	\$10.42	0%	0%	\$0.43	0.00	0.00	AEG Research
Data Center	Ventilation	Strategic Energy Management	sqft	New	0.62	3	\$10.42	0%	0%	\$0.43	0.00	0.00	AEG Research
Data Center	Water Heating	Strategic Energy Management	sqft	New	0.01	3	\$10.42	0%	0%	\$0.43	0.00	0.00	AEG Research
Data Center	Interior Lighting	Strategic Energy Management	sqft	New	0.22	3	\$10.42	0%	0%	\$0.43	0.00	0.00	AEG Research
Data Center	Exterior Lighting	Strategic Energy Management	sqft	New	0.04	3	\$10.42	0%	0%	\$0.43	0.00	0.00	AEG Research
Data Center	Refrigeration	Strategic Energy Management	sqft	New	0.00	3	\$10.42	0%	0%	\$0.43	0.00	0.00	AEG Research
Data Center	Office Equipment	Strategic Energy Management	sqft	New	4.29	3	\$10.42	0%	0%	\$0.43	0.00	0.00	AEG Research
Data Center	Cooling	Commissioning	sqft	New	1.65	3	\$8.48	2%	65%	\$0.68	0.00	0.00	AEG Research
Data Center	Heating	Commissioning	sqft	New	0.20	3	\$8.48	2%	65%	\$0.68	0.00	0.00	AEG Research
Data Center	Ventilation	Commissioning	sqft	New	0.86	3	\$8.48	2%	65%	\$0.68	0.00	0.00	AEG Research
Data Center	Water Heating	Commissioning	sqft	New	0.01	3	\$8.48	2%	65%	\$0.68	0.00	0.00	AEG Research
Data Center	Interior Lighting	Commissioning	sqft	New	0.26	3	\$8.48	2%	65%	\$0.68	0.00	0.00	AEG Research
Data Center	Exterior Lighting	Commissioning	sqft	New	0.04	3	\$8.48	2%	65%	\$0.68	0.00	0.00	AEG Research
Data Center	Refrigeration	Commissioning	sqft	New	0.00	3	\$8.48	2%	65%	\$0.68	0.00	0.00	AEG Research
Data Center	Cooling	Retrocommissioning	sqft	New	1.65	3	\$5.38	0%	0%	\$0.43	0.00	0.00	AEG Research
Data Center	Heating	Retrocommissioning	sqft	New	0.20	3	\$5.38	0%	0%	\$0.43	0.00	0.00	AEG Research
Data Center	Ventilation	Retrocommissioning	sqft	New	0.86	3	\$5.38	0%	0%	\$0.43	0.00	0.00	AEG Research
Data Center	Water Heating	Retrocommissioning	sqft	New	0.01	3	\$5.38	0%	0%	\$0.43	0.00	0.00	AEG Research
Data Center	Interior Lighting	Retrocommissioning	sqft	New	0.26	3	\$5.38	0%	0%	\$0.43	0.00	0.00	AEG Research
Data Center	Exterior Lighting	Retrocommissioning	sqft	New	0.04	3	\$5.38	0%	0%	\$0.43	0.00	0.00	AEG Research
Data Center	Refrigeration	Retrocommissioning	sqft	New	0.00	3	\$5.38	0%	0%	\$0.43	0.00	0.00	AEG Research
Data Center	Interior Lighting	Fruit Storage - Lighting Controls	sqft	New	0.18	10	\$0.09	0%	0%	\$0.04	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Data Center	Refrigeration	Fruit Storage Refrigeration Retrofit	sqft	New	0.00	10	\$1.09	0%	0%	\$29.80	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Data Center	Refrigeration	Fruit Storage Refrigeration Tuneup	sqft	New	0.00	3	\$0.23	0%	0%	\$61.11	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Data Center	Refrigeration	Fruit Storage Retrofit - CO2 Scrub	sqft	New	0.00	10	\$3.13	0%	0%	\$176.72	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Data Center	Refrigeration	Fruit Storage Retrofit - Membrane	sqft	New	0.00	10	\$0.68	0%	0%	\$191.76	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Miscellaneous	Cooling	Insulation - Ceiling	sqft roof	Existing	0.12	45	\$1.28	15%	35%	\$0.12	204.86	189.79	Building Energy Simulation Tool
Miscellaneous	Heating	Insulation - Ceiling	sqft roof	Existing	0.65	45	\$1.28	15%	35%	\$0.12	347.79	317.66	Building Energy Simulation Tool
Miscellaneous	Ventilation	Insulation - Ceiling	sqft roof	Existing	0.06	45	\$1.28	15%	35%	\$0.12	125.40	127.27	Building Energy Simulation Tool
Miscellaneous	Cooling	Insulation - Ducting	sqft duct	Existing	0.25	20	\$0.84	15%	50%	\$0.00	186.28	173.54	Building Energy Simulation Tool
Miscellaneous	Heating	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.84	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Miscellaneous	Ventilation	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.84	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Miscellaneous	Cooling	Building Shell - Cool Roofs	sqft roof	Existing	0.23	20	\$0.78	45%	50%	\$10.00	92.03	94.85	Building Energy Simulation Tool
Miscellaneous	Heating	Building Shell - Cool Roofs	sqft roof	Existing	-0.41	20	\$0.78	45%	50%	\$10.00	-53.68	-50.65	Building Energy Simulation Tool
Miscellaneous	Ventilation	Building Shell - Cool Roofs	sqft roof	Existing	-0.04	20	\$0.78	45%	50%	\$10.00	-18.97	-20.14	Building Energy Simulation Tool
Miscellaneous	Cooling	Insulation - Wall Cavity	sqft wall	Existing	-0.06	45	\$0.78	15%	35%	\$0.02	-29.44	-26.94	Building Energy Simulation Tool
Miscellaneous	Heating	Insulation - Wall Cavity	sqft wall	Existing	3.10	45	\$0.78	15%	35%	\$0.02	505.12	446.08	Building Energy Simulation Tool
Miscellaneous	Ventilation	Insulation - Wall Cavity	sqft wall	Existing	0.26	45	\$0.78	15%	35%	\$0.02	172.82	172.28	Building Energy Simulation Tool
Miscellaneous	Cooling	HVAC - Duct Repair and Sealing	tonCool	Existing	2.02	18	\$0.57	15%	50%	\$10.00	32.19	33.15	Building Energy Simulation Tool
Miscellaneous	Heating	HVAC - Duct Repair and Sealing	tonCool	Existing	-5.41	18	\$0.57	15%	50%	\$10.00	-28.12	-26.55	Building Energy Simulation Tool
Miscellaneous	Ventilation	HVAC - Duct Repair and Sealing	tonCool	Existing	-0.47	18	\$0.57	15%	50%	\$10.00	-9.94	-10.56	Building Energy Simulation Tool

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Miscellaneous	Cooling	Windows - High Efficiency Glazing	sqft window	Existing	5.37	30	\$35.93	48%	48%	\$0.07	0.00	0.00	7th Power Plan
Miscellaneous	Heating	Windows - High Efficiency Glazing	sqft window	Existing	36.08	30	\$35.93	48%	48%	\$0.07	0.00	0.00	7th Power Plan
Miscellaneous	Ventilation	Windows - High Efficiency Glazing	sqft window	Existing	1.82	30	\$35.93	48%	48%	\$0.07	0.00	0.00	7th Power Plan
Miscellaneous	Cooling	Chiller - Chilled Water Reset	ChillCtrl	Existing	1,407.91	10	\$884.85	15%	75%	\$0.08	43.59	39.56	AEG-BEST
Miscellaneous	Cooling	Chiller - Chilled Water Variable-Flow System	HP cool	Existing	142.23	15	\$332.55	15%	75%	\$0.24	610.04	557.87	AEG-BEST
Miscellaneous	Cooling	Chiller - Variable Speed Fans	HP fan	Existing	337.81	15	\$208.36	15%	75%	\$0.06	146.19	131.29	New Jersey TRM
Miscellaneous	Cooling	Water-Cooled Chiller - Condenser Water Reset	ChillCtrl	Existing	14,876.45	10	\$884.85	15%	75%	\$0.01	157.89	141.23	AEG-BEST
Miscellaneous	Cooling	HVAC - Economizer	HP cool	Existing	46.60	10	\$168.42	18%	75%	\$0.45	994.83	918.72	AEG-BEST
Miscellaneous	Heating	Space Heating - Heat Recovery Ventilator	CFM	Existing	7.76	14	\$5.08	3%	75%	\$0.07	1,491.34	1,265.23	7th Power Plan
Miscellaneous	Ventilation	Ventilation - ECM on VAV Boxes	sqft	Existing	0.18	18	\$0.25	15%	20%	\$0.12	98.26	99.07	7th Power Plan
Miscellaneous	Ventilation	Ventilation - Variable Speed Control	sqft	Existing	0.04	15	\$181.39	13%	25%	\$366.71	58.84	63.60	AEG-BEST
Miscellaneous	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.01	15	\$0.25	15%	25%	\$2.47	10.62	11.21	7th Power Plan
Miscellaneous	Cooling	Destratification Fans (HVLS)	Strat Fan	Existing	2,975.59	15	\$7,270.90	15%	15%	\$0.03	0.00	0.00	AEG Research
Miscellaneous	Heating	Destratification Fans (HVLS)	Strat Fan	Existing	19,494.41	15	\$7,270.90	15%	15%	\$0.03	0.00	0.00	AEG Research
Miscellaneous	Cooling	RTU - Maintenance	tonCool	Existing	30.50	3	\$35.00	15%	45%	\$0.33	326.91	330.97	AEG Research
Miscellaneous	Cooling	RTU - Advanced Controls	sqft	Existing	0.20	15	\$0.07	15%	45%	\$0.03	365.37	333.45	7th Power Plan
Miscellaneous	Cooling	RTU - Evaporative Precooler	tonCool	Existing	62.88	15	\$681.62	15%	75%	\$1.02	1,207.61	1,167.03	AEG Research
Miscellaneous	Cooling	Ductless Mini Split Heat Pump	tonCool	Existing	140.88	15	\$3,359.26	15%	25%	\$1.03	42.02	43.82	7th Power Plan
Miscellaneous	Heating	Ductless Mini Split Heat Pump	tonCool	Existing	172.78	15	\$3,359.26	15%	25%	\$1.03	118.45	106.79	7th Power Plan
Miscellaneous	Cooling	Thermostat - WiFi/Interactive	sqft	Existing	0.32	5	\$0.66	30%	40%	\$0.09	269.33	258.95	7th Power Plan
Miscellaneous	Heating	Thermostat - WiFi/Interactive	sqft	Existing	1.10	5	\$0.66	30%	40%	\$0.09	290.29	267.35	7th Power Plan

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Miscellaneous	Ventilation	Thermostat - WiFi/Interactive	sqft	Existing	0.09	5	\$0.66	30%	40%	\$0.09	102.15	105.96	7th Power Plan
Miscellaneous	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	Existing	51.68	10	\$8.35	25%	65%	\$0.01	79.31	121.32	Illinois TRM
Miscellaneous	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	Existing	53.38	10	\$11.64	25%	65%	\$0.02	40.76	63.06	7th Power Plan
Miscellaneous	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	Existing	64.56	15	\$36.75	15%	25%	\$0.03	11.63	15.82	Hawaii TRM
Miscellaneous	Water Heating	Water Heater - Pipe Insulation	PipeFeet	Existing	166.73	15	\$14.88	16%	75%	\$0.01	159.93	227.99	AEG-BEST
Miscellaneous	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	Existing	35.20	4	\$144.04	25%	65%	\$0.59	52.40	81.46	7th Power Plan
Miscellaneous	Water Heating	Water Heater - Thermostat Setback	WHunits	Existing	64.59	2	\$5.00	15%	75%	\$0.02	76.50	117.58	Illinois TRM
Miscellaneous	Water Heating	Water Heater - Solar System	PipeFeet	Existing	575.12	20	\$215.28	1%	30%	\$0.02	267.44	389.29	AEG-BEST
Miscellaneous	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.37	15	\$0.35	3%	23%	\$0.07	994.58	1,111.56	7th Power Plan
Miscellaneous	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.51	15	\$0.58	3%	23%	\$0.09	1,342.18	1,530.98	7th Power Plan
Miscellaneous	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	Existing	171.39	15	\$54.41	1%	3%	\$0.02	30.07	37.77	7th Power Plan
Miscellaneous	Interior Lighting	Interior Lighting - Timeclocks and Timers	occ sens	Existing	0.00	8	\$111.67	7%	15%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Miscellaneous	Interior Lighting	Interior Lighting - Skylights	1000 sqft	Existing	0.00	15	\$1,006.35	15%	25%	\$0.00	0.00	0.00	AEG Research
Miscellaneous	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	1000 sqft	Existing	196.83	16	\$1,807.69	5%	15%	\$0.67	206.19	265.63	7th Power Plan
Miscellaneous	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	Existing	1,863.87	11	\$30.80	15%	50%	\$0.00	721.27	849.67	Illinois TRM
Miscellaneous	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	ELtg Watts	Existing	2.06	8	\$0.63	15%	25%	\$0.03	312.55	397.17	7th Power Plan
Miscellaneous	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	Existing	81.26	8	\$55.10	15%	25%	\$0.07	157.82	206.76	Pacific Gas and Electric Research
Miscellaneous	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	Existing	97.01	7	\$3,400.00	15%	30%	\$3.82	277.61	377.87	AEG Research
Miscellaneous	Refrigeration	Refrigeration - Anti-Sweat Heater	Fridge Feet	Existing	28.60	8	\$48.18	0%	0%	\$0.25	0.00	0.00	7th Power Plan

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Miscellaneous	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	Existing	51.69	4	\$10.44	0%	0%	\$0.05	0.00	0.00	Michigan Energy Measures Database
Miscellaneous	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	Existing	343.87	16	\$165.20	0%	0%	\$0.05	0.00	0.00	7th Power Plan
Miscellaneous	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	Existing	27.15	15	\$335.85	0%	0%	\$1.23	0.00	0.00	7th Power Plan
Miscellaneous	Refrigeration	Refrigeration - Strip Curtain	Walkin Door	Existing	42.34	2	\$10.41	0%	0%	\$0.11	0.00	0.00	7th Power Plan
Miscellaneous	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	Existing	0.42	15	\$45.43	0%	0%	\$10.22	0.00	0.00	Annual Energy Outlook, 2015
Miscellaneous	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	Existing	9.16	15	\$313.82	0%	0%	\$3.40	0.00	0.00	Annual Energy Outlook, 2015
Miscellaneous	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	Existing	216.95	10	\$506.05	0%	0%	\$0.29	0.00	0.00	Vermont TRM
Miscellaneous	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	Existing	13.96	6	\$45.41	0%	0%	\$0.58	0.00	0.00	7th Power Plan
Miscellaneous	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	Existing	1.12	8	\$3.72	0%	0%	\$0.48	0.00	0.00	7th Power Plan
Miscellaneous	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	Existing	286.99	5	\$45.85	0%	0%	\$0.03	0.00	0.00	Illinois TRM
Miscellaneous	Refrigeration	Grocery - ECMs for Display Cases	Fridge Case	Existing	57.83	16	\$165.20	0%	0%	\$0.28	0.00	0.00	7th Power Plan
Miscellaneous	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	Existing	1,422.49	5	\$187.94	25%	75%	\$0.03	184.69	161.98	Illinois TRM
Miscellaneous	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	Existing	1,488.34	18	\$8,526.67	25%	50%	\$0.48	163.55	167.72	7th Power Plan
Miscellaneous	Office Equipment	Office Equipment - Smart Power Strips	Smart Strip	Existing	15.91	4	\$41.63	10%	50%	\$0.61	177.29	132.62	7th Power Plan
Miscellaneous	Cooling	Lodging - Guest Room Controls	LodgUnit	Existing	225.28	15	\$260.00	0%	0%	\$0.36	0.00	0.00	AEG-BEST
Miscellaneous	Heating	Lodging - Guest Room Controls	LodgUnit	Existing	-157.32	15	\$260.00	0%	0%	\$0.36	0.00	0.00	AEG-BEST
Miscellaneous	Office Equipment	Data Center - Best Practice Measures	sqft	Existing	0.03	5	\$0.00	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Miscellaneous	Cooling	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Miscellaneous	Ventilation	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx

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Miscellaneous	Interior Lighting	Data Center - Commercially Available Measures	sqft	Existing	0.03	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Miscellaneous	Office Equipment	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Miscellaneous	Cooling	Data Center - Cutting Edge Measures	sqft	Existing	0.03	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Miscellaneous	Office Equipment	Data Center - Cutting Edge Measures	sqft	Existing	0.00	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Miscellaneous	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	Existing	751.37	18	\$4,092.80	0%	5%	\$0.46	27.39	28.03	7th Power Plan
Miscellaneous	Miscellaneous	Pool Pump - Timer	perBldg	Existing	104.56	10	\$85.22	15%	75%	\$0.11	1.91	1.67	Ontario Power TRM
Miscellaneous	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	Existing	1,530.21	6	\$35.93	1%	3%	\$0.00	52.07	45.84	7th Power Plan
Miscellaneous	Cooling	Advanced New Construction Designs	sqft	Existing	0.55	25	\$4.11	0%	0%	\$0.07	0.00	0.00	AEG Research
Miscellaneous	Heating	Advanced New Construction Designs	sqft	Existing	2.24	25	\$4.11	0%	0%	\$0.07	0.00	0.00	AEG Research
Miscellaneous	Ventilation	Advanced New Construction Designs	sqft	Existing	0.17	25	\$4.11	0%	0%	\$0.07	0.00	0.00	AEG Research
Miscellaneous	Water Heating	Advanced New Construction Designs	sqft	Existing	0.27	25	\$4.11	0%	0%	\$0.07	0.00	0.00	AEG Research
Miscellaneous	Interior Lighting	Advanced New Construction Designs	sqft	Existing	0.85	25	\$4.11	0%	0%	\$0.07	0.00	0.00	AEG Research
Miscellaneous	Exterior Lighting	Advanced New Construction Designs	sqft	Existing	0.21	25	\$4.11	0%	0%	\$0.07	0.00	0.00	AEG Research
Miscellaneous	Cooling	Strategic Energy Management	sqft	Existing	0.10	3	\$0.15	5%	16%	\$0.06	100.77	103.39	AEG Research
Miscellaneous	Heating	Strategic Energy Management	sqft	Existing	0.37	3	\$0.15	5%	16%	\$0.06	117.19	105.88	AEG Research
Miscellaneous	Ventilation	Strategic Energy Management	sqft	Existing	0.03	3	\$0.15	5%	16%	\$0.06	41.41	43.76	AEG Research
Miscellaneous	Water Heating	Strategic Energy Management	sqft	Existing	0.04	3	\$0.15	5%	16%	\$0.06	21.46	33.62	AEG Research
Miscellaneous	Interior Lighting	Strategic Energy Management	sqft	Existing	0.12	3	\$0.15	5%	16%	\$0.06	135.74	182.56	AEG Research
Miscellaneous	Exterior Lighting	Strategic Energy Management	sqft	Existing	0.03	3	\$0.15	5%	16%	\$0.06	31.36	41.75	AEG Research

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Miscellaneous	Refrigeration	Strategic Energy Management	sqft	Existing	0.01	3	\$0.15	5%	16%	\$0.06	11.30	11.38	AEG Research
Miscellaneous	Office Equipment	Strategic Energy Management	sqft	Existing	0.02	3	\$0.15	5%	16%	\$0.06	33.06	24.66	AEG Research
Miscellaneous	Cooling	Commissioning	sqft	Existing	0.14	3	\$0.55	0%	0%	\$0.17	0.00	0.00	AEG Research
Miscellaneous	Heating	Commissioning	sqft	Existing	0.49	3	\$0.55	0%	0%	\$0.17	0.00	0.00	AEG Research
Miscellaneous	Ventilation	Commissioning	sqft	Existing	0.04	3	\$0.55	0%	0%	\$0.17	0.00	0.00	AEG Research
Miscellaneous	Water Heating	Commissioning	sqft	Existing	0.02	3	\$0.55	0%	0%	\$0.17	0.00	0.00	AEG Research
Miscellaneous	Interior Lighting	Commissioning	sqft	Existing	0.13	3	\$0.55	0%	0%	\$0.17	0.00	0.00	AEG Research
Miscellaneous	Exterior Lighting	Commissioning	sqft	Existing	0.03	3	\$0.55	0%	0%	\$0.17	0.00	0.00	AEG Research
Miscellaneous	Refrigeration	Commissioning	sqft	Existing	0.02	3	\$0.55	0%	0%	\$0.17	0.00	0.00	AEG Research
Miscellaneous	Cooling	Retrocommissioning	sqft	Existing	0.14	3	\$0.35	10%	65%	\$0.11	693.86	714.16	AEG Research
Miscellaneous	Heating	Retrocommissioning	sqft	Existing	0.51	3	\$0.35	10%	65%	\$0.11	806.89	731.29	AEG Research
Miscellaneous	Ventilation	Retrocommissioning	sqft	Existing	0.04	3	\$0.35	10%	65%	\$0.11	285.10	302.26	AEG Research
Miscellaneous	Water Heating	Retrocommissioning	sqft	Existing	0.02	3	\$0.35	10%	65%	\$0.11	49.26	77.43	AEG Research
Miscellaneous	Interior Lighting	Retrocommissioning	sqft	Existing	0.14	3	\$0.35	10%	65%	\$0.11	778.88	1,050.91	AEG Research
Miscellaneous	Exterior Lighting	Retrocommissioning	sqft	Existing	0.03	3	\$0.35	10%	65%	\$0.11	179.96	240.35	AEG Research
Miscellaneous	Refrigeration	Retrocommissioning	sqft	Existing	0.02	3	\$0.35	10%	65%	\$0.11	129.67	131.04	AEG Research
Miscellaneous	Interior Lighting	Fruit Storage - Lighting Controls	sqft	Existing	0.10	10	\$0.09	0%	0%	\$0.08	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Miscellaneous	Refrigeration	Fruit Storage Refrigeration Retrofit	sqft	Existing	0.06	10	\$1.09	0%	0%	\$2.11	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Miscellaneous	Refrigeration	Fruit Storage Refrigeration Tuneup	sqft	Existing	0.02	3	\$0.23	0%	0%	\$4.34	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Miscellaneous	Refrigeration	Fruit Storage Retrofit - CO2 Scrub	sqft	Existing	0.03	10	\$3.13	0%	0%	\$12.54	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Miscellaneous	Refrigeration	Fruit Storage Retrofit - Membrane	sqft	Existing	0.01	10	\$0.68	0%	0%	\$13.61	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Miscellaneous	Cooling	Insulation - Ceiling	sqft roof	New	0.00	45	\$1.28	15%	50%	\$0.15	0.00	0.00	Building Energy Simulation Tool

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Miscellaneous	Heating	Insulation - Ceiling	sqft roof	New	0.63	45	\$1.28	15%	50%	\$0.15	170.87	157.07	Building Energy Simulation Tool
Miscellaneous	Ventilation	Insulation - Ceiling	sqft roof	New	0.04	45	\$1.28	15%	50%	\$0.15	50.84	49.84	Building Energy Simulation Tool
Miscellaneous	Cooling	Insulation - Ducting	sqft duct	New	0.31	20	\$0.84	15%	50%	\$0.13	87.08	81.08	Building Energy Simulation Tool
Miscellaneous	Heating	Insulation - Ducting	sqft duct	New	0.24	20	\$0.84	15%	50%	\$0.13	16.10	14.89	Building Energy Simulation Tool
Miscellaneous	Ventilation	Insulation - Ducting	sqft duct	New	0.01	20	\$0.84	15%	50%	\$0.13	4.76	4.71	Building Energy Simulation Tool
Miscellaneous	Cooling	Building Shell - Cool Roofs	sqft roof	New	0.06	20	\$0.78	45%	50%	\$10.00	10.10	9.50	Building Energy Simulation Tool
Miscellaneous	Heating	Building Shell - Cool Roofs	sqft roof	New	-0.17	20	\$0.78	45%	50%	\$10.00	-6.52	-6.02	Building Energy Simulation Tool
Miscellaneous	Ventilation	Building Shell - Cool Roofs	sqft roof	New	-0.01	20	\$0.78	45%	50%	\$10.00	-1.91	-1.89	Building Energy Simulation Tool
Miscellaneous	Cooling	Insulation - Wall Cavity	sqft wall	New	0.00	45	\$0.78	15%	50%	\$0.09	-0.47	-0.44	Building Energy Simulation Tool
Miscellaneous	Heating	Insulation - Wall Cavity	sqft wall	New	0.61	45	\$0.78	15%	50%	\$0.09	49.42	45.48	Building Energy Simulation Tool
Miscellaneous	Ventilation	Insulation - Wall Cavity	sqft wall	New	0.04	45	\$0.78	15%	50%	\$0.09	14.51	14.20	Building Energy Simulation Tool
Miscellaneous	Cooling	HVAC - Duct Repair and Sealing	tonCool	New	1.83	18	\$0.57	15%	50%	\$0.00	11.47	10.63	Building Energy Simulation Tool
Miscellaneous	Heating	HVAC - Duct Repair and Sealing	tonCool	New	19.90	18	\$0.57	15%	50%	\$0.00	29.55	27.15	Building Energy Simulation Tool
Miscellaneous	Ventilation	HVAC - Duct Repair and Sealing	tonCool	New	1.18	18	\$0.57	15%	50%	\$0.00	8.67	8.49	Building Energy Simulation Tool
Miscellaneous	Cooling	Windows - High Efficiency Glazing	sqft window	New	3.84	30	\$35.93	66%	66%	\$0.07	0.00	0.00	7th Power Plan
Miscellaneous	Heating	Windows - High Efficiency Glazing	sqft window	New	34.69	30	\$35.93	66%	66%	\$0.07	0.00	0.00	7th Power Plan
Miscellaneous	Ventilation	Windows - High Efficiency Glazing	sqft window	New	1.20	30	\$35.93	66%	66%	\$0.07	0.00	0.00	7th Power Plan
Miscellaneous	Cooling	Chiller - Chilled Water Reset	ChillCtrl	New	1,103.23	10	\$884.85	15%	75%	\$0.10	5.12	4.42	AEG-BEST
Miscellaneous	Cooling	Chiller - Chilled Water Variable-Flow System	HP cool	New	111.09	15	\$332.55	15%	75%	\$0.29	90.98	80.37	AEG-BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Miscellaneous	Cooling	Chiller - Variable Speed Fans	HP fan	New	262.49	15	\$208.36	15%	75%	\$0.08	21.59	18.91	New Jersey TRM
Miscellaneous	Cooling	Water-Cooled Chiller - Condenser Water Reset	ChillCtrl	New	14,427.98	10	\$884.85	15%	75%	\$0.01	22.84	19.60	AEG-BEST
Miscellaneous	Cooling	HVAC - Economizer	HP cool	New	32.76	10	\$168.42	18%	75%	\$0.58	102.58	93.57	AEG-BEST
Miscellaneous	Heating	Space Heating - Heat Recovery Ventilator	CFM	New	7.27	14	\$5.08	6%	75%	\$0.08	186.20	158.81	7th Power Plan
Miscellaneous	Ventilation	Ventilation - ECM on VAV Boxes	sqft	New	0.13	18	\$0.25	15%	20%	\$0.12	23.64	23.26	7th Power Plan
Miscellaneous	Ventilation	Ventilation - Variable Speed Control	sqft	New	0.03	15	\$181.39	19%	25%	\$375.47	3.79	3.69	AEG-BEST
Miscellaneous	Ventilation	Ventilation - Demand Controlled	sqft	New	0.01	15	\$0.25	15%	25%	\$2.52	1.38	1.35	7th Power Plan
Miscellaneous	Cooling	Destratification Fans (HVLS)	Strat Fan	New	2,132.20	15	\$7,270.90	15%	15%	\$0.04	0.00	0.00	AEG Research
Miscellaneous	Heating	Destratification Fans (HVLS)	Strat Fan	New	18,275.34	15	\$7,270.90	15%	15%	\$0.04	0.00	0.00	AEG Research
Miscellaneous	Cooling	RTU - Maintenance	tonCool	New	38.74	3	\$35.00	15%	45%	\$0.25	13.26	11.89	AEG Research
Miscellaneous	Cooling	RTU - Advanced Controls	sqft	New	0.25	15	\$0.07	15%	45%	\$0.03	153.17	137.97	7th Power Plan
Miscellaneous	Cooling	RTU - Evaporative Precooler	tonCool	New	81.50	15	\$681.62	15%	75%	\$0.79	687.46	634.01	AEG Research
Miscellaneous	Cooling	Ductless Mini Split Heat Pump	tonCool	New	175.70	15	\$3,359.26	15%	25%	\$0.91	14.09	12.86	7th Power Plan
Miscellaneous	Heating	Ductless Mini Split Heat Pump	tonCool	New	179.35	15	\$3,359.26	15%	25%	\$0.91	22.14	19.31	7th Power Plan
Miscellaneous	Cooling	Thermostat - WiFi/Interactive	sqft	New	0.23	5	\$0.66	30%	40%	\$0.10	9.09	8.22	7th Power Plan
Miscellaneous	Heating	Thermostat - WiFi/Interactive	sqft	New	1.06	5	\$0.66	30%	40%	\$0.10	10.06	8.44	7th Power Plan
Miscellaneous	Ventilation	Thermostat - WiFi/Interactive	sqft	New	0.06	5	\$0.66	30%	40%	\$0.10	2.94	2.85	7th Power Plan
Miscellaneous	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	New	34.91	10	\$8.35	25%	65%	\$0.01	7.09	8.30	Illinois TRM
Miscellaneous	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	New	36.41	10	\$11.64	25%	65%	\$0.02	3.70	4.33	7th Power Plan
Miscellaneous	Water Heating	Water Heater - High Efficiency Circulation Pump	WHUnits	New	44.25	15	\$36.75	15%	25%	\$0.03	2.89	3.06	Hawaii TRM
Miscellaneous	Water Heating	Water Heater - Pipe Insulation	PipeFeet	New	108.72	15	\$14.88	1%	75%	\$0.01	26.93	30.54	AEG-BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Miscellaneous	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	New	24.29	4	\$144.04	25%	65%	\$0.59	2.31	2.83	7th Power Plan
Miscellaneous	Water Heating	Water Heater - Thermostat Setback	WHUnits	New	44.30	2	\$5.00	15%	75%	\$0.02	0.95	1.20	Illinois TRM
Miscellaneous	Water Heating	Water Heater - Solar System	PipeFeet	New	379.27	20	\$215.28	1%	30%	\$0.02	38.08	42.98	AEG-BEST
Miscellaneous	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.31	15	\$0.35	11%	23%	\$0.07	274.56	277.99	7th Power Plan
Miscellaneous	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.43	15	\$0.58	11%	23%	\$0.09	377.77	383.57	7th Power Plan
Miscellaneous	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	New	142.19	15	\$54.41	1%	3%	\$0.02	3.23	3.42	7th Power Plan
Miscellaneous	Interior Lighting	Interior Lighting - Timeclocks and Timers	occ sens	New	0.00	8	\$111.67	7%	15%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Miscellaneous	Interior Lighting	Interior Lighting - Skylights	1000 sqft	New	0.00	15	\$1,006.35	18%	25%	\$0.00	0.00	0.00	AEG Research
Miscellaneous	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	1000 sqft	New	149.84	16	\$1,807.69	5%	15%	\$0.72	27.26	28.27	7th Power Plan
Miscellaneous	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	New	1,408.10	11	\$30.80	15%	50%	\$0.00	73.07	75.19	Illinois TRM
Miscellaneous	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	ELtg Watts	New	1.49	8	\$0.63	15%	25%	\$0.03	25.34	28.96	7th Power Plan
Miscellaneous	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	New	60.18	8	\$55.10	15%	25%	\$0.07	13.37	15.20	Pacific Gas and Electric Research
Miscellaneous	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	New	74.05	7	\$3,400.00	15%	30%	\$3.73	21.65	24.91	AEG Research
Miscellaneous	Refrigeration	Refrigeration - Anti-Sweat Heater	Fridge Feet	New	20.03	8	\$48.18	0%	0%	\$0.36	0.00	0.00	7th Power Plan
Miscellaneous	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	New	42.94	4	\$10.44	0%	0%	\$0.06	0.00	0.00	Michigan Energy Measures Database
Miscellaneous	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	New	274.49	16	\$165.20	0%	0%	\$0.06	0.00	0.00	7th Power Plan
Miscellaneous	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	New	25.60	15	\$335.85	0%	0%	\$1.35	0.00	0.00	7th Power Plan
Miscellaneous	Refrigeration	Refrigeration - Strip Curtain	Walkin Door	New	37.21	2	\$10.41	0%	0%	\$0.13	0.00	0.00	7th Power Plan
Miscellaneous	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBtuh	New	0.41	15	\$45.43	0%	0%	\$11.17	0.00	0.00	Annual Energy Outlook, 2015

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Miscellaneous	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	New	8.67	15	\$313.82	0%	0%	\$3.72	0.00	0.00	Annual Energy Outlook, 2015
Miscellaneous	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	New	181.25	10	\$506.05	0%	0%	\$0.36	0.00	0.00	Vermont TRM
Miscellaneous	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	New	12.91	6	\$45.41	0%	0%	\$0.65	0.00	0.00	7th Power Plan
Miscellaneous	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	New	1.04	8	\$3.72	0%	0%	\$0.54	0.00	0.00	7th Power Plan
Miscellaneous	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	New	274.48	5	\$45.85	0%	0%	\$0.04	0.00	0.00	Illinois TRM
Miscellaneous	Refrigeration	Grocery - ECMs for Display Cases	Fridge Case	New	53.48	16	\$165.20	0%	0%	\$0.31	0.00	0.00	7th Power Plan
Miscellaneous	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	New	1,385.09	5	\$187.94	25%	75%	\$0.03	13.42	11.20	Illinois TRM
Miscellaneous	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	New	1,090.55	18	\$8,526.67	25%	50%	\$0.49	39.94	39.49	7th Power Plan
Miscellaneous	Office Equipment	Office Equipment - Smart Power Strips	Smart Strip	New	18.42	4	\$41.63	10%	50%	\$0.52	7.97	5.72	7th Power Plan
Miscellaneous	Cooling	Lodging - Guest Room Controls	LodgUnit	New	266.17	15	\$260.00	0%	0%	\$0.20	0.00	0.00	AEG-BEST
Miscellaneous	Heating	Lodging - Guest Room Controls	LodgUnit	New	-156.37	15	\$260.00	0%	0%	\$0.20	0.00	0.00	AEG-BEST
Miscellaneous	Office Equipment	Data Center - Best Practice Measures	sqft	New	0.03	5	\$0.00	0%	0%	\$0.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Miscellaneous	Cooling	Data Center - Commercially Available Measures	sqft	New	0.01	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Miscellaneous	Ventilation	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Miscellaneous	Interior Lighting	Data Center - Commercially Available Measures	sqft	New	0.03	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Miscellaneous	Office Equipment	Data Center - Commercially Available Measures	sqft	New	0.01	8	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Miscellaneous	Cooling	Data Center - Cutting Edge Measures	sqft	New	0.02	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Miscellaneous	Office Equipment	Data Center - Cutting Edge Measures	sqft	New	0.00	6	\$0.00	0%	0%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Miscellaneous	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	New	550.11	18	\$4,092.80	0%	5%	\$0.47	6.68	6.60	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Miscellaneous	Miscellaneous	Pool Pump - Timer	perBldg	New	104.70	10	\$85.22	15%	75%	\$0.11	0.26	0.23	Ontario Power TRM
Miscellaneous	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	New	1,529.79	6	\$35.93	1%	3%	\$0.00	2.41	2.00	7th Power Plan
Miscellaneous	Cooling	Advanced New Construction Designs	sqft	New	0.54	25	\$4.11	10%	15%	\$0.07	100.11	92.34	AEG Research
Miscellaneous	Heating	Advanced New Construction Designs	sqft	New	2.35	25	\$4.11	10%	15%	\$0.07	102.77	94.16	AEG Research
Miscellaneous	Ventilation	Advanced New Construction Designs	sqft	New	0.14	25	\$4.11	10%	15%	\$0.07	30.40	29.98	AEG Research
Miscellaneous	Water Heating	Advanced New Construction Designs	sqft	New	0.19	25	\$4.11	10%	15%	\$0.07	19.88	20.77	AEG Research
Miscellaneous	Interior Lighting	Advanced New Construction Designs	sqft	New	0.65	25	\$4.11	10%	15%	\$0.07	115.94	116.64	AEG Research
Miscellaneous	Exterior Lighting	Advanced New Construction Designs	sqft	New	0.13	25	\$4.11	10%	15%	\$0.07	25.32	25.85	AEG Research
Miscellaneous	Cooling	Strategic Energy Management	sqft	New	0.08	3	\$0.14	16%	16%	\$0.06	0.00	0.00	AEG Research
Miscellaneous	Heating	Strategic Energy Management	sqft	New	0.36	3	\$0.14	16%	16%	\$0.06	0.00	0.00	AEG Research
Miscellaneous	Ventilation	Strategic Energy Management	sqft	New	0.02	3	\$0.14	16%	16%	\$0.06	0.00	0.00	AEG Research
Miscellaneous	Water Heating	Strategic Energy Management	sqft	New	0.03	3	\$0.14	16%	16%	\$0.06	0.00	0.00	AEG Research
Miscellaneous	Interior Lighting	Strategic Energy Management	sqft	New	0.10	3	\$0.14	16%	16%	\$0.06	0.00	0.00	AEG Research
Miscellaneous	Exterior Lighting	Strategic Energy Management	sqft	New	0.02	3	\$0.14	16%	16%	\$0.06	0.00	0.00	AEG Research
Miscellaneous	Refrigeration	Strategic Energy Management	sqft	New	0.01	3	\$0.14	16%	16%	\$0.06	0.00	0.00	AEG Research
Miscellaneous	Office Equipment	Strategic Energy Management	sqft	New	0.02	3	\$0.14	16%	16%	\$0.06	0.00	0.00	AEG Research
Miscellaneous	Cooling	Commissioning	sqft	New	0.11	3	\$0.48	10%	65%	\$0.16	19.26	17.27	AEG Research
Miscellaneous	Heating	Commissioning	sqft	New	0.50	3	\$0.48	10%	65%	\$0.16	21.33	17.58	AEG Research
Miscellaneous	Ventilation	Commissioning	sqft	New	0.03	3	\$0.48	10%	65%	\$0.16	6.24	6.01	AEG Research
Miscellaneous	Water Heating	Commissioning	sqft	New	0.01	3	\$0.48	10%	65%	\$0.16	1.38	1.72	AEG Research
Miscellaneous	Interior Lighting	Commissioning	sqft	New	0.11	3	\$0.48	10%	65%	\$0.16	20.09	23.53	AEG Research

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Miscellaneous	Exterior Lighting	Commissioning	sqft	New	0.02	3	\$0.48	10%	65%	\$0.16	4.40	5.42	AEG Research
Miscellaneous	Refrigeration	Commissioning	sqft	New	0.03	3	\$0.48	10%	65%	\$0.16	4.63	3.83	AEG Research
Miscellaneous	Cooling	Retrocommissioning	sqft	New	0.11	3	\$0.30	0%	0%	\$0.10	0.00	0.00	AEG Research
Miscellaneous	Heating	Retrocommissioning	sqft	New	0.50	3	\$0.30	0%	0%	\$0.10	0.00	0.00	AEG Research
Miscellaneous	Ventilation	Retrocommissioning	sqft	New	0.03	3	\$0.30	0%	0%	\$0.10	0.00	0.00	AEG Research
Miscellaneous	Water Heating	Retrocommissioning	sqft	New	0.01	3	\$0.30	0%	0%	\$0.10	0.00	0.00	AEG Research
Miscellaneous	Interior Lighting	Retrocommissioning	sqft	New	0.11	3	\$0.30	0%	0%	\$0.10	0.00	0.00	AEG Research
Miscellaneous	Exterior Lighting	Retrocommissioning	sqft	New	0.02	3	\$0.30	0%	0%	\$0.10	0.00	0.00	AEG Research
Miscellaneous	Refrigeration	Retrocommissioning	sqft	New	0.03	3	\$0.30	0%	0%	\$0.10	0.00	0.00	AEG Research
Miscellaneous	Interior Lighting	Fruit Storage - Lighting Controls	sqft	New	0.08	10	\$0.09	0%	0%	\$0.08	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Miscellaneous	Refrigeration	Fruit Storage Refrigeration Retrofit	sqft	New	0.08	10	\$1.09	0%	0%	\$1.65	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Miscellaneous	Refrigeration	Fruit Storage Refrigeration Tuneup	sqft	New	0.02	3	\$0.23	0%	0%	\$3.39	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Miscellaneous	Refrigeration	Fruit Storage Retrofit - CO2 Scrub	sqft	New	0.04	10	\$3.13	0%	0%	\$9.79	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Miscellaneous	Refrigeration	Fruit Storage Retrofit - Membrane	sqft	New	0.01	10	\$0.68	0%	0%	\$10.63	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx

INDUSTRIAL MEASURES

California Industrial Measures Assumptions

Table H-11 Comparison of 7th Plan and RTF Industrial Measures in California

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Agriculture	Cooling	Air-Cooled Chiller	1 kBTU/hr	Existing	20.95	20	\$26.36	3%	at stock turnover	\$0.12	3.29	3.29	Annual Energy Outlook, 2015
Agriculture	Cooling	Water-Cooled Chiller	1 kBTU/hr	Existing	28.62	25	\$12.65	3%	at stock turnover	\$0.04	4.31	4.31	Annual Energy Outlook, 2015
Agriculture	Cooling	RTU	1 kBTU/hr	Existing	3.29	15	\$6.75	11%	at stock turnover	\$0.22	2.74	2.74	Annual Energy Outlook, 2015
Agriculture	Cooling	Air-Source Heat Pump	1 kBTU/hr	Existing	6.34	15	\$21.65	3%	at stock turnover	\$0.23	0.96	0.96	Annual Energy Outlook, 2015
Agriculture	Heating	Air-Source Heat Pump	1 kBTU/hr	Existing	3.79	15	\$21.65	3%	at stock turnover	\$0.23	0.58	0.58	Annual Energy Outlook, 2015
Agriculture	Cooling	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Agriculture	Heating	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Agriculture	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	3%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Agriculture	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	15%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Agriculture	Ventilation	Ventilation	1000 CFM	Existing	2,269.39	20	\$1,219.71	100%	at stock turnover	\$0.05	18.98	18.98	AEG-BEST
Agriculture	Interior Lighting	Screw-in	lamps	Existing	27.74	8	\$4.05	100%	at stock turnover	\$0.00	4.93	4.89	7th Power Plan
Agriculture	Interior Lighting	High-Bay Fixtures	lamps	Existing	378.26	15	\$127.03	100%	at stock turnover	\$0.04	129.61	119.93	Annual Energy Outlook, 2015
Agriculture	Interior Lighting	Linear Lighting	lamps	Existing	55.29	17	\$54.19	100%	at stock turnover	\$0.07	25.03	23.90	7th Power Plan
Agriculture	Exterior Lighting	Screw-in	lamps	Existing	27.74	8	\$4.05	100%	at stock turnover	\$0.00	1.51	1.50	7th Power Plan
Agriculture	Exterior Lighting	Area Lighting	lamps	Existing	593.44	15	\$45.69	100%	at stock turnover	-\$0.04	33.67	32.00	Annual Energy Outlook, 2015
Agriculture	Exterior Lighting	Linear Lighting	lamps	Existing	55.29	17	\$54.19	100%	at stock turnover	\$0.07	6.76	6.46	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Agriculture	Motors	Pumps	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Agriculture	Motors	Fans & Blowers	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Agriculture	Motors	Compressed Air	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Agriculture	Motors	Material Handling	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Agriculture	Motors	Other Motors	1 unit	Existing	0.00	10	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	N/A
Agriculture	Process	Process Heating	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Agriculture	Process	Process Cooling	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Agriculture	Process	Process Refrigeration	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Agriculture	Process	Process Electrochemical	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Agriculture	Process	Process Other	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Agriculture	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Agriculture	Cooling	Air-Cooled Chiller	1 kBTU/hr	New	18.03	20	\$26.36	3%	at stock turnover	\$0.14	1.89	1.89	Annual Energy Outlook, 2015
Agriculture	Cooling	Water-Cooled Chiller	1 kBTU/hr	New	24.90	25	\$12.65	3%	at stock turnover	\$0.05	2.27	2.27	Annual Energy Outlook, 2015
Agriculture	Cooling	RTU	1 kBTU/hr	New	3.20	15	\$6.75	11%	at stock turnover	\$0.23	1.33	1.33	Annual Energy Outlook, 2015
Agriculture	Cooling	Air-Source Heat Pump	1 kBTU/hr	New	6.16	15	\$21.65	3%	at stock turnover	\$0.24	0.49	0.49	Annual Energy Outlook, 2015
Agriculture	Heating	Air-Source Heat Pump	1 kBTU/hr	New	3.64	15	\$21.65	3%	at stock turnover	\$0.24	0.29	0.29	Annual Energy Outlook, 2015
Agriculture	Cooling	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Agriculture	Heating	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Agriculture	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	3%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Agriculture	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	15%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Agriculture	Ventilation	Ventilation	1000 CFM	New	1,964.09	20	\$1,219.71	100%	at stock turnover	\$0.06	9.46	9.46	AEG-BEST
Agriculture	Interior Lighting	Screw-in	lamps	New	26.73	8	\$4.05	100%	at stock turnover	\$0.00	2.21	2.12	7th Power Plan
Agriculture	Interior Lighting	High-Bay Fixtures	lamps	New	382.26	15	\$127.03	100%	at stock turnover	\$0.04	65.43	60.86	Annual Energy Outlook, 2015
Agriculture	Interior Lighting	Linear Lighting	lamps	New	56.01	17	\$54.19	100%	at stock turnover	\$0.07	10.52	9.99	7th Power Plan
Agriculture	Exterior Lighting	Screw-in	lamps	New	26.73	8	\$4.05	100%	at stock turnover	\$0.00	0.68	0.65	7th Power Plan
Agriculture	Exterior Lighting	Area Lighting	lamps	New	595.22	15	\$45.69	100%	at stock turnover	-\$0.04	16.93	16.14	Annual Energy Outlook, 2015
Agriculture	Exterior Lighting	Linear Lighting	lamps	New	56.01	17	\$54.19	100%	at stock turnover	\$0.07	2.84	2.70	7th Power Plan
Agriculture	Motors	Pumps	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Agriculture	Motors	Fans & Blowers	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Agriculture	Motors	Compressed Air	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Agriculture	Motors	Material Handling	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Agriculture	Motors	Other Motors	1 unit	New	0.00	10	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	N/A
Agriculture	Process	Process Heating	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Agriculture	Process	Process Cooling	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Agriculture	Process	Process Refrigeration	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Agriculture	Process	Process Electrochemical	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Agriculture	Process	Process Other	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Agriculture	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Mining and Extraction	Cooling	Air-Cooled Chiller	1 kBTU/hr	Existing	20.95	20	\$26.36	3%	at stock turnover	\$0.12	0.19	0.00	Annual Energy Outlook, 2015
Mining and Extraction	Cooling	Water-Cooled Chiller	1 kBTU/hr	Existing	28.62	25	\$12.65	3%	at stock turnover	\$0.04	0.25	0.00	Annual Energy Outlook, 2015
Mining and Extraction	Cooling	RTU	1 kBTU/hr	Existing	3.29	15	\$6.75	11%	at stock turnover	\$0.22	0.16	0.00	Annual Energy Outlook, 2015
Mining and Extraction	Cooling	Air-Source Heat Pump	1 kBTU/hr	Existing	6.34	15	\$21.65	3%	at stock turnover	\$0.23	0.05	0.00	Annual Energy Outlook, 2015
Mining and Extraction	Heating	Air-Source Heat Pump	1 kBTU/hr	Existing	3.79	15	\$21.65	3%	at stock turnover	\$0.23	0.03	0.00	Annual Energy Outlook, 2015
Mining and Extraction	Cooling	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Mining and Extraction	Heating	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Mining and Extraction	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	3%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Mining and Extraction	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	15%	at stock turnover	\$0.00	0.00	0.01	AEG-BEST
Mining and Extraction	Ventilation	Ventilation	1000 CFM	Existing	2,269.39	20	\$1,219.71	100%	at stock turnover	\$0.05	1.08	0.05	AEG-BEST
Mining and Extraction	Interior Lighting	Screw-in	lamps	Existing	27.06	8	\$4.05	100%	at stock turnover	\$0.00	0.43	0.01	7th Power Plan
Mining and Extraction	Interior Lighting	High-Bay Fixtures	lamps	Existing	191.43	15	\$127.03	100%	at stock turnover	\$0.07	11.21	0.00	Annual Energy Outlook, 2015
Mining and Extraction	Interior Lighting	Linear Lighting	lamps	Existing	28.60	17	\$54.19	100%	at stock turnover	\$0.14	2.14	0.00	7th Power Plan
Mining and Extraction	Exterior Lighting	Screw-in	lamps	Existing	154.55	8	\$4.05	100%	at stock turnover	\$0.00	0.13	0.00	7th Power Plan
Mining and Extraction	Exterior Lighting	Area Lighting	lamps	Existing	2,507.81	15	\$45.69	100%	at stock turnover	-\$0.01	2.91	0.00	Annual Energy Outlook, 2015
Mining and Extraction	Exterior Lighting	Linear Lighting	lamps	Existing	196.34	17	\$54.19	100%	at stock turnover	\$0.02	0.58	0.04	7th Power Plan
Mining and Extraction	Motors	Pumps	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.01	N/A
Mining and Extraction	Motors	Fans & Blowers	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Mining and Extraction	Motors	Compressed Air	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.01	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Mining and Extraction	Motors	Material Handling	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Mining and Extraction	Motors	Other Motors	1 unit	Existing	0.00	10	\$0.00	0%	at stock turnover	\$0.00	0.00	0.01	N/A
Mining and Extraction	Process	Process Heating	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.04	N/A
Mining and Extraction	Process	Process Cooling	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.02	N/A
Mining and Extraction	Process	Process Refrigeration	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.02	N/A
Mining and Extraction	Process	Process Electrochemical	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Mining and Extraction	Process	Process Other	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.06	N/A
Mining and Extraction	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.52	N/A
Mining and Extraction	Cooling	Air-Cooled Chiller	1 kBTU/hr	New	18.03	20	\$26.36	3%	at stock turnover	\$0.14	0.12	0.04	Annual Energy Outlook, 2015
Mining and Extraction	Cooling	Water-Cooled Chiller	1 kBTU/hr	New	24.90	25	\$12.65	3%	at stock turnover	\$0.05	0.13	0.03	Annual Energy Outlook, 2015
Mining and Extraction	Cooling	RTU	1 kBTU/hr	New	3.20	15	\$6.75	11%	at stock turnover	\$0.23	0.09	0.13	Annual Energy Outlook, 2015
Mining and Extraction	Cooling	Air-Source Heat Pump	1 kBTU/hr	New	6.16	15	\$21.65	3%	at stock turnover	\$0.24	0.03	0.02	Annual Energy Outlook, 2015
Mining and Extraction	Heating	Air-Source Heat Pump	1 kBTU/hr	New	3.64	15	\$21.65	3%	at stock turnover	\$0.24	0.02	0.23	Annual Energy Outlook, 2015
Mining and Extraction	Cooling	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.32	Annual Energy Outlook, 2015
Mining and Extraction	Heating	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Mining and Extraction	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	3%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Mining and Extraction	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	15%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Mining and Extraction	Ventilation	Ventilation	1000 CFM	New	1,964.09	20	\$1,219.71	100%	at stock turnover	\$0.06	0.61	0.04	AEG-BEST
Mining and Extraction	Interior Lighting	Screw-in	lamps	New	26.08	8	\$4.05	100%	at stock turnover	\$0.00	0.23	0.04	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Mining and Extraction	Interior Lighting	High-Bay Fixtures	lamps	New	193.46	15	\$127.03	100%	at stock turnover	\$0.07	6.50	0.06	Annual Energy Outlook, 2015
Mining and Extraction	Interior Lighting	Linear Lighting	lamps	New	28.97	17	\$54.19	100%	at stock turnover	\$0.14	1.14	0.08	7th Power Plan
Mining and Extraction	Exterior Lighting	Screw-in	lamps	New	148.94	8	\$4.05	100%	at stock turnover	\$0.00	0.07	0.05	7th Power Plan
Mining and Extraction	Exterior Lighting	Area Lighting	lamps	New	2,515.33	15	\$45.69	100%	at stock turnover	-\$0.01	1.68	0.00	Annual Energy Outlook, 2015
Mining and Extraction	Exterior Lighting	Linear Lighting	lamps	New	198.91	17	\$54.19	100%	at stock turnover	\$0.02	0.31	0.00	7th Power Plan
Mining and Extraction	Motors	Pumps	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Mining and Extraction	Motors	Fans & Blowers	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.04	N/A
Mining and Extraction	Motors	Compressed Air	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.07	N/A
Mining and Extraction	Motors	Material Handling	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.55	N/A
Mining and Extraction	Motors	Other Motors	1 unit	New	0.00	10	\$0.00	0%	at stock turnover	\$0.00	0.00	0.40	N/A
Mining and Extraction	Process	Process Heating	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.40	N/A
Mining and Extraction	Process	Process Cooling	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.42	N/A
Mining and Extraction	Process	Process Refrigeration	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.49	N/A
Mining and Extraction	Process	Process Electrochemical	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.73	N/A
Mining and Extraction	Process	Process Other	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.29	N/A
Mining and Extraction	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Food Mfg	Cooling	Air-Cooled Chiller	1 kBTU/hr	Existing	20.95	20	\$26.36	3%	at stock turnover	\$0.12	9.11	0.52	Annual Energy Outlook, 2015
Food Mfg	Cooling	Water-Cooled Chiller	1 kBTU/hr	Existing	28.62	25	\$12.65	3%	at stock turnover	\$0.04	11.95	0.00	Annual Energy Outlook, 2015
Food Mfg	Cooling	RTU	1 kBTU/hr	Existing	3.29	15	\$6.75	11%	at stock turnover	\$0.22	7.60	0.00	Annual Energy Outlook, 2015

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Food Mfg	Cooling	Air-Source Heat Pump	1 kBTU/hr	Existing	6.34	15	\$21.65	3%	at stock turnover	\$0.23	2.67	0.00	Annual Energy Outlook, 2015
Food Mfg	Heating	Air-Source Heat Pump	1 kBTU/hr	Existing	3.79	15	\$21.65	3%	at stock turnover	\$0.23	1.60	0.00	Annual Energy Outlook, 2015
Food Mfg	Cooling	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Food Mfg	Heating	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Food Mfg	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	3%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Food Mfg	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	15%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Food Mfg	Ventilation	Ventilation	1000 CFM	Existing	2,269.39	20	\$1,219.71	100%	at stock turnover	\$0.05	52.60	0.00	AEG-BEST
Food Mfg	Interior Lighting	Screw-in	lamps	Existing	27.06	8	\$4.05	100%	at stock turnover	\$0.00	13.67	0.00	7th Power Plan
Food Mfg	Interior Lighting	High-Bay Fixtures	lamps	Existing	191.43	15	\$127.03	100%	at stock turnover	\$0.07	359.21	0.00	Annual Energy Outlook, 2015
Food Mfg	Interior Lighting	Linear Lighting	lamps	Existing	28.60	17	\$54.19	100%	at stock turnover	\$0.14	69.39	0.92	7th Power Plan
Food Mfg	Exterior Lighting	Screw-in	lamps	Existing	154.55	8	\$4.05	100%	at stock turnover	\$0.00	4.18	4.06	7th Power Plan
Food Mfg	Exterior Lighting	Area Lighting	lamps	Existing	2,507.81	15	\$45.69	100%	at stock turnover	-\$0.01	93.32	0.68	Annual Energy Outlook, 2015
Food Mfg	Exterior Lighting	Linear Lighting	lamps	Existing	196.34	17	\$54.19	100%	at stock turnover	\$0.02	18.75	0.34	7th Power Plan
Food Mfg	Motors	Pumps	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.17	N/A
Food Mfg	Motors	Fans & Blowers	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.03	N/A
Food Mfg	Motors	Compressed Air	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.01	N/A
Food Mfg	Motors	Material Handling	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	2.93	N/A
Food Mfg	Motors	Other Motors	1 unit	Existing	0.00	10	\$0.00	0%	at stock turnover	\$0.00	0.00	0.45	N/A
Food Mfg	Process	Process Heating	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.12	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Food Mfg	Process	Process Cooling	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.41	N/A
Food Mfg	Process	Process Refrigeration	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.06	N/A
Food Mfg	Process	Process Electrochemical	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.37	N/A
Food Mfg	Process	Process Other	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	3.06	N/A
Food Mfg	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	1.52	N/A
Food Mfg	Cooling	Air-Cooled Chiller	1 kBTU/hr	New	18.03	20	\$26.36	3%	at stock turnover	\$0.14	5.22	1.63	Annual Energy Outlook, 2015
Food Mfg	Cooling	Water-Cooled Chiller	1 kBTU/hr	New	24.90	25	\$12.65	3%	at stock turnover	\$0.05	6.28	0.23	Annual Energy Outlook, 2015
Food Mfg	Cooling	RTU	1 kBTU/hr	New	3.20	15	\$6.75	11%	at stock turnover	\$0.23	3.67	4.35	Annual Energy Outlook, 2015
Food Mfg	Cooling	Air-Source Heat Pump	1 kBTU/hr	New	6.16	15	\$21.65	3%	at stock turnover	\$0.24	1.35	38.58	Annual Energy Outlook, 2015
Food Mfg	Heating	Air-Source Heat Pump	1 kBTU/hr	New	3.64	15	\$21.65	3%	at stock turnover	\$0.24	0.80	3.27	Annual Energy Outlook, 2015
Food Mfg	Cooling	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	2.13	Annual Energy Outlook, 2015
Food Mfg	Heating	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	9.55	Annual Energy Outlook, 2015
Food Mfg	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	3%	at stock turnover	\$0.00	0.00	1.59	AEG-BEST
Food Mfg	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	15%	at stock turnover	\$0.00	0.00	9.08	AEG-BEST
Food Mfg	Ventilation	Ventilation	1000 CFM	New	1,964.09	20	\$1,219.71	100%	at stock turnover	\$0.06	26.14	12.57	AEG-BEST
Food Mfg	Interior Lighting	Screw-in	lamps	New	26.08	8	\$4.05	100%	at stock turnover	\$0.00	6.11	0.11	7th Power Plan
Food Mfg	Interior Lighting	High-Bay Fixtures	lamps	New	193.46	15	\$127.03	100%	at stock turnover	\$0.07	180.79	0.00	Annual Energy Outlook, 2015
Food Mfg	Interior Lighting	Linear Lighting	lamps	New	28.97	17	\$54.19	100%	at stock turnover	\$0.14	29.01	0.00	7th Power Plan
Food Mfg	Exterior Lighting	Screw-in	lamps	New	148.94	8	\$4.05	100%	at stock turnover	\$0.00	1.87	3.51	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Food Mfg	Exterior Lighting	Area Lighting	lamps	New	2,515.33	15	\$45.69	100%	at stock turnover	-\$0.01	46.79	3.49	Annual Energy Outlook, 2015
Food Mfg	Exterior Lighting	Linear Lighting	lamps	New	198.91	17	\$54.19	100%	at stock turnover	\$0.02	7.84	4.49	7th Power Plan
Food Mfg	Motors	Pumps	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	6.42	N/A
Food Mfg	Motors	Fans & Blowers	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	4.24	N/A
Food Mfg	Motors	Compressed Air	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Food Mfg	Motors	Material Handling	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Food Mfg	Motors	Other Motors	1 unit	New	0.00	10	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	N/A
Food Mfg	Process	Process Heating	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	22.73	N/A
Food Mfg	Process	Process Cooling	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	36.61	N/A
Food Mfg	Process	Process Refrigeration	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	12.78	N/A
Food Mfg	Process	Process Electrochemical	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	9.23	N/A
Food Mfg	Process	Process Other	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	9.17	N/A
Food Mfg	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	42.93	N/A
Paper Mfg	Cooling	Air-Cooled Chiller	1 kBTU/hr	Existing	20.95	20	\$26.36	3%	at stock turnover	\$0.12	0.00	0.12	Annual Energy Outlook, 2015
Paper Mfg	Cooling	Water-Cooled Chiller	1 kBTU/hr	Existing	28.62	25	\$12.65	3%	at stock turnover	\$0.04	0.00	15.19	Annual Energy Outlook, 2015
Paper Mfg	Cooling	RTU	1 kBTU/hr	Existing	3.29	15	\$6.75	11%	at stock turnover	\$0.22	0.00	0.85	Annual Energy Outlook, 2015
Paper Mfg	Cooling	Air-Source Heat Pump	1 kBTU/hr	Existing	6.34	15	\$21.65	3%	at stock turnover	\$0.23	0.00	0.76	Annual Energy Outlook, 2015
Paper Mfg	Heating	Air-Source Heat Pump	1 kBTU/hr	Existing	3.79	15	\$21.65	3%	at stock turnover	\$0.23	0.00	1.39	Annual Energy Outlook, 2015
Paper Mfg	Cooling	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Paper Mfg	Heating	Geothermal Heat Pump	1 kBtu/hr	Existing	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.02	Annual Energy Outlook, 2015
Paper Mfg	Heating	Electric Furnace	1 kBtu/hr	Existing	0.00	18	\$0.00	3%	at stock turnover	\$0.00	0.00	0.09	AEG-BEST
Paper Mfg	Heating	Electric Room Heat	3.5 kBtu/hr	Existing	0.00	18	\$0.00	15%	at stock turnover	\$0.00	0.00	0.01	AEG-BEST
Paper Mfg	Ventilation	Ventilation	1000 CFM	Existing	2,269.39	20	\$1,219.71	100%	at stock turnover	\$0.05	0.00	0.01	AEG-BEST
Paper Mfg	Interior Lighting	Screw-in	lamps	Existing	27.06	8	\$4.05	100%	at stock turnover	\$0.00	0.00	0.00	7th Power Plan
Paper Mfg	Interior Lighting	High-Bay Fixtures	lamps	Existing	191.43	15	\$127.03	100%	at stock turnover	\$0.07	0.02	0.00	Annual Energy Outlook, 2015
Paper Mfg	Interior Lighting	Linear Lighting	lamps	Existing	28.60	17	\$54.19	100%	at stock turnover	\$0.14	0.00	0.00	7th Power Plan
Paper Mfg	Exterior Lighting	Screw-in	lamps	Existing	154.55	8	\$4.05	100%	at stock turnover	\$0.00	0.00	0.06	7th Power Plan
Paper Mfg	Exterior Lighting	Area Lighting	lamps	Existing	2,507.81	15	\$45.69	100%	at stock turnover	-\$0.01	0.01	0.01	Annual Energy Outlook, 2015
Paper Mfg	Exterior Lighting	Linear Lighting	lamps	Existing	196.34	17	\$54.19	100%	at stock turnover	\$0.02	0.00	0.00	7th Power Plan
Paper Mfg	Motors	Pumps	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.01	N/A
Paper Mfg	Motors	Fans & Blowers	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Paper Mfg	Motors	Compressed Air	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Paper Mfg	Motors	Material Handling	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.04	N/A
Paper Mfg	Motors	Other Motors	1 unit	Existing	0.00	10	\$0.00	0%	at stock turnover	\$0.00	0.00	0.02	N/A
Paper Mfg	Process	Process Heating	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.02	N/A
Paper Mfg	Process	Process Cooling	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Paper Mfg	Process	Process Refrigeration	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.05	N/A
Paper Mfg	Process	Process Electrochemical	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.46	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Paper Mfg	Process	Process Other	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.01	N/A
Paper Mfg	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.01	N/A
Paper Mfg	Cooling	Air-Cooled Chiller	1 kBTU/hr	New	18.03	20	\$26.36	3%	at stock turnover	\$0.14	0.00	0.03	Annual Energy Outlook, 2015
Paper Mfg	Cooling	Water-Cooled Chiller	1 kBTU/hr	New	24.90	25	\$12.65	3%	at stock turnover	\$0.05	0.00	0.00	Annual Energy Outlook, 2015
Paper Mfg	Cooling	RTU	1 kBTU/hr	New	3.20	15	\$6.75	11%	at stock turnover	\$0.23	0.00	0.47	Annual Energy Outlook, 2015
Paper Mfg	Cooling	Air-Source Heat Pump	1 kBTU/hr	New	6.16	15	\$21.65	3%	at stock turnover	\$0.24	0.00	0.64	Annual Energy Outlook, 2015
Paper Mfg	Heating	Air-Source Heat Pump	1 kBTU/hr	New	3.64	15	\$21.65	3%	at stock turnover	\$0.24	0.00	0.00	Annual Energy Outlook, 2015
Paper Mfg	Cooling	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Paper Mfg	Heating	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Paper Mfg	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	3%	at stock turnover	\$0.00	0.00	0.05	AEG-BEST
Paper Mfg	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	15%	at stock turnover	\$0.00	0.00	0.04	AEG-BEST
Paper Mfg	Ventilation	Ventilation	1000 CFM	New	1,964.09	20	\$1,219.71	100%	at stock turnover	\$0.06	0.00	0.05	AEG-BEST
Paper Mfg	Interior Lighting	Screw-in	lamps	New	26.08	8	\$4.05	100%	at stock turnover	\$0.00	0.00	0.04	7th Power Plan
Paper Mfg	Interior Lighting	High-Bay Fixtures	lamps	New	193.46	15	\$127.03	100%	at stock turnover	\$0.07	0.02	0.04	Annual Energy Outlook, 2015
Paper Mfg	Interior Lighting	Linear Lighting	lamps	New	28.97	17	\$54.19	100%	at stock turnover	\$0.14	0.00	0.00	7th Power Plan
Paper Mfg	Exterior Lighting	Screw-in	lamps	New	148.94	8	\$4.05	100%	at stock turnover	\$0.00	0.00	0.00	7th Power Plan
Paper Mfg	Exterior Lighting	Area Lighting	lamps	New	2,515.33	15	\$45.69	100%	at stock turnover	-\$0.01	0.00	0.00	Annual Energy Outlook, 2015
Paper Mfg	Exterior Lighting	Linear Lighting	lamps	New	198.91	17	\$54.19	100%	at stock turnover	\$0.02	0.00	0.00	7th Power Plan
Paper Mfg	Motors	Pumps	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Paper Mfg	Motors	Fans & Blowers	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	2.29	N/A
Paper Mfg	Motors	Compressed Air	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	2.26	N/A
Paper Mfg	Motors	Material Handling	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	2.01	N/A
Paper Mfg	Motors	Other Motors	1 unit	New	0.00	10	\$0.00	0%	at stock turnover	\$0.00	0.00	3.74	N/A
Paper Mfg	Process	Process Heating	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	4.39	N/A
Paper Mfg	Process	Process Cooling	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	6.55	N/A
Paper Mfg	Process	Process Refrigeration	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.25	N/A
Paper Mfg	Process	Process Electrochemical	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Paper Mfg	Process	Process Other	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Paper Mfg	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.05	N/A
Petroleum Refining	Cooling	Air-Cooled Chiller	1 kBTU/hr	Existing	20.95	20	\$26.36	3%	at stock turnover	\$0.12	0.02	0.29	Annual Energy Outlook, 2015
Petroleum Refining	Cooling	Water-Cooled Chiller	1 kBTU/hr	Existing	28.62	25	\$12.65	3%	at stock turnover	\$0.04	0.02	0.09	Annual Energy Outlook, 2015
Petroleum Refining	Cooling	RTU	1 kBTU/hr	Existing	3.29	15	\$6.75	11%	at stock turnover	\$0.22	0.02	0.00	Annual Energy Outlook, 2015
Petroleum Refining	Cooling	Air-Source Heat Pump	1 kBTU/hr	Existing	6.34	15	\$21.65	3%	at stock turnover	\$0.23	0.01	0.02	Annual Energy Outlook, 2015
Petroleum Refining	Heating	Air-Source Heat Pump	1 kBTU/hr	Existing	3.79	15	\$21.65	3%	at stock turnover	\$0.23	0.00	0.00	Annual Energy Outlook, 2015
Petroleum Refining	Cooling	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.03	Annual Energy Outlook, 2015
Petroleum Refining	Heating	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.35	Annual Energy Outlook, 2015
Petroleum Refining	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	3%	at stock turnover	\$0.00	0.00	0.83	AEG-BEST
Petroleum Refining	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	15%	at stock turnover	\$0.00	0.00	0.22	AEG-BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Petroleum Refining	Ventilation	Ventilation	1000 CFM	Existing	2,269.39	20	\$1,219.71	100%	at stock turnover	\$0.05	0.11	1.87	AEG-BEST
Petroleum Refining	Interior Lighting	Screw-in	lamps	Existing	27.06	8	\$4.05	100%	at stock turnover	\$0.00	0.02	0.71	7th Power Plan
Petroleum Refining	Interior Lighting	High-Bay Fixtures	lamps	Existing	191.43	15	\$127.03	100%	at stock turnover	\$0.07	0.57	0.00	Annual Energy Outlook, 2015
Petroleum Refining	Interior Lighting	Linear Lighting	lamps	Existing	28.60	17	\$54.19	100%	at stock turnover	\$0.14	0.11	0.00	7th Power Plan
Petroleum Refining	Exterior Lighting	Screw-in	lamps	Existing	154.55	8	\$4.05	100%	at stock turnover	\$0.00	0.01	0.00	7th Power Plan
Petroleum Refining	Exterior Lighting	Area Lighting	lamps	Existing	2,507.81	15	\$45.69	100%	at stock turnover	-\$0.01	0.15	0.00	Annual Energy Outlook, 2015
Petroleum Refining	Exterior Lighting	Linear Lighting	lamps	Existing	196.34	17	\$54.19	100%	at stock turnover	\$0.02	0.03	0.00	7th Power Plan
Petroleum Refining	Motors	Pumps	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Petroleum Refining	Motors	Fans & Blowers	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Petroleum Refining	Motors	Compressed Air	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Petroleum Refining	Motors	Material Handling	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Petroleum Refining	Motors	Other Motors	1 unit	Existing	0.00	10	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	N/A
Petroleum Refining	Process	Process Heating	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Petroleum Refining	Process	Process Cooling	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Petroleum Refining	Process	Process Refrigeration	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Petroleum Refining	Process	Process Electrochemical	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Petroleum Refining	Process	Process Other	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Petroleum Refining	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Petroleum Refining	Cooling	Air-Cooled Chiller	1 kBtu/hr	New	18.03	20	\$26.36	3%	at stock turnover	\$0.14	0.01	0.00	Annual Energy Outlook, 2015

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Petroleum Refining	Cooling	Water-Cooled Chiller	1 kBTU/hr	New	24.90	25	\$12.65	3%	at stock turnover	\$0.05	0.01	0.00	Annual Energy Outlook, 2015
Petroleum Refining	Cooling	RTU	1 kBTU/hr	New	3.20	15	\$6.75	11%	at stock turnover	\$0.23	0.01	0.00	Annual Energy Outlook, 2015
Petroleum Refining	Cooling	Air-Source Heat Pump	1 kBTU/hr	New	6.16	15	\$21.65	3%	at stock turnover	\$0.24	0.00	0.00	Annual Energy Outlook, 2015
Petroleum Refining	Heating	Air-Source Heat Pump	1 kBTU/hr	New	3.64	15	\$21.65	3%	at stock turnover	\$0.24	0.00	0.00	Annual Energy Outlook, 2015
Petroleum Refining	Cooling	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Petroleum Refining	Heating	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Petroleum Refining	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	3%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Petroleum Refining	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	15%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Petroleum Refining	Ventilation	Ventilation	1000 CFM	New	1,964.09	20	\$1,219.71	100%	at stock turnover	\$0.06	0.06	0.00	AEG-BEST
Petroleum Refining	Interior Lighting	Screw-in	lamps	New	26.08	8	\$4.05	100%	at stock turnover	\$0.00	0.01	0.00	7th Power Plan
Petroleum Refining	Interior Lighting	High-Bay Fixtures	lamps	New	193.46	15	\$127.03	100%	at stock turnover	\$0.07	0.36	0.00	Annual Energy Outlook, 2015
Petroleum Refining	Interior Lighting	Linear Lighting	lamps	New	28.97	17	\$54.19	100%	at stock turnover	\$0.14	0.07	0.00	7th Power Plan
Petroleum Refining	Exterior Lighting	Screw-in	lamps	New	148.94	8	\$4.05	100%	at stock turnover	\$0.00	0.00	0.00	7th Power Plan
Petroleum Refining	Exterior Lighting	Area Lighting	lamps	New	2,515.33	15	\$45.69	100%	at stock turnover	-\$0.01	0.09	0.00	Annual Energy Outlook, 2015
Petroleum Refining	Exterior Lighting	Linear Lighting	lamps	New	198.91	17	\$54.19	100%	at stock turnover	\$0.02	0.02	0.00	7th Power Plan
Petroleum Refining	Motors	Pumps	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.04	N/A
Petroleum Refining	Motors	Fans & Blowers	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Petroleum Refining	Motors	Compressed Air	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Petroleum Refining	Motors	Material Handling	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.01	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Petroleum Refining	Motors	Other Motors	1 unit	New	0.00	10	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	N/A
Petroleum Refining	Process	Process Heating	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.32	N/A
Petroleum Refining	Process	Process Cooling	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.02	N/A
Petroleum Refining	Process	Process Refrigeration	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.01	N/A
Petroleum Refining	Process	Process Electrochemical	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Petroleum Refining	Process	Process Other	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Petroleum Refining	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Cooling	Air-Cooled Chiller	1 kBTU/hr	Existing	20.95	20	\$26.36	3%	at stock turnover	\$0.12	0.04	0.00	Annual Energy Outlook, 2015
Stone Clay Glass Products	Cooling	Water-Cooled Chiller	1 kBTU/hr	Existing	28.62	25	\$12.65	3%	at stock turnover	\$0.04	0.06	0.00	Annual Energy Outlook, 2015
Stone Clay Glass Products	Cooling	RTU	1 kBTU/hr	Existing	3.29	15	\$6.75	11%	at stock turnover	\$0.22	0.04	0.00	Annual Energy Outlook, 2015
Stone Clay Glass Products	Cooling	Air-Source Heat Pump	1 kBTU/hr	Existing	6.34	15	\$21.65	3%	at stock turnover	\$0.23	0.01	0.00	Annual Energy Outlook, 2015
Stone Clay Glass Products	Heating	Air-Source Heat Pump	1 kBTU/hr	Existing	3.79	15	\$21.65	3%	at stock turnover	\$0.23	0.01	0.43	Annual Energy Outlook, 2015
Stone Clay Glass Products	Cooling	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	1.91	Annual Energy Outlook, 2015
Stone Clay Glass Products	Heating	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.32	Annual Energy Outlook, 2015
Stone Clay Glass Products	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	3%	at stock turnover	\$0.00	0.00	0.16	AEG-BEST
Stone Clay Glass Products	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	15%	at stock turnover	\$0.00	0.00	0.08	AEG-BEST
Stone Clay Glass Products	Ventilation	Ventilation	1000 CFM	Existing	2,269.39	20	\$1,219.71	100%	at stock turnover	\$0.05	0.26	0.01	AEG-BEST
Stone Clay Glass Products	Interior Lighting	Screw-in	lamps	Existing	27.06	8	\$4.05	100%	at stock turnover	\$0.00	0.06	0.00	7th Power Plan
Stone Clay Glass Products	Interior Lighting	High-Bay Fixtures	lamps	Existing	191.43	15	\$127.03	100%	at stock turnover	\$0.07	1.67	1.38	Annual Energy Outlook, 2015

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Stone Clay Glass Products	Interior Lighting	Linear Lighting	lamps	Existing	28.60	17	\$54.19	100%	at stock turnover	\$0.14	0.32	0.21	7th Power Plan
Stone Clay Glass Products	Exterior Lighting	Screw-in	lamps	Existing	154.55	8	\$4.05	100%	at stock turnover	\$0.00	0.02	0.06	7th Power Plan
Stone Clay Glass Products	Exterior Lighting	Area Lighting	lamps	Existing	2,507.81	15	\$45.69	100%	at stock turnover	-\$0.01	0.43	0.19	Annual Energy Outlook, 2015
Stone Clay Glass Products	Exterior Lighting	Linear Lighting	lamps	Existing	196.34	17	\$54.19	100%	at stock turnover	\$0.02	0.09	0.03	7th Power Plan
Stone Clay Glass Products	Motors	Pumps	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.18	N/A
Stone Clay Glass Products	Motors	Fans & Blowers	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	1.44	N/A
Stone Clay Glass Products	Motors	Compressed Air	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.71	N/A
Stone Clay Glass Products	Motors	Material Handling	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.78	N/A
Stone Clay Glass Products	Motors	Other Motors	1 unit	Existing	0.00	10	\$0.00	0%	at stock turnover	\$0.00	0.00	0.11	N/A
Stone Clay Glass Products	Process	Process Heating	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	2.03	N/A
Stone Clay Glass Products	Process	Process Cooling	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	18.12	N/A
Stone Clay Glass Products	Process	Process Refrigeration	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	1.54	N/A
Stone Clay Glass Products	Process	Process Electrochemical	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	1.00	N/A
Stone Clay Glass Products	Process	Process Other	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	4.48	N/A
Stone Clay Glass Products	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.75	N/A
Stone Clay Glass Products	Cooling	Air-Cooled Chiller	1 kBTU/hr	New	18.03	20	\$26.36	3%	at stock turnover	\$0.14	0.03	4.15	Annual Energy Outlook, 2015
Stone Clay Glass Products	Cooling	Water-Cooled Chiller	1 kBTU/hr	New	24.90	25	\$12.65	3%	at stock turnover	\$0.05	0.03	5.64	Annual Energy Outlook, 2015
Stone Clay Glass Products	Cooling	RTU	1 kBTU/hr	New	3.20	15	\$6.75	11%	at stock turnover	\$0.23	0.02	0.02	Annual Energy Outlook, 2015
Stone Clay Glass Products	Cooling	Air-Source Heat Pump	1 kBTU/hr	New	6.16	15	\$21.65	3%	at stock turnover	\$0.24	0.01	0.00	Annual Energy Outlook, 2015

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Stone Clay Glass Products	Heating	Air-Source Heat Pump	1 kBtu/hr	New	3.64	15	\$21.65	3%	at stock turnover	\$0.24	0.00	0.00	Annual Energy Outlook, 2015
Stone Clay Glass Products	Cooling	Geothermal Heat Pump	1 kBtu/hr	New	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.79	Annual Energy Outlook, 2015
Stone Clay Glass Products	Heating	Geothermal Heat Pump	1 kBtu/hr	New	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.78	Annual Energy Outlook, 2015
Stone Clay Glass Products	Heating	Electric Furnace	1 kBtu/hr	New	0.00	18	\$0.00	3%	at stock turnover	\$0.00	0.00	1.01	AEG-BEST
Stone Clay Glass Products	Heating	Electric Room Heat	3.5 kBtu/hr	New	0.00	18	\$0.00	15%	at stock turnover	\$0.00	0.00	1.45	AEG-BEST
Stone Clay Glass Products	Ventilation	Ventilation	1000 CFM	New	1,964.09	20	\$1,219.71	100%	at stock turnover	\$0.06	0.14	0.96	AEG-BEST
Stone Clay Glass Products	Interior Lighting	Screw-in	lamps	New	26.08	8	\$4.05	100%	at stock turnover	\$0.00	0.03	0.00	7th Power Plan
Stone Clay Glass Products	Interior Lighting	High-Bay Fixtures	lamps	New	193.46	15	\$127.03	100%	at stock turnover	\$0.07	0.97	0.00	Annual Energy Outlook, 2015
Stone Clay Glass Products	Interior Lighting	Linear Lighting	lamps	New	28.97	17	\$54.19	100%	at stock turnover	\$0.14	0.17	0.00	7th Power Plan
Stone Clay Glass Products	Exterior Lighting	Screw-in	lamps	New	148.94	8	\$4.05	100%	at stock turnover	\$0.00	0.01	1.26	7th Power Plan
Stone Clay Glass Products	Exterior Lighting	Area Lighting	lamps	New	2,515.33	15	\$45.69	100%	at stock turnover	-\$0.01	0.25	2.03	Annual Energy Outlook, 2015
Stone Clay Glass Products	Exterior Lighting	Linear Lighting	lamps	New	198.91	17	\$54.19	100%	at stock turnover	\$0.02	0.05	0.91	7th Power Plan
Stone Clay Glass Products	Motors	Pumps	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.66	N/A
Stone Clay Glass Products	Motors	Fans & Blowers	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.65	N/A
Stone Clay Glass Products	Motors	Compressed Air	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.78	N/A
Stone Clay Glass Products	Motors	Material Handling	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.92	N/A
Stone Clay Glass Products	Motors	Other Motors	1 unit	New	0.00	10	\$0.00	0%	at stock turnover	\$0.00	0.00	1.37	N/A
Stone Clay Glass Products	Process	Process Heating	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	5.53	N/A
Stone Clay Glass Products	Process	Process Cooling	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Stone Clay Glass Products	Process	Process Refrigeration	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Process	Process Electrochemical	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	1.05	N/A
Stone Clay Glass Products	Process	Process Other	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	5.36	N/A
Stone Clay Glass Products	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	1.30	N/A
Transportation Equipment Mfg	Cooling	Air-Cooled Chiller	1 kBTU/hr	Existing	20.95	20	\$26.36	3%	at stock turnover	\$0.12	0.10	0.03	Annual Energy Outlook, 2015
Transportation Equipment Mfg	Cooling	Water-Cooled Chiller	1 kBTU/hr	Existing	28.62	25	\$12.65	3%	at stock turnover	\$0.04	0.13	0.16	Annual Energy Outlook, 2015
Transportation Equipment Mfg	Cooling	RTU	1 kBTU/hr	Existing	3.29	15	\$6.75	11%	at stock turnover	\$0.22	0.08	0.00	Annual Energy Outlook, 2015
Transportation Equipment Mfg	Cooling	Air-Source Heat Pump	1 kBTU/hr	Existing	6.34	15	\$21.65	3%	at stock turnover	\$0.23	0.03	0.16	Annual Energy Outlook, 2015
Transportation Equipment Mfg	Heating	Air-Source Heat Pump	1 kBTU/hr	Existing	3.79	15	\$21.65	3%	at stock turnover	\$0.23	0.02	0.94	Annual Energy Outlook, 2015
Transportation Equipment Mfg	Cooling	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.24	Annual Energy Outlook, 2015
Transportation Equipment Mfg	Heating	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.06	Annual Energy Outlook, 2015
Transportation Equipment Mfg	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	3%	at stock turnover	\$0.00	0.00	0.48	AEG-BEST
Transportation Equipment Mfg	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	15%	at stock turnover	\$0.00	0.00	0.28	AEG-BEST
Transportation Equipment Mfg	Ventilation	Ventilation	1000 CFM	Existing	2,269.39	20	\$1,219.71	100%	at stock turnover	\$0.05	0.58	0.00	AEG-BEST
Transportation Equipment Mfg	Interior Lighting	Screw-in	lamps	Existing	27.06	8	\$4.05	100%	at stock turnover	\$0.00	0.13	0.00	7th Power Plan
Transportation Equipment Mfg	Interior Lighting	High-Bay Fixtures	lamps	Existing	191.43	15	\$127.03	100%	at stock turnover	\$0.07	3.35	0.00	Annual Energy Outlook, 2015
Transportation Equipment Mfg	Interior Lighting	Linear Lighting	lamps	Existing	28.60	17	\$54.19	100%	at stock turnover	\$0.14	0.64	0.00	7th Power Plan
Transportation Equipment Mfg	Exterior Lighting	Screw-in	lamps	Existing	154.55	8	\$4.05	100%	at stock turnover	\$0.00	0.04	0.00	7th Power Plan
Transportation Equipment Mfg	Exterior Lighting	Area Lighting	lamps	Existing	2,507.81	15	\$45.69	100%	at stock turnover	-\$0.01	0.87	0.00	Annual Energy Outlook, 2015

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Transportation Equipment Mfg	Exterior Lighting	Linear Lighting	lamps	Existing	196.34	17	\$54.19	100%	at stock turnover	\$0.02	0.17	0.00	7th Power Plan
Transportation Equipment Mfg	Motors	Pumps	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Motors	Fans & Blowers	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Motors	Compressed Air	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Motors	Material Handling	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Motors	Other Motors	1 unit	Existing	0.00	10	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Process	Process Heating	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Process	Process Cooling	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Process	Process Refrigeration	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Process	Process Electrochemical	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Process	Process Other	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Cooling	Air-Cooled Chiller	1 kBTU/hr	New	18.03	20	\$26.36	3%	at stock turnover	\$0.14	0.06	0.00	Annual Energy Outlook, 2015
Transportation Equipment Mfg	Cooling	Water-Cooled Chiller	1 kBTU/hr	New	24.90	25	\$12.65	3%	at stock turnover	\$0.05	0.07	0.00	Annual Energy Outlook, 2015
Transportation Equipment Mfg	Cooling	RTU	1 kBTU/hr	New	3.20	15	\$6.75	11%	at stock turnover	\$0.23	0.05	0.00	Annual Energy Outlook, 2015
Transportation Equipment Mfg	Cooling	Air-Source Heat Pump	1 kBTU/hr	New	6.16	15	\$21.65	3%	at stock turnover	\$0.24	0.02	0.00	Annual Energy Outlook, 2015
Transportation Equipment Mfg	Heating	Air-Source Heat Pump	1 kBTU/hr	New	3.64	15	\$21.65	3%	at stock turnover	\$0.24	0.01	0.00	Annual Energy Outlook, 2015
Transportation Equipment Mfg	Cooling	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Transportation Equipment Mfg	Heating	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Transportation Equipment Mfg	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	3%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Transportation Equipment Mfg	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	15%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Transportation Equipment Mfg	Ventilation	Ventilation	1000 CFM	New	1,964.09	20	\$1,219.71	100%	at stock turnover	\$0.06	0.33	0.02	AEG-BEST
Transportation Equipment Mfg	Interior Lighting	Screw-in	lamps	New	26.08	8	\$4.05	100%	at stock turnover	\$0.00	0.07	0.04	7th Power Plan
Transportation Equipment Mfg	Interior Lighting	High-Bay Fixtures	lamps	New	193.46	15	\$127.03	100%	at stock turnover	\$0.07	1.98	0.01	Annual Energy Outlook, 2015
Transportation Equipment Mfg	Interior Lighting	Linear Lighting	lamps	New	28.97	17	\$54.19	100%	at stock turnover	\$0.14	0.35	0.03	7th Power Plan
Transportation Equipment Mfg	Exterior Lighting	Screw-in	lamps	New	148.94	8	\$4.05	100%	at stock turnover	\$0.00	0.02	0.01	7th Power Plan
Transportation Equipment Mfg	Exterior Lighting	Area Lighting	lamps	New	2,515.33	15	\$45.69	100%	at stock turnover	-\$0.01	0.51	0.13	Annual Energy Outlook, 2015
Transportation Equipment Mfg	Exterior Lighting	Linear Lighting	lamps	New	198.91	17	\$54.19	100%	at stock turnover	\$0.02	0.09	0.04	7th Power Plan
Transportation Equipment Mfg	Motors	Pumps	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.04	N/A
Transportation Equipment Mfg	Motors	Fans & Blowers	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Motors	Compressed Air	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Motors	Material Handling	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Motors	Other Motors	1 unit	New	0.00	10	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Process	Process Heating	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Process	Process Cooling	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.24	N/A
Transportation Equipment Mfg	Process	Process Refrigeration	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.05	N/A
Transportation Equipment Mfg	Process	Process Electrochemical	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	1.03	N/A
Transportation Equipment Mfg	Process	Process Other	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.35	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Transportation Equipment Mfg	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.28	N/A
Wastewater	Cooling	Air-Cooled Chiller	1 kBTU/hr	Existing	20.95	20	\$26.36	3%	at stock turnover	\$0.12	0.27	0.00	Annual Energy Outlook, 2015
Wastewater	Cooling	Water-Cooled Chiller	1 kBTU/hr	Existing	28.62	25	\$12.65	3%	at stock turnover	\$0.04	0.36	0.00	Annual Energy Outlook, 2015
Wastewater	Cooling	RTU	1 kBTU/hr	Existing	3.29	15	\$6.75	11%	at stock turnover	\$0.22	0.22	0.14	Annual Energy Outlook, 2015
Wastewater	Cooling	Air-Source Heat Pump	1 kBTU/hr	Existing	6.34	15	\$21.65	3%	at stock turnover	\$0.23	0.08	0.67	Annual Energy Outlook, 2015
Wastewater	Heating	Air-Source Heat Pump	1 kBTU/hr	Existing	3.79	15	\$21.65	3%	at stock turnover	\$0.23	0.05	0.09	Annual Energy Outlook, 2015
Wastewater	Cooling	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.05	Annual Energy Outlook, 2015
Wastewater	Heating	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.03	Annual Energy Outlook, 2015
Wastewater	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	3%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Wastewater	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	15%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Wastewater	Ventilation	Ventilation	1000 CFM	Existing	2,269.39	20	\$1,219.71	100%	at stock turnover	\$0.05	1.55	0.46	AEG-BEST
Wastewater	Interior Lighting	Screw-in	lamps	Existing	27.06	8	\$4.05	100%	at stock turnover	\$0.00	0.44	0.06	7th Power Plan
Wastewater	Interior Lighting	High-Bay Fixtures	lamps	Existing	191.43	15	\$127.03	100%	at stock turnover	\$0.07	11.53	0.02	Annual Energy Outlook, 2015
Wastewater	Interior Lighting	Linear Lighting	lamps	Existing	28.60	17	\$54.19	100%	at stock turnover	\$0.14	2.20	0.06	7th Power Plan
Wastewater	Exterior Lighting	Screw-in	lamps	Existing	154.55	8	\$4.05	100%	at stock turnover	\$0.00	0.13	0.01	7th Power Plan
Wastewater	Exterior Lighting	Area Lighting	lamps	Existing	2,507.81	15	\$45.69	100%	at stock turnover	-\$0.01	3.00	0.02	Annual Energy Outlook, 2015
Wastewater	Exterior Lighting	Linear Lighting	lamps	Existing	196.34	17	\$54.19	100%	at stock turnover	\$0.02	0.60	0.25	7th Power Plan
Wastewater	Motors	Pumps	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.12	N/A
Wastewater	Motors	Fans & Blowers	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.11	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Wastewater	Motors	Compressed Air	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.02	N/A
Wastewater	Motors	Material Handling	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.34	N/A
Wastewater	Motors	Other Motors	1 unit	Existing	0.00	10	\$0.00	0%	at stock turnover	\$0.00	0.00	3.13	N/A
Wastewater	Process	Process Heating	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.06	N/A
Wastewater	Process	Process Cooling	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.04	N/A
Wastewater	Process	Process Refrigeration	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.20	N/A
Wastewater	Process	Process Electrochemical	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.03	N/A
Wastewater	Process	Process Other	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	6.00	N/A
Wastewater	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	8.19	N/A
Wastewater	Cooling	Air-Cooled Chiller	1 kBTU/hr	New	18.03	20	\$26.36	3%	at stock turnover	\$0.14	0.17	0.01	Annual Energy Outlook, 2015
Wastewater	Cooling	Water-Cooled Chiller	1 kBTU/hr	New	24.90	25	\$12.65	3%	at stock turnover	\$0.05	0.19	0.00	Annual Energy Outlook, 2015
Wastewater	Cooling	RTU	1 kBTU/hr	New	3.20	15	\$6.75	11%	at stock turnover	\$0.23	0.12	0.00	Annual Energy Outlook, 2015
Wastewater	Cooling	Air-Source Heat Pump	1 kBTU/hr	New	6.16	15	\$21.65	3%	at stock turnover	\$0.24	0.04	0.50	Annual Energy Outlook, 2015
Wastewater	Heating	Air-Source Heat Pump	1 kBTU/hr	New	3.64	15	\$21.65	3%	at stock turnover	\$0.24	0.03	0.43	Annual Energy Outlook, 2015
Wastewater	Cooling	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.42	Annual Energy Outlook, 2015
Wastewater	Heating	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.36	Annual Energy Outlook, 2015
Wastewater	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	3%	at stock turnover	\$0.00	0.00	0.37	AEG-BEST
Wastewater	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	15%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Wastewater	Ventilation	Ventilation	1000 CFM	New	1,964.09	20	\$1,219.71	100%	at stock turnover	\$0.06	0.86	0.00	AEG-BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Wastewater	Interior Lighting	Screw-in	lamps	New	26.08	8	\$4.05	100%	at stock turnover	\$0.00	0.23	0.00	7th Power Plan
Wastewater	Interior Lighting	High-Bay Fixtures	lamps	New	193.46	15	\$127.03	100%	at stock turnover	\$0.07	6.55	0.20	Annual Energy Outlook, 2015
Wastewater	Interior Lighting	Linear Lighting	lamps	New	28.97	17	\$54.19	100%	at stock turnover	\$0.14	1.14	0.32	7th Power Plan
Wastewater	Exterior Lighting	Screw-in	lamps	New	148.94	8	\$4.05	100%	at stock turnover	\$0.00	0.07	6.27	7th Power Plan
Wastewater	Exterior Lighting	Area Lighting	lamps	New	2,515.33	15	\$45.69	100%	at stock turnover	-\$0.01	1.70	6.90	Annual Energy Outlook, 2015
Wastewater	Exterior Lighting	Linear Lighting	lamps	New	198.91	17	\$54.19	100%	at stock turnover	\$0.02	0.31	6.25	7th Power Plan
Wastewater	Motors	Pumps	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	3.42	N/A
Wastewater	Motors	Fans & Blowers	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	4.04	N/A
Wastewater	Motors	Compressed Air	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	6.07	N/A
Wastewater	Motors	Material Handling	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	4.88	N/A
Wastewater	Motors	Other Motors	1 unit	New	0.00	10	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	N/A
Wastewater	Process	Process Heating	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Wastewater	Process	Process Cooling	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.94	N/A
Wastewater	Process	Process Refrigeration	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	4.77	N/A
Wastewater	Process	Process Electrochemical	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	1.48	N/A
Wastewater	Process	Process Other	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.07	N/A
Wastewater	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.41	N/A
Water	Cooling	Air-Cooled Chiller	1 kBTU/hr	Existing	20.95	20	\$26.36	3%	at stock turnover	\$0.12	0.44	0.00	Annual Energy Outlook, 2015
Water	Cooling	Water-Cooled Chiller	1 kBTU/hr	Existing	28.62	25	\$12.65	3%	at stock turnover	\$0.04	0.59	0.07	Annual Energy Outlook, 2015

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Water	Cooling	RTU	1 kBTU/hr	Existing	3.29	15	\$6.75	11%	at stock turnover	\$0.22	0.37	1.32	Annual Energy Outlook, 2015
Water	Cooling	Air-Source Heat Pump	1 kBTU/hr	Existing	6.34	15	\$21.65	3%	at stock turnover	\$0.23	0.13	0.19	Annual Energy Outlook, 2015
Water	Heating	Air-Source Heat Pump	1 kBTU/hr	Existing	3.79	15	\$21.65	3%	at stock turnover	\$0.23	0.08	0.05	Annual Energy Outlook, 2015
Water	Cooling	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.43	Annual Energy Outlook, 2015
Water	Heating	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.17	Annual Energy Outlook, 2015
Water	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	3%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Water	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	15%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Water	Ventilation	Ventilation	1000 CFM	Existing	2,269.39	20	\$1,219.71	100%	at stock turnover	\$0.05	2.56	0.00	AEG-BEST
Water	Interior Lighting	Screw-in	lamps	Existing	27.06	8	\$4.05	100%	at stock turnover	\$0.00	0.72	0.00	7th Power Plan
Water	Interior Lighting	High-Bay Fixtures	lamps	Existing	191.43	15	\$127.03	100%	at stock turnover	\$0.07	19.03	0.00	Annual Energy Outlook, 2015
Water	Interior Lighting	Linear Lighting	lamps	Existing	28.60	17	\$54.19	100%	at stock turnover	\$0.14	3.66	0.00	7th Power Plan
Water	Exterior Lighting	Screw-in	lamps	Existing	154.55	8	\$4.05	100%	at stock turnover	\$0.00	0.22	0.00	7th Power Plan
Water	Exterior Lighting	Area Lighting	lamps	Existing	2,507.81	15	\$45.69	100%	at stock turnover	-\$0.01	4.94	0.00	Annual Energy Outlook, 2015
Water	Exterior Lighting	Linear Lighting	lamps	Existing	196.34	17	\$54.19	100%	at stock turnover	\$0.02	0.99	0.00	7th Power Plan
Water	Motors	Pumps	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Water	Motors	Fans & Blowers	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Water	Motors	Compressed Air	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Water	Motors	Material Handling	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	3.68	N/A
Water	Motors	Other Motors	1 unit	Existing	0.00	10	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Water	Process	Process Heating	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Water	Process	Process Cooling	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Water	Process	Process Refrigeration	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Water	Process	Process Electrochemical	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Water	Process	Process Other	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Water	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Water	Cooling	Air-Cooled Chiller	1 kBTU/hr	New	18.03	20	\$26.36	3%	at stock turnover	\$0.14	0.26	0.00	Annual Energy Outlook, 2015
Water	Cooling	Water-Cooled Chiller	1 kBTU/hr	New	24.90	25	\$12.65	3%	at stock turnover	\$0.05	0.31	0.00	Annual Energy Outlook, 2015
Water	Cooling	RTU	1 kBTU/hr	New	3.20	15	\$6.75	11%	at stock turnover	\$0.23	0.18	0.00	Annual Energy Outlook, 2015
Water	Cooling	Air-Source Heat Pump	1 kBTU/hr	New	6.16	15	\$21.65	3%	at stock turnover	\$0.24	0.07	0.00	Annual Energy Outlook, 2015
Water	Heating	Air-Source Heat Pump	1 kBTU/hr	New	3.64	15	\$21.65	3%	at stock turnover	\$0.24	0.04	0.00	Annual Energy Outlook, 2015
Water	Cooling	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Water	Heating	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Water	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	3%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Water	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	15%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Water	Ventilation	Ventilation	1000 CFM	New	1,964.09	20	\$1,219.71	100%	at stock turnover	\$0.06	1.30	0.00	AEG-BEST
Water	Interior Lighting	Screw-in	lamps	New	26.08	8	\$4.05	100%	at stock turnover	\$0.00	0.33	0.00	7th Power Plan
Water	Interior Lighting	High-Bay Fixtures	lamps	New	193.46	15	\$127.03	100%	at stock turnover	\$0.07	9.83	0.00	Annual Energy Outlook, 2015
Water	Interior Lighting	Linear Lighting	lamps	New	28.97	17	\$54.19	100%	at stock turnover	\$0.14	1.61	0.01	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Water	Exterior Lighting	Screw-in	lamps	New	148.94	8	\$4.05	100%	at stock turnover	\$0.00	0.10	0.01	7th Power Plan
Water	Exterior Lighting	Area Lighting	lamps	New	2,515.33	15	\$45.69	100%	at stock turnover	-\$0.01	2.54	0.00	Annual Energy Outlook, 2015
Water	Exterior Lighting	Linear Lighting	lamps	New	198.91	17	\$54.19	100%	at stock turnover	\$0.02	0.43	0.01	7th Power Plan
Water	Motors	Pumps	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Water	Motors	Fans & Blowers	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.08	N/A
Water	Motors	Compressed Air	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.05	N/A
Water	Motors	Material Handling	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.01	N/A
Water	Motors	Other Motors	1 unit	New	0.00	10	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	N/A
Water	Process	Process Heating	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Water	Process	Process Cooling	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Water	Process	Process Refrigeration	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Water	Process	Process Electrochemical	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Water	Process	Process Other	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Water	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Chemical Mfg	Cooling	Air-Cooled Chiller	1 kBTU/hr	Existing	20.95	20	\$26.36	3%	at stock turnover	\$0.12	0.02	0.00	Annual Energy Outlook, 2015
Chemical Mfg	Cooling	Water-Cooled Chiller	1 kBTU/hr	Existing	28.62	25	\$12.65	3%	at stock turnover	\$0.04	0.03	0.00	Annual Energy Outlook, 2015
Chemical Mfg	Cooling	RTU	1 kBTU/hr	Existing	3.29	15	\$6.75	11%	at stock turnover	\$0.22	0.02	0.00	Annual Energy Outlook, 2015
Chemical Mfg	Cooling	Air-Source Heat Pump	1 kBTU/hr	Existing	6.34	15	\$21.65	3%	at stock turnover	\$0.23	0.01	0.00	Annual Energy Outlook, 2015
Chemical Mfg	Heating	Air-Source Heat Pump	1 kBTU/hr	Existing	3.79	15	\$21.65	3%	at stock turnover	\$0.23	0.00	0.04	Annual Energy Outlook, 2015

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Chemical Mfg	Cooling	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.06	Annual Energy Outlook, 2015
Chemical Mfg	Heating	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.04	Annual Energy Outlook, 2015
Chemical Mfg	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	3%	at stock turnover	\$0.00	0.00	0.01	AEG-BEST
Chemical Mfg	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	15%	at stock turnover	\$0.00	0.00	0.01	AEG-BEST
Chemical Mfg	Ventilation	Ventilation	1000 CFM	Existing	2,269.39	20	\$1,219.71	100%	at stock turnover	\$0.05	0.11	0.00	AEG-BEST
Chemical Mfg	Interior Lighting	Screw-in	lamps	Existing	27.06	8	\$4.05	100%	at stock turnover	\$0.00	0.02	0.00	7th Power Plan
Chemical Mfg	Interior Lighting	High-Bay Fixtures	lamps	Existing	191.43	15	\$127.03	100%	at stock turnover	\$0.07	0.56	0.00	Annual Energy Outlook, 2015
Chemical Mfg	Interior Lighting	Linear Lighting	lamps	Existing	28.60	17	\$54.19	100%	at stock turnover	\$0.14	0.11	0.00	7th Power Plan
Chemical Mfg	Exterior Lighting	Screw-in	lamps	Existing	154.55	8	\$4.05	100%	at stock turnover	\$0.00	0.01	0.26	7th Power Plan
Chemical Mfg	Exterior Lighting	Area Lighting	lamps	Existing	2,507.81	15	\$45.69	100%	at stock turnover	-\$0.01	0.15	0.06	Annual Energy Outlook, 2015
Chemical Mfg	Exterior Lighting	Linear Lighting	lamps	Existing	196.34	17	\$54.19	100%	at stock turnover	\$0.02	0.03	1.54	7th Power Plan
Chemical Mfg	Motors	Pumps	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.30	N/A
Chemical Mfg	Motors	Fans & Blowers	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.02	N/A
Chemical Mfg	Motors	Compressed Air	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.41	N/A
Chemical Mfg	Motors	Material Handling	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.08	N/A
Chemical Mfg	Motors	Other Motors	1 unit	Existing	0.00	10	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	N/A
Chemical Mfg	Process	Process Heating	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Chemical Mfg	Process	Process Cooling	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Chemical Mfg	Process	Process Refrigeration	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Chemical Mfg	Process	Process Electrochemical	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Chemical Mfg	Process	Process Other	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Chemical Mfg	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Chemical Mfg	Cooling	Air-Cooled Chiller	1 kBTU/hr	New	18.03	20	\$26.36	3%	at stock turnover	\$0.14	0.01	0.00	Annual Energy Outlook, 2015
Chemical Mfg	Cooling	Water-Cooled Chiller	1 kBTU/hr	New	24.90	25	\$12.65	3%	at stock turnover	\$0.05	0.01	0.00	Annual Energy Outlook, 2015
Chemical Mfg	Cooling	RTU	1 kBTU/hr	New	3.20	15	\$6.75	11%	at stock turnover	\$0.23	0.01	0.00	Annual Energy Outlook, 2015
Chemical Mfg	Cooling	Air-Source Heat Pump	1 kBTU/hr	New	6.16	15	\$21.65	3%	at stock turnover	\$0.24	0.00	0.00	Annual Energy Outlook, 2015
Chemical Mfg	Heating	Air-Source Heat Pump	1 kBTU/hr	New	3.64	15	\$21.65	3%	at stock turnover	\$0.24	0.00	0.03	Annual Energy Outlook, 2015
Chemical Mfg	Cooling	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.03	Annual Energy Outlook, 2015
Chemical Mfg	Heating	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.02	Annual Energy Outlook, 2015
Chemical Mfg	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	3%	at stock turnover	\$0.00	0.00	0.01	AEG-BEST
Chemical Mfg	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	15%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Chemical Mfg	Ventilation	Ventilation	1000 CFM	New	1,964.09	20	\$1,219.71	100%	at stock turnover	\$0.06	0.07	0.00	AEG-BEST
Chemical Mfg	Interior Lighting	Screw-in	lamps	New	26.08	8	\$4.05	100%	at stock turnover	\$0.00	0.01	0.00	7th Power Plan
Chemical Mfg	Interior Lighting	High-Bay Fixtures	lamps	New	193.46	15	\$127.03	100%	at stock turnover	\$0.07	0.35	0.00	Annual Energy Outlook, 2015
Chemical Mfg	Interior Lighting	Linear Lighting	lamps	New	28.97	17	\$54.19	100%	at stock turnover	\$0.14	0.06	0.00	7th Power Plan
Chemical Mfg	Exterior Lighting	Screw-in	lamps	New	148.94	8	\$4.05	100%	at stock turnover	\$0.00	0.00	0.14	7th Power Plan
Chemical Mfg	Exterior Lighting	Area Lighting	lamps	New	2,515.33	15	\$45.69	100%	at stock turnover	-\$0.01	0.09	0.03	Annual Energy Outlook, 2015
Chemical Mfg	Exterior Lighting	Linear Lighting	lamps	New	198.91	17	\$54.19	100%	at stock turnover	\$0.02	0.02	0.91	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Chemical Mfg	Motors	Pumps	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.16	N/A
Chemical Mfg	Motors	Fans & Blowers	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.01	N/A
Chemical Mfg	Motors	Compressed Air	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.24	N/A
Chemical Mfg	Motors	Material Handling	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.04	N/A
Chemical Mfg	Motors	Other Motors	1 unit	New	0.00	10	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	N/A
Chemical Mfg	Process	Process Heating	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Chemical Mfg	Process	Process Cooling	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Chemical Mfg	Process	Process Refrigeration	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Chemical Mfg	Process	Process Electrochemical	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Chemical Mfg	Process	Process Other	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Chemical Mfg	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Cooling	Air-Cooled Chiller	1 kBTU/hr	Existing	20.95	20	\$26.36	3%	at stock turnover	\$0.12	1.56	0.00	Annual Energy Outlook, 2015
Electronic Equipment Mfg	Cooling	Water-Cooled Chiller	1 kBTU/hr	Existing	28.62	25	\$12.65	3%	at stock turnover	\$0.04	2.08	0.00	Annual Energy Outlook, 2015
Electronic Equipment Mfg	Cooling	RTU	1 kBTU/hr	Existing	3.29	15	\$6.75	11%	at stock turnover	\$0.22	1.29	0.00	Annual Energy Outlook, 2015
Electronic Equipment Mfg	Cooling	Air-Source Heat Pump	1 kBTU/hr	Existing	6.34	15	\$21.65	3%	at stock turnover	\$0.23	0.45	0.00	Annual Energy Outlook, 2015
Electronic Equipment Mfg	Heating	Air-Source Heat Pump	1 kBTU/hr	Existing	3.79	15	\$21.65	3%	at stock turnover	\$0.23	0.27	0.00	Annual Energy Outlook, 2015
Electronic Equipment Mfg	Cooling	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Electronic Equipment Mfg	Heating	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Electronic Equipment Mfg	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	3%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Electronic Equipment Mfg	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	15%	at stock turnover	\$0.00	0.00	1.56	AEG-BEST
Electronic Equipment Mfg	Ventilation	Ventilation	1000 CFM	Existing	2,269.39	20	\$1,219.71	100%	at stock turnover	\$0.05	8.95	2.08	AEG-BEST
Electronic Equipment Mfg	Interior Lighting	Screw-in	lamps	Existing	27.06	8	\$4.05	100%	at stock turnover	\$0.00	1.12	1.29	7th Power Plan
Electronic Equipment Mfg	Interior Lighting	High-Bay Fixtures	lamps	Existing	191.43	15	\$127.03	100%	at stock turnover	\$0.07	29.41	0.45	Annual Energy Outlook, 2015
Electronic Equipment Mfg	Interior Lighting	Linear Lighting	lamps	Existing	28.60	17	\$54.19	100%	at stock turnover	\$0.14	5.62	0.27	7th Power Plan
Electronic Equipment Mfg	Exterior Lighting	Screw-in	lamps	Existing	154.55	8	\$4.05	100%	at stock turnover	\$0.00	0.34	0.00	7th Power Plan
Electronic Equipment Mfg	Exterior Lighting	Area Lighting	lamps	Existing	2,507.81	15	\$45.69	100%	at stock turnover	-\$0.01	7.64	0.00	Annual Energy Outlook, 2015
Electronic Equipment Mfg	Exterior Lighting	Linear Lighting	lamps	Existing	196.34	17	\$54.19	100%	at stock turnover	\$0.02	1.52	0.00	7th Power Plan
Electronic Equipment Mfg	Motors	Pumps	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Motors	Fans & Blowers	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	8.95	N/A
Electronic Equipment Mfg	Motors	Compressed Air	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	1.11	N/A
Electronic Equipment Mfg	Motors	Material Handling	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	27.15	N/A
Electronic Equipment Mfg	Motors	Other Motors	1 unit	Existing	0.00	10	\$0.00	0%	at stock turnover	\$0.00	0.00	5.36	N/A
Electronic Equipment Mfg	Process	Process Heating	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.34	N/A
Electronic Equipment Mfg	Process	Process Cooling	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	7.25	N/A
Electronic Equipment Mfg	Process	Process Refrigeration	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	1.45	N/A
Electronic Equipment Mfg	Process	Process Electrochemical	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Process	Process Other	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Electronic Equipment Mfg	Cooling	Air-Cooled Chiller	1 kBTU/hr	New	18.03	20	\$26.36	3%	at stock turnover	\$0.14	0.96	0.00	Annual Energy Outlook, 2015
Electronic Equipment Mfg	Cooling	Water-Cooled Chiller	1 kBTU/hr	New	24.90	25	\$12.65	3%	at stock turnover	\$0.05	1.09	0.00	Annual Energy Outlook, 2015
Electronic Equipment Mfg	Cooling	RTU	1 kBTU/hr	New	3.20	15	\$6.75	11%	at stock turnover	\$0.23	0.71	0.00	Annual Energy Outlook, 2015
Electronic Equipment Mfg	Cooling	Air-Source Heat Pump	1 kBTU/hr	New	6.16	15	\$21.65	3%	at stock turnover	\$0.24	0.26	0.00	Annual Energy Outlook, 2015
Electronic Equipment Mfg	Heating	Air-Source Heat Pump	1 kBTU/hr	New	3.64	15	\$21.65	3%	at stock turnover	\$0.24	0.16	0.00	Annual Energy Outlook, 2015
Electronic Equipment Mfg	Cooling	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Electronic Equipment Mfg	Heating	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Electronic Equipment Mfg	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	3%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Electronic Equipment Mfg	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	15%	at stock turnover	\$0.00	0.00	0.96	AEG-BEST
Electronic Equipment Mfg	Ventilation	Ventilation	1000 CFM	New	1,964.09	20	\$1,219.71	100%	at stock turnover	\$0.06	5.02	1.09	AEG-BEST
Electronic Equipment Mfg	Interior Lighting	Screw-in	lamps	New	26.08	8	\$4.05	100%	at stock turnover	\$0.00	0.59	0.71	7th Power Plan
Electronic Equipment Mfg	Interior Lighting	High-Bay Fixtures	lamps	New	193.46	15	\$127.03	100%	at stock turnover	\$0.07	16.97	0.26	Annual Energy Outlook, 2015
Electronic Equipment Mfg	Interior Lighting	Linear Lighting	lamps	New	28.97	17	\$54.19	100%	at stock turnover	\$0.14	2.97	0.16	7th Power Plan
Electronic Equipment Mfg	Exterior Lighting	Screw-in	lamps	New	148.94	8	\$4.05	100%	at stock turnover	\$0.00	0.18	0.00	7th Power Plan
Electronic Equipment Mfg	Exterior Lighting	Area Lighting	lamps	New	2,515.33	15	\$45.69	100%	at stock turnover	-\$0.01	4.39	0.00	Annual Energy Outlook, 2015
Electronic Equipment Mfg	Exterior Lighting	Linear Lighting	lamps	New	198.91	17	\$54.19	100%	at stock turnover	\$0.02	0.80	0.00	7th Power Plan
Electronic Equipment Mfg	Motors	Pumps	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Motors	Fans & Blowers	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	5.02	N/A
Electronic Equipment Mfg	Motors	Compressed Air	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.56	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Electronic Equipment Mfg	Motors	Material Handling	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	15.92	N/A
Electronic Equipment Mfg	Motors	Other Motors	1 unit	New	0.00	10	\$0.00	0%	at stock turnover	\$0.00	0.00	2.85	N/A
Electronic Equipment Mfg	Process	Process Heating	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.17	N/A
Electronic Equipment Mfg	Process	Process Cooling	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	4.21	N/A
Electronic Equipment Mfg	Process	Process Refrigeration	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.77	N/A
Electronic Equipment Mfg	Process	Process Electrochemical	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Process	Process Other	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Industrial Machinery	Cooling	Air-Cooled Chiller	1 kBTU/hr	Existing	20.95	20	\$26.36	3%	at stock turnover	\$0.12	0.19	3.74	Annual Energy Outlook, 2015
Industrial Machinery	Cooling	Water-Cooled Chiller	1 kBTU/hr	Existing	28.62	25	\$12.65	3%	at stock turnover	\$0.04	0.25	5.50	Annual Energy Outlook, 2015
Industrial Machinery	Cooling	RTU	1 kBTU/hr	Existing	3.29	15	\$6.75	11%	at stock turnover	\$0.22	0.15	18.51	Annual Energy Outlook, 2015
Industrial Machinery	Cooling	Air-Source Heat Pump	1 kBTU/hr	Existing	6.34	15	\$21.65	3%	at stock turnover	\$0.23	0.05	0.00	Annual Energy Outlook, 2015
Industrial Machinery	Heating	Air-Source Heat Pump	1 kBTU/hr	Existing	3.79	15	\$21.65	3%	at stock turnover	\$0.23	0.03	0.00	Annual Energy Outlook, 2015
Industrial Machinery	Cooling	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	3.49	Annual Energy Outlook, 2015
Industrial Machinery	Heating	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	17.98	Annual Energy Outlook, 2015
Industrial Machinery	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	3%	at stock turnover	\$0.00	0.00	4.32	AEG-BEST
Industrial Machinery	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	15%	at stock turnover	\$0.00	0.00	0.25	AEG-BEST
Industrial Machinery	Ventilation	Ventilation	1000 CFM	Existing	2,269.39	20	\$1,219.71	100%	at stock turnover	\$0.05	1.07	1.54	AEG-BEST
Industrial Machinery	Interior Lighting	Screw-in	lamps	Existing	27.06	8	\$4.05	100%	at stock turnover	\$0.00	0.20	0.00	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Industrial Machinery	Interior Lighting	High-Bay Fixtures	lamps	Existing	191.43	15	\$127.03	100%	at stock turnover	\$0.07	5.26	1.52	Annual Energy Outlook, 2015
Industrial Machinery	Interior Lighting	Linear Lighting	lamps	Existing	28.60	17	\$54.19	100%	at stock turnover	\$0.14	1.01	3.82	7th Power Plan
Industrial Machinery	Exterior Lighting	Screw-in	lamps	Existing	154.55	8	\$4.05	100%	at stock turnover	\$0.00	0.06	3.48	7th Power Plan
Industrial Machinery	Exterior Lighting	Area Lighting	lamps	Existing	2,507.81	15	\$45.69	100%	at stock turnover	-\$0.01	1.37	0.93	Annual Energy Outlook, 2015
Industrial Machinery	Exterior Lighting	Linear Lighting	lamps	Existing	196.34	17	\$54.19	100%	at stock turnover	\$0.02	0.27	7.09	7th Power Plan
Industrial Machinery	Motors	Pumps	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	4.07	N/A
Industrial Machinery	Motors	Fans & Blowers	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Industrial Machinery	Motors	Compressed Air	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Industrial Machinery	Motors	Material Handling	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Industrial Machinery	Motors	Other Motors	1 unit	Existing	0.00	10	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	N/A
Industrial Machinery	Process	Process Heating	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Industrial Machinery	Process	Process Cooling	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Industrial Machinery	Process	Process Refrigeration	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Industrial Machinery	Process	Process Electrochemical	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Industrial Machinery	Process	Process Other	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Industrial Machinery	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Industrial Machinery	Cooling	Air-Cooled Chiller	1 kBTU/hr	New	18.03	20	\$26.36	3%	at stock turnover	\$0.14	0.11	0.00	Annual Energy Outlook, 2015
Industrial Machinery	Cooling	Water-Cooled Chiller	1 kBTU/hr	New	24.90	25	\$12.65	3%	at stock turnover	\$0.05	0.13	0.00	Annual Energy Outlook, 2015
Industrial Machinery	Cooling	RTU	1 kBTU/hr	New	3.20	15	\$6.75	11%	at stock turnover	\$0.23	0.08	0.00	Annual Energy Outlook, 2015

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Industrial Machinery	Cooling	Air-Source Heat Pump	1 kBTU/hr	New	6.16	15	\$21.65	3%	at stock turnover	\$0.24	0.03	0.00	Annual Energy Outlook, 2015
Industrial Machinery	Heating	Air-Source Heat Pump	1 kBTU/hr	New	3.64	15	\$21.65	3%	at stock turnover	\$0.24	0.02	0.00	Annual Energy Outlook, 2015
Industrial Machinery	Cooling	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Industrial Machinery	Heating	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Industrial Machinery	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	3%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Industrial Machinery	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	15%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Industrial Machinery	Ventilation	Ventilation	1000 CFM	New	1,964.09	20	\$1,219.71	100%	at stock turnover	\$0.06	0.57	0.00	AEG-BEST
Industrial Machinery	Interior Lighting	Screw-in	lamps	New	26.08	8	\$4.05	100%	at stock turnover	\$0.00	0.10	0.00	7th Power Plan
Industrial Machinery	Interior Lighting	High-Bay Fixtures	lamps	New	193.46	15	\$127.03	100%	at stock turnover	\$0.07	2.83	0.00	Annual Energy Outlook, 2015
Industrial Machinery	Interior Lighting	Linear Lighting	lamps	New	28.97	17	\$54.19	100%	at stock turnover	\$0.14	0.48	0.00	7th Power Plan
Industrial Machinery	Exterior Lighting	Screw-in	lamps	New	148.94	8	\$4.05	100%	at stock turnover	\$0.00	0.03	0.00	7th Power Plan
Industrial Machinery	Exterior Lighting	Area Lighting	lamps	New	2,515.33	15	\$45.69	100%	at stock turnover	-\$0.01	0.73	0.00	Annual Energy Outlook, 2015
Industrial Machinery	Exterior Lighting	Linear Lighting	lamps	New	198.91	17	\$54.19	100%	at stock turnover	\$0.02	0.13	0.00	7th Power Plan
Industrial Machinery	Motors	Pumps	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Industrial Machinery	Motors	Fans & Blowers	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Industrial Machinery	Motors	Compressed Air	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Industrial Machinery	Motors	Material Handling	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Industrial Machinery	Motors	Other Motors	1 unit	New	0.00	10	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	N/A
Industrial Machinery	Process	Process Heating	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Industrial Machinery	Process	Process Cooling	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Industrial Machinery	Process	Process Refrigeration	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Industrial Machinery	Process	Process Electrochemical	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Industrial Machinery	Process	Process Other	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Industrial Machinery	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Cooling	Air-Cooled Chiller	1 kBTU/hr	Existing	20.95	20	\$26.36	3%	at stock turnover	\$0.12	2.64	0.00	Annual Energy Outlook, 2015
Lumber Wood Products	Cooling	Water-Cooled Chiller	1 kBTU/hr	Existing	28.62	25	\$12.65	3%	at stock turnover	\$0.04	3.46	0.00	Annual Energy Outlook, 2015
Lumber Wood Products	Cooling	RTU	1 kBTU/hr	Existing	3.29	15	\$6.75	11%	at stock turnover	\$0.22	2.20	0.00	Annual Energy Outlook, 2015
Lumber Wood Products	Cooling	Air-Source Heat Pump	1 kBTU/hr	Existing	6.34	15	\$21.65	3%	at stock turnover	\$0.23	0.77	13.14	Annual Energy Outlook, 2015
Lumber Wood Products	Heating	Air-Source Heat Pump	1 kBTU/hr	Existing	3.79	15	\$21.65	3%	at stock turnover	\$0.23	0.46	2.92	Annual Energy Outlook, 2015
Lumber Wood Products	Cooling	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	118.56	Annual Energy Outlook, 2015
Lumber Wood Products	Heating	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	93.68	Annual Energy Outlook, 2015
Lumber Wood Products	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	3%	at stock turnover	\$0.00	0.00	21.05	AEG-BEST
Lumber Wood Products	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	15%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Lumber Wood Products	Ventilation	Ventilation	1000 CFM	Existing	2,269.39	20	\$1,219.71	100%	at stock turnover	\$0.05	15.23	0.00	AEG-BEST
Lumber Wood Products	Interior Lighting	Screw-in	lamps	Existing	27.06	8	\$4.05	100%	at stock turnover	\$0.00	6.78	0.48	7th Power Plan
Lumber Wood Products	Interior Lighting	High-Bay Fixtures	lamps	Existing	191.43	15	\$127.03	100%	at stock turnover	\$0.07	178.21	2.28	Annual Energy Outlook, 2015
Lumber Wood Products	Interior Lighting	Linear Lighting	lamps	Existing	28.60	17	\$54.19	100%	at stock turnover	\$0.14	34.39	0.30	7th Power Plan
Lumber Wood Products	Exterior Lighting	Screw-in	lamps	Existing	154.55	8	\$4.05	100%	at stock turnover	\$0.00	2.08	0.18	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Lumber Wood Products	Exterior Lighting	Area Lighting	lamps	Existing	2,507.81	15	\$45.69	100%	at stock turnover	-\$0.01	46.30	0.10	Annual Energy Outlook, 2015
Lumber Wood Products	Exterior Lighting	Linear Lighting	lamps	Existing	196.34	17	\$54.19	100%	at stock turnover	\$0.02	9.30	0.01	7th Power Plan
Lumber Wood Products	Motors	Pumps	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Motors	Fans & Blowers	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	1.57	N/A
Lumber Wood Products	Motors	Compressed Air	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.20	N/A
Lumber Wood Products	Motors	Material Handling	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.06	N/A
Lumber Wood Products	Motors	Other Motors	1 unit	Existing	0.00	10	\$0.00	0%	at stock turnover	\$0.00	0.00	0.21	N/A
Lumber Wood Products	Process	Process Heating	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.03	N/A
Lumber Wood Products	Process	Process Cooling	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.08	N/A
Lumber Wood Products	Process	Process Refrigeration	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.83	N/A
Lumber Wood Products	Process	Process Electrochemical	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.41	N/A
Lumber Wood Products	Process	Process Other	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.38	N/A
Lumber Wood Products	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.06	N/A
Lumber Wood Products	Cooling	Air-Cooled Chiller	1 kBTU/hr	New	18.03	20	\$26.36	3%	at stock turnover	\$0.14	1.52	1.13	Annual Energy Outlook, 2015
Lumber Wood Products	Cooling	Water-Cooled Chiller	1 kBTU/hr	New	24.90	25	\$12.65	3%	at stock turnover	\$0.05	1.82	10.53	Annual Energy Outlook, 2015
Lumber Wood Products	Cooling	RTU	1 kBTU/hr	New	3.20	15	\$6.75	11%	at stock turnover	\$0.23	1.07	0.20	Annual Energy Outlook, 2015
Lumber Wood Products	Cooling	Air-Source Heat Pump	1 kBTU/hr	New	6.16	15	\$21.65	3%	at stock turnover	\$0.24	0.39	0.14	Annual Energy Outlook, 2015
Lumber Wood Products	Heating	Air-Source Heat Pump	1 kBTU/hr	New	3.64	15	\$21.65	3%	at stock turnover	\$0.24	0.23	0.67	Annual Energy Outlook, 2015
Lumber Wood Products	Cooling	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.10	Annual Energy Outlook, 2015

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Lumber Wood Products	Heating	Geothermal Heat Pump	1 kBtu/hr	New	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	11.92	Annual Energy Outlook, 2015
Lumber Wood Products	Heating	Electric Furnace	1 kBtu/hr	New	0.00	18	\$0.00	3%	at stock turnover	\$0.00	0.00	16.29	AEG-BEST
Lumber Wood Products	Heating	Electric Room Heat	3.5 kBtu/hr	New	0.00	18	\$0.00	15%	at stock turnover	\$0.00	0.00	0.02	AEG-BEST
Lumber Wood Products	Ventilation	Ventilation	1000 CFM	New	1,964.09	20	\$1,219.71	100%	at stock turnover	\$0.06	7.61	0.00	AEG-BEST
Lumber Wood Products	Interior Lighting	Screw-in	lamps	New	26.08	8	\$4.05	100%	at stock turnover	\$0.00	3.06	0.00	7th Power Plan
Lumber Wood Products	Interior Lighting	High-Bay Fixtures	lamps	New	193.46	15	\$127.03	100%	at stock turnover	\$0.07	90.32	0.97	Annual Energy Outlook, 2015
Lumber Wood Products	Interior Lighting	Linear Lighting	lamps	New	28.97	17	\$54.19	100%	at stock turnover	\$0.14	14.57	0.84	7th Power Plan
Lumber Wood Products	Exterior Lighting	Screw-in	lamps	New	148.94	8	\$4.05	100%	at stock turnover	\$0.00	0.94	0.82	7th Power Plan
Lumber Wood Products	Exterior Lighting	Area Lighting	lamps	New	2,515.33	15	\$45.69	100%	at stock turnover	-\$0.01	23.37	0.70	Annual Energy Outlook, 2015
Lumber Wood Products	Exterior Lighting	Linear Lighting	lamps	New	198.91	17	\$54.19	100%	at stock turnover	\$0.02	3.94	0.71	7th Power Plan
Lumber Wood Products	Motors	Pumps	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Motors	Fans & Blowers	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Motors	Compressed Air	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Motors	Material Handling	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	7.60	N/A
Lumber Wood Products	Motors	Other Motors	1 unit	New	0.00	10	\$0.00	0%	at stock turnover	\$0.00	0.00	12.21	N/A
Lumber Wood Products	Process	Process Heating	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	8.06	N/A
Lumber Wood Products	Process	Process Cooling	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	9.04	N/A
Lumber Wood Products	Process	Process Refrigeration	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	8.19	N/A
Lumber Wood Products	Process	Process Electrochemical	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	10.15	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Lumber Wood Products	Process	Process Other	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	11.96	N/A
Lumber Wood Products	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	17.96	N/A
Metal Mfg	Cooling	Air-Cooled Chiller	1 kBTU/hr	Existing	20.95	20	\$26.36	3%	at stock turnover	\$0.12	0.40	0.01	Annual Energy Outlook, 2015
Metal Mfg	Cooling	Water-Cooled Chiller	1 kBTU/hr	Existing	28.62	25	\$12.65	3%	at stock turnover	\$0.04	0.53	0.00	Annual Energy Outlook, 2015
Metal Mfg	Cooling	RTU	1 kBTU/hr	Existing	3.29	15	\$6.75	11%	at stock turnover	\$0.22	0.33	0.00	Annual Energy Outlook, 2015
Metal Mfg	Cooling	Air-Source Heat Pump	1 kBTU/hr	Existing	6.34	15	\$21.65	3%	at stock turnover	\$0.23	0.12	0.00	Annual Energy Outlook, 2015
Metal Mfg	Heating	Air-Source Heat Pump	1 kBTU/hr	Existing	3.79	15	\$21.65	3%	at stock turnover	\$0.23	0.07	0.01	Annual Energy Outlook, 2015
Metal Mfg	Cooling	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Metal Mfg	Heating	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Metal Mfg	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	3%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Metal Mfg	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	15%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Metal Mfg	Ventilation	Ventilation	1000 CFM	Existing	2,269.39	20	\$1,219.71	100%	at stock turnover	\$0.05	2.30	0.00	AEG-BEST
Metal Mfg	Interior Lighting	Screw-in	lamps	Existing	27.06	8	\$4.05	100%	at stock turnover	\$0.00	0.63	0.01	7th Power Plan
Metal Mfg	Interior Lighting	High-Bay Fixtures	lamps	Existing	191.43	15	\$127.03	100%	at stock turnover	\$0.07	16.68	0.00	Annual Energy Outlook, 2015
Metal Mfg	Interior Lighting	Linear Lighting	lamps	Existing	28.60	17	\$54.19	100%	at stock turnover	\$0.14	3.21	0.00	7th Power Plan
Metal Mfg	Exterior Lighting	Screw-in	lamps	Existing	154.55	8	\$4.05	100%	at stock turnover	\$0.00	0.19	0.01	7th Power Plan
Metal Mfg	Exterior Lighting	Area Lighting	lamps	Existing	2,507.81	15	\$45.69	100%	at stock turnover	-\$0.01	4.33	0.00	Annual Energy Outlook, 2015
Metal Mfg	Exterior Lighting	Linear Lighting	lamps	Existing	196.34	17	\$54.19	100%	at stock turnover	\$0.02	0.87	0.00	7th Power Plan
Metal Mfg	Motors	Pumps	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Metal Mfg	Motors	Fans & Blowers	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Metal Mfg	Motors	Compressed Air	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Metal Mfg	Motors	Material Handling	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Metal Mfg	Motors	Other Motors	1 unit	Existing	0.00	10	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	N/A
Metal Mfg	Process	Process Heating	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Metal Mfg	Process	Process Cooling	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Metal Mfg	Process	Process Refrigeration	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Metal Mfg	Process	Process Electrochemical	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Metal Mfg	Process	Process Other	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Metal Mfg	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Metal Mfg	Cooling	Air-Cooled Chiller	1 kBTU/hr	New	18.03	20	\$26.36	3%	at stock turnover	\$0.14	0.23	0.00	Annual Energy Outlook, 2015
Metal Mfg	Cooling	Water-Cooled Chiller	1 kBTU/hr	New	24.90	25	\$12.65	3%	at stock turnover	\$0.05	0.28	0.00	Annual Energy Outlook, 2015
Metal Mfg	Cooling	RTU	1 kBTU/hr	New	3.20	15	\$6.75	11%	at stock turnover	\$0.23	0.17	0.00	Annual Energy Outlook, 2015
Metal Mfg	Cooling	Air-Source Heat Pump	1 kBTU/hr	New	6.16	15	\$21.65	3%	at stock turnover	\$0.24	0.06	0.00	Annual Energy Outlook, 2015
Metal Mfg	Heating	Air-Source Heat Pump	1 kBTU/hr	New	3.64	15	\$21.65	3%	at stock turnover	\$0.24	0.04	0.01	Annual Energy Outlook, 2015
Metal Mfg	Cooling	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Metal Mfg	Heating	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Metal Mfg	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	3%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Metal Mfg	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	15%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Metal Mfg	Ventilation	Ventilation	1000 CFM	New	1,964.09	20	\$1,219.71	100%	at stock turnover	\$0.06	1.18	0.00	AEG-BEST
Metal Mfg	Interior Lighting	Screw-in	lamps	New	26.08	8	\$4.05	100%	at stock turnover	\$0.00	0.30	0.00	7th Power Plan
Metal Mfg	Interior Lighting	High-Bay Fixtures	lamps	New	193.46	15	\$127.03	100%	at stock turnover	\$0.07	8.71	0.00	Annual Energy Outlook, 2015
Metal Mfg	Interior Lighting	Linear Lighting	lamps	New	28.97	17	\$54.19	100%	at stock turnover	\$0.14	1.43	0.00	7th Power Plan
Metal Mfg	Exterior Lighting	Screw-in	lamps	New	148.94	8	\$4.05	100%	at stock turnover	\$0.00	0.09	0.00	7th Power Plan
Metal Mfg	Exterior Lighting	Area Lighting	lamps	New	2,515.33	15	\$45.69	100%	at stock turnover	-\$0.01	2.25	0.00	Annual Energy Outlook, 2015
Metal Mfg	Exterior Lighting	Linear Lighting	lamps	New	198.91	17	\$54.19	100%	at stock turnover	\$0.02	0.39	0.00	7th Power Plan
Metal Mfg	Motors	Pumps	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Metal Mfg	Motors	Fans & Blowers	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Metal Mfg	Motors	Compressed Air	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Metal Mfg	Motors	Material Handling	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Metal Mfg	Motors	Other Motors	1 unit	New	0.00	10	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	N/A
Metal Mfg	Process	Process Heating	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Metal Mfg	Process	Process Cooling	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Metal Mfg	Process	Process Refrigeration	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Metal Mfg	Process	Process Electrochemical	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Metal Mfg	Process	Process Other	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Metal Mfg	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Misc. Mfg	Cooling	Air-Cooled Chiller	1 kBTU/hr	Existing	20.95	20	\$26.36	3%	at stock turnover	\$0.12	0.80	0.00	Annual Energy Outlook, 2015

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Misc. Mfg	Cooling	Water-Cooled Chiller	1 kBTU/hr	Existing	28.62	25	\$12.65	3%	at stock turnover	\$0.04	1.05	0.11	Annual Energy Outlook, 2015
Misc. Mfg	Cooling	RTU	1 kBTU/hr	Existing	3.29	15	\$6.75	11%	at stock turnover	\$0.22	0.67	0.58	Annual Energy Outlook, 2015
Misc. Mfg	Cooling	Air-Source Heat Pump	1 kBTU/hr	Existing	6.34	15	\$21.65	3%	at stock turnover	\$0.23	0.23	0.14	Annual Energy Outlook, 2015
Misc. Mfg	Heating	Air-Source Heat Pump	1 kBTU/hr	Existing	3.79	15	\$21.65	3%	at stock turnover	\$0.23	0.14	0.01	Annual Energy Outlook, 2015
Misc. Mfg	Cooling	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.05	Annual Energy Outlook, 2015
Misc. Mfg	Heating	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Misc. Mfg	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	3%	at stock turnover	\$0.00	0.00	0.05	AEG-BEST
Misc. Mfg	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	15%	at stock turnover	\$0.00	0.00	0.86	AEG-BEST
Misc. Mfg	Ventilation	Ventilation	1000 CFM	Existing	2,269.39	20	\$1,219.71	100%	at stock turnover	\$0.05	4.62	0.13	AEG-BEST
Misc. Mfg	Interior Lighting	Screw-in	lamps	Existing	27.06	8	\$4.05	100%	at stock turnover	\$0.00	0.93	0.03	7th Power Plan
Misc. Mfg	Interior Lighting	High-Bay Fixtures	lamps	Existing	191.43	15	\$127.03	100%	at stock turnover	\$0.07	24.40	0.26	Annual Energy Outlook, 2015
Misc. Mfg	Interior Lighting	Linear Lighting	lamps	Existing	28.60	17	\$54.19	100%	at stock turnover	\$0.14	4.70	0.15	7th Power Plan
Misc. Mfg	Exterior Lighting	Screw-in	lamps	Existing	154.55	8	\$4.05	100%	at stock turnover	\$0.00	0.28	0.00	7th Power Plan
Misc. Mfg	Exterior Lighting	Area Lighting	lamps	Existing	2,507.81	15	\$45.69	100%	at stock turnover	-\$0.01	6.34	0.00	Annual Energy Outlook, 2015
Misc. Mfg	Exterior Lighting	Linear Lighting	lamps	Existing	196.34	17	\$54.19	100%	at stock turnover	\$0.02	1.27	0.00	7th Power Plan
Misc. Mfg	Motors	Pumps	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Misc. Mfg	Motors	Fans & Blowers	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Misc. Mfg	Motors	Compressed Air	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Misc. Mfg	Motors	Material Handling	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Misc. Mfg	Motors	Other Motors	1 unit	Existing	0.00	10	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	N/A
Misc. Mfg	Process	Process Heating	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Misc. Mfg	Process	Process Cooling	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Misc. Mfg	Process	Process Refrigeration	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Misc. Mfg	Process	Process Electrochemical	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Misc. Mfg	Process	Process Other	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Misc. Mfg	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Misc. Mfg	Cooling	Air-Cooled Chiller	1 kBTU/hr	New	18.03	20	\$26.36	3%	at stock turnover	\$0.14	0.46	0.00	Annual Energy Outlook, 2015
Misc. Mfg	Cooling	Water-Cooled Chiller	1 kBTU/hr	New	24.90	25	\$12.65	3%	at stock turnover	\$0.05	0.55	0.00	Annual Energy Outlook, 2015
Misc. Mfg	Cooling	RTU	1 kBTU/hr	New	3.20	15	\$6.75	11%	at stock turnover	\$0.23	0.33	0.00	Annual Energy Outlook, 2015
Misc. Mfg	Cooling	Air-Source Heat Pump	1 kBTU/hr	New	6.16	15	\$21.65	3%	at stock turnover	\$0.24	0.12	0.00	Annual Energy Outlook, 2015
Misc. Mfg	Heating	Air-Source Heat Pump	1 kBTU/hr	New	3.64	15	\$21.65	3%	at stock turnover	\$0.24	0.07	0.00	Annual Energy Outlook, 2015
Misc. Mfg	Cooling	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Misc. Mfg	Heating	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Misc. Mfg	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	3%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Misc. Mfg	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	15%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Misc. Mfg	Ventilation	Ventilation	1000 CFM	New	1,964.09	20	\$1,219.71	100%	at stock turnover	\$0.06	2.33	0.00	AEG-BEST
Misc. Mfg	Interior Lighting	Screw-in	lamps	New	26.08	8	\$4.05	100%	at stock turnover	\$0.00	0.42	0.00	7th Power Plan
Misc. Mfg	Interior Lighting	High-Bay Fixtures	lamps	New	193.46	15	\$127.03	100%	at stock turnover	\$0.07	12.51	0.00	Annual Energy Outlook, 2015

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Misc. Mfg	Interior Lighting	Linear Lighting	lamps	New	28.97	17	\$54.19	100%	at stock turnover	\$0.14	2.03	0.00	7th Power Plan
Misc. Mfg	Exterior Lighting	Screw-in	lamps	New	148.94	8	\$4.05	100%	at stock turnover	\$0.00	0.13	0.01	7th Power Plan
Misc. Mfg	Exterior Lighting	Area Lighting	lamps	New	2,515.33	15	\$45.69	100%	at stock turnover	-\$0.01	3.24	0.02	Annual Energy Outlook, 2015
Misc. Mfg	Exterior Lighting	Linear Lighting	lamps	New	198.91	17	\$54.19	100%	at stock turnover	\$0.02	0.55	0.01	7th Power Plan
Misc. Mfg	Motors	Pumps	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.02	N/A
Misc. Mfg	Motors	Fans & Blowers	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Misc. Mfg	Motors	Compressed Air	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.07	N/A
Misc. Mfg	Motors	Material Handling	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.05	N/A
Misc. Mfg	Motors	Other Motors	1 unit	New	0.00	10	\$0.00	0%	at stock turnover	\$0.00	0.00	0.02	N/A
Misc. Mfg	Process	Process Heating	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Misc. Mfg	Process	Process Cooling	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Misc. Mfg	Process	Process Refrigeration	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Misc. Mfg	Process	Process Electrochemical	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Misc. Mfg	Process	Process Other	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Misc. Mfg	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.15	N/A
Agriculture	Cooling	Insulation - Ceiling	sqft	Existing	0.12	45	\$1.28	15%	25%	\$0.14	0.86	0.19	Building Energy Simulation Tool
Agriculture	Heating	Insulation - Ceiling	sqft	Existing	0.52	45	\$1.28	15%	25%	\$0.14	3.86	0.25	Building Energy Simulation Tool
Agriculture	Ventilation	Insulation - Ceiling	sqft	Existing	0.02	45	\$1.28	15%	25%	\$0.14	0.57	0.16	Building Energy Simulation Tool
Agriculture	Cooling	Insulation - Ducting	sqft	Existing	0.05	20	\$0.84	15%	25%	\$1.01	0.31	0.05	Building Energy Simulation Tool

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Agriculture	Heating	Insulation - Ducting	sqft	Existing	0.02	20	\$0.84	15%	25%	\$1.01	0.16	0.03	Building Energy Simulation Tool
Agriculture	Ventilation	Insulation - Ducting	sqft	Existing	0.00	20	\$0.84	15%	25%	\$1.01	0.02	0.00	Building Energy Simulation Tool
Agriculture	Cooling	Insulation - Wall Cavity	sqft	Existing	0.00	45	\$0.15	45%	50%	\$0.02	0.01	0.00	Building Energy Simulation Tool
Agriculture	Heating	Insulation - Wall Cavity	sqft	Existing	0.76	45	\$0.15	45%	50%	\$0.02	2.92	0.00	Building Energy Simulation Tool
Agriculture	Ventilation	Insulation - Wall Cavity	sqft	Existing	0.02	45	\$0.15	45%	50%	\$0.02	0.38	0.00	Building Energy Simulation Tool
Agriculture	Cooling	HVAC - Duct Repair and Sealing	sqft	Existing	0.02	18	\$0.00	15%	25%	\$0.00	0.11	1.08	Building Energy Simulation Tool
Agriculture	Heating	HVAC - Duct Repair and Sealing	sqft	Existing	0.05	18	\$0.00	15%	25%	\$0.00	0.41	0.42	Building Energy Simulation Tool
Agriculture	Ventilation	HVAC - Duct Repair and Sealing	sqft	Existing	0.00	18	\$0.00	15%	25%	\$0.00	0.05	10.35	Building Energy Simulation Tool
Agriculture	Cooling	Chiller - Chilled Water Reset	sqft	Existing	0.04	10	\$0.01	15%	45%	\$0.03	0.34	2.04	AEG-BEST
Agriculture	Cooling	Chiller - Chilled Water Variable-Flow System	sqft	Existing	0.24	15	\$0.50	15%	60%	\$0.21	2.75	0.13	AEG-BEST
Agriculture	Cooling	Chiller - Variable Speed Fans	sqft	Existing	0.09	15	\$0.03	15%	75%	\$0.04	1.41	2.76	New Jersey TRM
Agriculture	Cooling	HVAC - Economizer	sqft	Existing	0.48	10	\$0.25	18%	30%	\$0.07	1.49	0.55	AEG-BEST
Agriculture	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.25	15%	35%	\$10.34	0.18	0.00	7th Power Plan
Agriculture	Cooling	Destratification Fans (HVLS)	sqft	Existing	0.16	15	\$0.63	15%	50%	\$0.04	4.03	0.00	AEG Research
Agriculture	Heating	Destratification Fans (HVLS)	sqft	Existing	1.38	15	\$0.63	15%	50%	\$0.04	38.14	0.00	AEG Research
Agriculture	Cooling	RTU - Maintenance	sqft	Existing	0.08	3	\$0.07	15%	75%	\$0.26	2.88	0.00	AEG Research
Agriculture	Cooling	Thermostat - WiFi/Interactive	sqft	Existing	0.29	5	\$0.66	5%	15%	\$0.09	1.98	0.00	7th Power Plan
Agriculture	Heating	Thermostat - WiFi/Interactive	sqft	Existing	1.21	5	\$0.66	5%	15%	\$0.09	9.02	0.00	7th Power Plan
Agriculture	Ventilation	Thermostat - WiFi/Interactive	sqft	Existing	0.04	5	\$0.66	5%	15%	\$0.09	1.33	0.00	7th Power Plan
Agriculture	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.55	15	\$0.35	3%	17%	\$0.05	7.20	0.00	7th Power Plan
Agriculture	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.76	15	\$0.58	3%	17%	\$0.06	9.82	0.00	7th Power Plan

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Agriculture	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	Existing	0.02	15	\$0.00	1%	2%	\$0.01	0.07	0.00	7th Power Plan
Agriculture	Interior Lighting	Interior Lighting - Timeclocks and Timers	sqft	Existing	0.00	8	\$0.00	7%	7%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Agriculture	Interior Lighting	Interior Lighting - Skylights	sqft	Existing	0.00	15	\$1.01	15%	23%	\$0.00	0.00	0.12	AEG Research
Agriculture	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	sqft	Existing	0.03	16	\$1.81	5%	40%	\$3.95	2.28	0.13	7th Power Plan
Agriculture	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	Existing	0.04	11	\$0.00	15%	50%	\$0.01	2.43	0.09	Illinois TRM
Agriculture	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	sqft	Existing	0.05	8	\$0.03	15%	25%	\$0.08	2.93	0.03	7th Power Plan
Agriculture	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	Existing	0.03	8	\$0.02	33%	60%	\$0.08	4.07	0.02	Pacific Gas and Electric Research
Agriculture	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	Existing	0.03	7	\$1.19	15%	30%	\$4.38	2.54	0.00	AEG Research
Agriculture	Process	Process - Conductivity Controls	employee	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Agriculture	Process	Process - Timers and Controls	employee	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Agriculture	Motors	Process - Timers and Controls	employee	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Agriculture	Process	Refrigeration - Floating Head Pressure	employee	Existing	450.45	15	\$442.86	20%	50%	\$0.11	22.53	0.61	RTF Workbook
Agriculture	Process	Refrigeration - System Optimization	employee	Existing	729.64	15	\$311.86	20%	50%	\$0.05	36.61	0.21	AEG Research
Agriculture	Motors	Pumping System - Equipment Upgrade	employee	Existing	260.89	10	\$38.48	9%	38%	\$0.05	12.39	6.10	7th Power Plan
Agriculture	Motors	Pumping System - System Optimization	employee	Existing	193.86	12	\$58.64	9%	38%	\$0.04	8.94	1.09	UNIDO Study on Industrial Energy Efficiency
Agriculture	Motors	Pumping System - Variable Speed Drive	employee	Existing	192.21	10	\$61.01	9%	38%	\$0.04	8.84	0.07	UNIDO Study on Industrial Energy Efficiency
Agriculture	Motors	Fan System - Equipment Upgrade	employee	Existing	912.33	10	\$90.39	9%	38%	\$0.04	42.53	1.61	UNIDO Study on Industrial Energy Efficiency
Agriculture	Motors	Fan System - Flow Optimization	employee	Existing	1,068.12	10	\$149.56	9%	38%	\$0.02	49.62	0.30	UNIDO Study on Industrial Energy Efficiency
Agriculture	Motors	Fan System - Variable Speed Drive	employee	Existing	1,563.86	10	\$752.57	9%	38%	\$0.06	71.39	0.00	UNIDO Study on Industrial Energy Efficiency

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Agriculture	Motors	Compressed Air - Equipment Upgrade	employee	Existing	626.63	10	\$45.60	17%	50%	\$0.04	35.14	0.00	7th Power Plan
Agriculture	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	Existing	0.00	15	\$0.00	16%	38%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Agriculture	Motors	Compressed Air - Refrigerated Cycling Dryers	employee	Existing	0.00	10	\$0.00	16%	30%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Agriculture	Motors	Compressed Air - System Controls	employee	Existing	136.47	10	\$32.60	9%	38%	\$0.03	6.46	0.00	UNIDO Study on Industrial Energy Efficiency
Agriculture	Motors	Compressed Air - Leak Management Program	employee	Existing	355.09	10	\$32.77	18%	75%	\$0.04	34.06	0.00	7th Power Plan
Agriculture	Motors	Compressed Air - Variable Speed Drive	employee	Existing	250.23	15	\$199.88	26%	45%	\$0.08	7.83	0.00	UNIDO Study on Industrial Energy Efficiency
Agriculture	Motors	Compressed Air - Low Pressure-Drop Filters	employee	Existing	8.34	10	\$3.08	17%	50%	\$0.05	0.46	0.00	Illinois TRM
Agriculture	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	Existing	51.32	10	\$9.99	17%	50%	\$0.03	2.84	0.00	UNIDO Study on Industrial Energy Efficiency
Agriculture	Motors	Compressed Air - Outside Air Intake	employee	Existing	0.00	20	\$0.00	17%	50%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Agriculture	Motors	Compressed Air - Receiver Capacity Addition	employee	Existing	50.92	15	\$27.48	17%	50%	\$0.06	2.81	0.00	UNIDO Study on Industrial Energy Efficiency
Agriculture	Motors	Material Handling - Variable Speed Drive	employee	Existing	1,833.38	10	\$661.96	25%	45%	\$0.05	59.14	9.11	7th Power Plan
Agriculture	Motors	Motors - Green Rewind (<100 HP)	employee	Existing	45.90	10	\$20.20	10%	50%	\$0.06	11.78	11.95	7th Power Plan
Agriculture	Motors	Motors - Green Rewind (100 HP+)	employee	Existing	25.98	10	\$7.17	6%	25%	\$0.04	3.19	7.60	7th Power Plan
Agriculture	Motors	Switch from Belt Drive to Direct Drive	employee	Existing	395.20	12	\$88.69	16%	25%	\$0.03	24.36	2.67	2015-mdu-irp-report---volume-iii.pdf
Agriculture	Motors	Motors - Synchronous Belts	employee	Existing	104.35	10	\$26.68	16%	36%	\$0.03	13.82	1.60	7th Power Plan
Agriculture	Miscellaneous	Agriculture - Engine Block Timer	employee	Existing	1,456.44	3	\$17.97	15%	33%	\$0.00	0.00	0.00	Vermont TRM
Agriculture	Motors	Agriculture - Live Stock Waterer	employee	Existing	617.14	10	\$338.86	15%	17%	\$0.07	1.96	0.00	Ontario Power TRM
Agriculture	Process	Dairy - Milk Precoolers	employee	Existing	3,004.76	15	\$1,409.23	15%	15%	\$0.05	1.97	0.00	Ontario Power TRM
Agriculture	Process	Clean Room: Change Filter Strategy	employee	Existing	46.56	15	\$0.34	0%	0%	\$0.00	0.00	0.00	7th Power Plan

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Agriculture	Process	Clean Room: Chiller Optimize	employee	Existing	901.28	15	\$83.45	0%	0%	\$0.01	0.00	52.60	7th Power Plan
Agriculture	Process	Clean Room: Clean Room HVAC	employee	Existing	547.23	15	\$100.73	0%	0%	\$0.02	0.00	13.56	7th Power Plan
Agriculture	Process	Elec Chip Fab: Solidstate Chiller	employee	Existing	540.54	15	\$316.39	0%	0%	\$0.06	0.00	332.42	7th Power Plan
Agriculture	Process	Elec Chip Fab: Eliminate Exhaust	employee	Existing	5.82	15	\$1.24	0%	0%	\$0.02	0.00	66.28	7th Power Plan
Agriculture	Process	Elec Chip Fab: Exhaust Injector	employee	Existing	11.50	15	\$5.96	0%	0%	\$0.06	0.00	4.15	7th Power Plan
Agriculture	Process	Elec Chip Fab: Reduce Gas Pressure	employee	Existing	11.64	15	\$0.12	0%	0%	\$0.00	0.00	88.69	7th Power Plan
Agriculture	Motors	Panel: Hydraulic Press	employee	Existing	2,764.71	10	\$661.56	0%	0%	\$0.03	0.00	17.91	7th Power Plan
Agriculture	Motors	Wood: Replace Pneumatic Conveyor	employee	Existing	3,005.29	10	\$49.54	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Agriculture	Process	Metal: New Arc Furnace	employee	Existing	1,626.02	10	\$170.69	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Agriculture	Process	Paper: Premium Control Large Material	employee	Existing	600.23	10	\$306.21	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Agriculture	Process	Paper: Efficient Pulp Screen	employee	Existing	490.27	10	\$100.87	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Agriculture	Process	Kraft: Effluent Treatment System	employee	Existing	490.27	10	\$41.35	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Agriculture	Motors	Kraft: Efficient Agitator	employee	Existing	5,096.55	10	\$493.67	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Agriculture	Process	Mech Pulp: Premium Process	employee	Existing	5.42	5	\$0.71	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Agriculture	Motors	Mech Pulp: Refiner Plate Improvement	employee	Existing	42.15	1	\$1.88	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Agriculture	Cooling	Transformer - High Efficiency	employee	Existing	79.30	10	\$105.00	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Agriculture	Heating	Transformer - High Efficiency	employee	Existing	150.05	10	\$105.00	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Agriculture	Ventilation	Transformer - High Efficiency	employee	Existing	8.23	10	\$105.00	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Agriculture	Interior Lighting	Transformer - High Efficiency	employee	Existing	30.80	10	\$105.00	15%	15%	\$0.02	0.00	5.22	7th Power Plan
Agriculture	Exterior Lighting	Transformer - High Efficiency	employee	Existing	6.48	10	\$105.00	15%	15%	\$0.02	0.00	6.28	7th Power Plan
Agriculture	Motors	Transformer - High Efficiency	employee	Existing	299.92	10	\$105.00	15%	15%	\$0.02	0.00	3.67	7th Power Plan

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Agriculture	Process	Transformer - High Efficiency	employee	Existing	240.38	10	\$105.00	15%	15%	\$0.02	0.00	1.35	7th Power Plan
Agriculture	Miscellaneous	Transformer - High Efficiency	employee	Existing	50.96	10	\$105.00	15%	15%	\$0.02	0.00	0.80	7th Power Plan
Agriculture	Cooling	Strategic Energy Management	employee	Existing	219.96	3	\$644.85	0%	5%	\$0.08	0.30	0.00	AEG Research
Agriculture	Heating	Strategic Energy Management	employee	Existing	425.97	3	\$644.85	0%	5%	\$0.08	0.64	0.00	AEG Research
Agriculture	Ventilation	Strategic Energy Management	employee	Existing	23.57	3	\$644.85	0%	5%	\$0.08	0.18	0.00	AEG Research
Agriculture	Interior Lighting	Strategic Energy Management	employee	Existing	87.63	3	\$644.85	0%	5%	\$0.08	0.56	0.00	AEG Research
Agriculture	Exterior Lighting	Strategic Energy Management	employee	Existing	18.56	3	\$644.85	0%	5%	\$0.08	0.12	26.14	AEG Research
Agriculture	Motors	Strategic Energy Management	employee	Existing	858.00	3	\$644.85	0%	5%	\$0.08	6.42	5.85	AEG Research
Agriculture	Process	Strategic Energy Management	employee	Existing	687.53	3	\$644.85	0%	5%	\$0.08	5.28	168.12	AEG Research
Agriculture	Miscellaneous	Strategic Energy Management	employee	Existing	145.64	3	\$644.85	0%	5%	\$0.08	1.41	27.54	AEG Research
Agriculture	Interior Lighting	Commissioning	employee	Existing	100.99	3	\$963.67	0%	0%	\$0.14	0.00	1.79	AEG Research
Agriculture	Exterior Lighting	Commissioning	employee	Existing	21.40	3	\$963.67	0%	0%	\$0.14	0.00	44.60	AEG Research
Agriculture	Motors	Commissioning	employee	Existing	988.78	3	\$963.67	0%	0%	\$0.14	0.00	7.44	AEG Research
Agriculture	Process	Commissioning	employee	Existing	792.30	3	\$963.67	0%	0%	\$0.14	0.00	0.00	AEG Research
Agriculture	Miscellaneous	Commissioning	employee	Existing	167.82	3	\$963.67	0%	0%	\$0.14	0.00	0.00	AEG Research
Agriculture	Interior Lighting	Retrocommissioning	employee	Existing	102.66	3	\$611.76	5%	39%	\$0.09	4.47	0.00	AEG Research
Agriculture	Exterior Lighting	Retrocommissioning	employee	Existing	21.60	3	\$611.76	5%	39%	\$0.09	0.93	0.00	AEG Research
Agriculture	Motors	Retrocommissioning	employee	Existing	999.74	3	\$611.76	5%	39%	\$0.09	51.22	0.00	AEG Research
Agriculture	Process	Retrocommissioning	employee	Existing	801.28	3	\$611.76	5%	39%	\$0.09	42.18	0.00	AEG Research
Agriculture	Miscellaneous	Retrocommissioning	employee	Existing	169.87	3	\$611.76	5%	39%	\$0.09	11.28	0.00	AEG Research
Agriculture	Motors	Municipal Sewage Treatment	employee	Existing	34.01	12	\$19.34	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Agriculture	Motors	Municipal Water Supply Treatment	employee	Existing	0.00	12	\$0.00	0%	0%	\$0.00	0.00	0.00	7th Power Plan

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Agriculture	Cooling	Insulation - Ceiling	sqft	New	0.11	45	\$1.28	15%	25%	\$0.15	0.17	0.00	Building Energy Simulation Tool
Agriculture	Heating	Insulation - Ceiling	sqft	New	0.51	45	\$1.28	15%	25%	\$0.15	0.83	0.00	Building Energy Simulation Tool
Agriculture	Ventilation	Insulation - Ceiling	sqft	New	0.01	45	\$1.28	15%	25%	\$0.15	0.10	0.00	Building Energy Simulation Tool
Agriculture	Cooling	Insulation - Ducting	sqft	New	0.04	20	\$0.84	15%	25%	\$1.09	0.07	0.00	Building Energy Simulation Tool
Agriculture	Heating	Insulation - Ducting	sqft	New	0.02	20	\$0.84	15%	25%	\$1.09	0.03	0.00	Building Energy Simulation Tool
Agriculture	Ventilation	Insulation - Ducting	sqft	New	0.00	20	\$0.84	15%	25%	\$1.09	0.00	0.00	Building Energy Simulation Tool
Agriculture	Cooling	Insulation - Wall Cavity	sqft	New	0.00	45	\$0.15	45%	50%	\$0.02	0.00	0.00	Building Energy Simulation Tool
Agriculture	Heating	Insulation - Wall Cavity	sqft	New	0.71	45	\$0.15	45%	50%	\$0.02	0.57	0.00	Building Energy Simulation Tool
Agriculture	Ventilation	Insulation - Wall Cavity	sqft	New	0.01	45	\$0.15	45%	50%	\$0.02	0.07	0.00	Building Energy Simulation Tool
Agriculture	Cooling	HVAC - Duct Repair and Sealing	sqft	New	0.01	18	\$0.00	15%	25%	\$0.00	0.02	0.00	Building Energy Simulation Tool
Agriculture	Heating	HVAC - Duct Repair and Sealing	sqft	New	0.05	18	\$0.00	15%	25%	\$0.00	0.08	0.00	Building Energy Simulation Tool
Agriculture	Ventilation	HVAC - Duct Repair and Sealing	sqft	New	0.00	18	\$0.00	15%	25%	\$0.00	0.01	0.00	Building Energy Simulation Tool
Agriculture	Cooling	Chiller - Chilled Water Reset	sqft	New	0.03	10	\$0.01	15%	45%	\$0.03	0.03	0.00	AEG-BEST
Agriculture	Cooling	Chiller - Chilled Water Variable-Flow System	sqft	New	0.19	15	\$0.50	15%	60%	\$0.25	0.29	0.02	AEG-BEST
Agriculture	Cooling	Chiller - Variable Speed Fans	sqft	New	0.07	15	\$0.03	15%	75%	\$0.04	0.14	0.00	New Jersey TRM
Agriculture	Cooling	HVAC - Economizer	sqft	New	0.42	10	\$0.25	18%	30%	\$0.07	0.13	0.00	AEG-BEST
Agriculture	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.25	15%	35%	\$12.02	0.02	0.01	7th Power Plan
Agriculture	Cooling	Destratification Fans (HVLS)	sqft	New	0.14	15	\$0.63	15%	50%	\$0.05	0.40	0.00	AEG Research
Agriculture	Heating	Destratification Fans (HVLS)	sqft	New	1.30	15	\$0.63	15%	50%	\$0.05	3.83	0.00	AEG Research
Agriculture	Cooling	RTU - Maintenance	sqft	New	0.08	3	\$0.07	15%	75%	\$0.27	0.07	0.00	AEG Research
Agriculture	Cooling	Thermostat - WiFi/Interactive	sqft	New	0.26	5	\$0.66	5%	15%	\$0.09	0.05	0.00	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Agriculture	Heating	Thermostat - WiFi/Interactive	sqft	New	1.21	5	\$0.66	5%	15%	\$0.09	0.24	0.00	7th Power Plan
Agriculture	Ventilation	Thermostat - WiFi/Interactive	sqft	New	0.02	5	\$0.66	5%	15%	\$0.09	0.03	0.00	7th Power Plan
Agriculture	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.43	15	\$0.35	22%	41%	\$0.05	3.63	0.00	7th Power Plan
Agriculture	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.58	15	\$0.58	22%	41%	\$0.06	4.92	0.00	7th Power Plan
Agriculture	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	New	0.02	15	\$0.00	1%	2%	\$0.01	0.01	0.00	7th Power Plan
Agriculture	Interior Lighting	Interior Lighting - Timeclocks and Timers	sqft	New	0.00	8	\$0.00	7%	7%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Agriculture	Interior Lighting	Interior Lighting - Skylights	sqft	New	0.00	15	\$1.01	18%	24%	\$0.00	0.00	0.00	AEG Research
Agriculture	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	sqft	New	0.03	16	\$1.81	5%	40%	\$3.94	0.27	0.00	7th Power Plan
Agriculture	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	New	0.03	11	\$0.00	15%	50%	\$0.01	0.24	0.00	Illinois TRM
Agriculture	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	sqft	New	0.04	8	\$0.03	15%	25%	\$0.08	0.22	0.00	7th Power Plan
Agriculture	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	New	0.02	8	\$0.02	44%	60%	\$0.08	0.19	0.00	Pacific Gas and Electric Research
Agriculture	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	New	0.02	7	\$1.19	15%	30%	\$4.41	0.19	0.00	AEG Research
Agriculture	Process	Process - Conductivity Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Agriculture	Process	Process - Timers and Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Agriculture	Motors	Process - Timers and Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Agriculture	Process	Refrigeration - Floating Head Pressure	employee	New	453.59	15	\$312.98	20%	50%	\$0.07	2.77	0.00	RTF Workbook
Agriculture	Process	Refrigeration - System Optimization	employee	New	729.64	15	\$109.44	20%	50%	\$0.02	4.46	0.00	AEG Research
Agriculture	Motors	Pumping System - Equipment Upgrade	employee	New	266.28	10	\$38.48	9%	38%	\$0.05	1.22	0.00	7th Power Plan
Agriculture	Motors	Pumping System - System Optimization	employee	New	198.85	12	\$58.64	9%	38%	\$0.04	1.38	0.00	UNIDO Study on Industrial Energy Efficiency

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Agriculture	Motors	Pumping System - Variable Speed Drive	employee	New	198.11	10	\$61.01	9%	38%	\$0.04	1.25	0.02	UNIDO Study on Industrial Energy Efficiency
Agriculture	Motors	Fan System - Equipment Upgrade	employee	New	921.50	10	\$90.39	9%	38%	\$0.04	5.79	0.00	UNIDO Study on Industrial Energy Efficiency
Agriculture	Motors	Fan System - Flow Optimization	employee	New	1,084.03	10	\$149.56	9%	38%	\$0.02	6.82	0.00	UNIDO Study on Industrial Energy Efficiency
Agriculture	Motors	Fan System - Variable Speed Drive	employee	New	1,628.92	10	\$752.57	9%	38%	\$0.06	10.29	0.00	UNIDO Study on Industrial Energy Efficiency
Agriculture	Motors	Compressed Air - Equipment Upgrade	employee	New	626.63	10	\$45.60	17%	50%	\$0.04	3.35	0.00	7th Power Plan
Agriculture	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	New	0.00	15	\$0.00	16%	38%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Agriculture	Motors	Compressed Air - Refrigerated Cycling Dryers	employee	New	0.00	10	\$0.00	16%	30%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Agriculture	Motors	Compressed Air - System Controls	employee	New	140.12	10	\$32.60	9%	38%	\$0.03	0.65	0.00	UNIDO Study on Industrial Energy Efficiency
Agriculture	Motors	Compressed Air - Leak Management Program	employee	New	356.89	10	\$32.77	18%	75%	\$0.04	3.27	0.00	7th Power Plan
Agriculture	Motors	Compressed Air - Variable Speed Drive	employee	New	259.98	15	\$199.88	26%	45%	\$0.08	1.02	0.00	UNIDO Study on Industrial Energy Efficiency
Agriculture	Motors	Compressed Air - Low Pressure-Drop Filters	employee	New	8.67	10	\$3.08	17%	50%	\$0.05	0.05	0.00	Illinois TRM
Agriculture	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	New	52.61	10	\$9.99	17%	50%	\$0.03	0.28	0.00	UNIDO Study on Industrial Energy Efficiency
Agriculture	Motors	Compressed Air - Outside Air Intake	employee	New	0.00	20	\$0.00	17%	50%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Agriculture	Motors	Compressed Air - Receiver Capacity Addition	employee	New	52.44	15	\$27.48	17%	50%	\$0.06	0.36	0.00	UNIDO Study on Industrial Energy Efficiency
Agriculture	Motors	Material Handling - Variable Speed Drive	employee	New	1,891.56	10	\$661.96	25%	45%	\$0.05	8.37	0.00	7th Power Plan
Agriculture	Motors	Motors - Green Rewind (<100 HP)	employee	New	47.74	10	\$20.20	10%	50%	\$0.06	1.69	0.00	7th Power Plan
Agriculture	Motors	Motors - Green Rewind (100 HP+)	employee	New	26.77	10	\$7.17	6%	25%	\$0.04	0.45	0.02	7th Power Plan
Agriculture	Motors	Switch from Belt Drive to Direct Drive	employee	New	404.10	12	\$88.69	16%	25%	\$0.03	3.73	0.02	2015-mdu-irp-report---volume-iii.pdf
Agriculture	Motors	Motors - Synchronous Belts	employee	New	107.25	10	\$26.68	16%	36%	\$0.03	1.38	0.02	7th Power Plan

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Agriculture	Miscellaneous	Agriculture - Engine Block Timer	employee	New	1,456.44	3	\$17.97	15%	33%	\$0.00	0.00	0.01	Vermont TRM
Agriculture	Motors	Agriculture - Live Stock Waterer	employee	New	648.31	10	\$338.86	15%	17%	\$0.07	0.29	0.00	Ontario Power TRM
Agriculture	Process	Dairy - Milk Precoolers	employee	New	3,024.86	15	\$1,409.23	15%	15%	\$0.05	0.31	0.00	Ontario Power TRM
Agriculture	Process	Clean Room: Change Filter Strategy	employee	New	46.56	15	\$0.34	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Agriculture	Process	Clean Room: Chiller Optimize	employee	New	901.28	15	\$83.45	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Agriculture	Process	Clean Room: Clean Room HVAC	employee	New	544.47	15	\$100.73	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Agriculture	Process	Elec Chip Fab: Solidstate Chiller	employee	New	544.31	15	\$316.39	0%	0%	\$0.06	0.00	0.11	7th Power Plan
Agriculture	Process	Elec Chip Fab: Eliminate Exhaust	employee	New	5.79	15	\$1.24	0%	0%	\$0.02	0.00	0.02	7th Power Plan
Agriculture	Process	Elec Chip Fab: Exhaust Injector	employee	New	11.58	15	\$5.96	0%	0%	\$0.06	0.00	0.53	7th Power Plan
Agriculture	Process	Elec Chip Fab: Reduce Gas Pressure	employee	New	11.64	15	\$0.12	0%	0%	\$0.00	0.00	0.10	7th Power Plan
Agriculture	Motors	Panel: Hydraulic Press	employee	New	2,838.65	10	\$661.56	0%	0%	\$0.03	0.00	0.01	7th Power Plan
Agriculture	Motors	Wood: Replace Pneumatic Conveyor	employee	New	3,005.29	10	\$49.54	0%	0%	\$0.00	0.00	0.14	7th Power Plan
Agriculture	Process	Metal: New Arc Furnace	employee	New	1,617.83	10	\$170.69	0%	0%	\$0.01	0.00	0.03	7th Power Plan
Agriculture	Process	Paper: Premium Control Large Material	employee	New	606.92	10	\$306.21	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Agriculture	Process	Paper: Efficient Pulp Screen	employee	New	487.80	10	\$100.87	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Agriculture	Process	Kraft: Effluent Treatment System	employee	New	487.80	10	\$41.35	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Agriculture	Motors	Kraft: Efficient Agitator	employee	New	5,147.74	10	\$493.67	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Agriculture	Process	Mech Pulp: Premium Process	employee	New	5.44	5	\$0.71	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Agriculture	Motors	Mech Pulp: Refiner Plate Improvement	employee	New	44.29	1	\$1.88	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Agriculture	Cooling	Transformer - High Efficiency	employee	New	70.93	10	\$103.10	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Agriculture	Heating	Transformer - High Efficiency	employee	New	149.66	10	\$103.10	15%	15%	\$0.02	0.00	0.00	7th Power Plan

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Agriculture	Ventilation	Transformer - High Efficiency	employee	New	4.75	10	\$103.10	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Agriculture	Interior Lighting	Transformer - High Efficiency	employee	New	22.95	10	\$103.10	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Agriculture	Exterior Lighting	Transformer - High Efficiency	employee	New	4.85	10	\$103.10	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Agriculture	Motors	Transformer - High Efficiency	employee	New	315.14	10	\$103.10	15%	15%	\$0.02	0.00	0.01	7th Power Plan
Agriculture	Process	Transformer - High Efficiency	employee	New	243.06	10	\$103.10	15%	15%	\$0.02	0.00	0.01	7th Power Plan
Agriculture	Miscellaneous	Transformer - High Efficiency	employee	New	51.18	10	\$103.10	15%	15%	\$0.02	0.00	0.01	7th Power Plan
Agriculture	Cooling	Strategic Energy Management	employee	New	202.51	3	\$633.19	0%	5%	\$0.08	0.00	0.00	AEG Research
Agriculture	Heating	Strategic Energy Management	employee	New	430.11	3	\$633.19	0%	5%	\$0.08	0.01	0.00	AEG Research
Agriculture	Ventilation	Strategic Energy Management	employee	New	13.69	3	\$633.19	0%	5%	\$0.08	0.00	0.00	AEG Research
Agriculture	Interior Lighting	Strategic Energy Management	employee	New	66.10	3	\$633.19	0%	5%	\$0.08	0.01	0.00	AEG Research
Agriculture	Exterior Lighting	Strategic Energy Management	employee	New	14.02	3	\$633.19	0%	5%	\$0.08	0.00	0.00	AEG Research
Agriculture	Motors	Strategic Energy Management	employee	New	910.42	3	\$633.19	0%	5%	\$0.08	0.08	0.00	AEG Research
Agriculture	Process	Strategic Energy Management	employee	New	702.18	3	\$633.19	0%	5%	\$0.08	0.06	0.06	AEG Research
Agriculture	Miscellaneous	Strategic Energy Management	employee	New	147.85	3	\$633.19	0%	5%	\$0.08	0.02	0.01	AEG Research
Agriculture	Interior Lighting	Commissioning	employee	New	76.25	3	\$968.12	5%	39%	\$0.15	0.05	0.34	AEG Research
Agriculture	Exterior Lighting	Commissioning	employee	New	16.17	3	\$968.12	5%	39%	\$0.15	0.01	0.06	AEG Research
Agriculture	Motors	Commissioning	employee	New	1,050.25	3	\$968.12	5%	39%	\$0.15	0.62	0.00	AEG Research
Agriculture	Process	Commissioning	employee	New	810.03	3	\$968.12	5%	39%	\$0.15	0.48	0.09	AEG Research
Agriculture	Miscellaneous	Commissioning	employee	New	170.56	3	\$968.12	5%	39%	\$0.15	0.13	0.02	AEG Research
Agriculture	Interior Lighting	Retrocommissioning	employee	New	76.50	3	\$614.58	0%	0%	\$0.09	0.00	0.00	AEG Research

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Agriculture	Exterior Lighting	Retrocommissioning	employee	New	16.17	3	\$614.58	0%	0%	\$0.09	0.00	0.00	AEG Research
Agriculture	Motors	Retrocommissioning	employee	New	1,050.48	3	\$614.58	0%	0%	\$0.09	0.00	0.00	AEG Research
Agriculture	Process	Retrocommissioning	employee	New	810.21	3	\$614.58	0%	0%	\$0.09	0.00	0.00	AEG Research
Agriculture	Miscellaneous	Retrocommissioning	employee	New	170.60	3	\$614.58	0%	0%	\$0.09	0.00	0.00	AEG Research
Agriculture	Motors	Municipal Sewage Treatment	employee	New	35.38	12	\$19.34	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Agriculture	Motors	Municipal Water Supply Treatment	employee	New	0.00	12	\$0.00	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Mining and Extraction	Cooling	Insulation - Ceiling	sqft	Existing	0.13	45	\$1.28	15%	25%	\$0.14	0.05	0.00	Building Energy Simulation Tool
Mining and Extraction	Heating	Insulation - Ceiling	sqft	Existing	0.52	45	\$1.28	15%	25%	\$0.14	0.22	0.06	Building Energy Simulation Tool
Mining and Extraction	Ventilation	Insulation - Ceiling	sqft	Existing	0.02	45	\$1.28	15%	25%	\$0.14	0.03	0.28	Building Energy Simulation Tool
Mining and Extraction	Cooling	Insulation - Ducting	sqft	Existing	0.05	20	\$0.84	15%	25%	\$1.01	0.02	0.07	Building Energy Simulation Tool
Mining and Extraction	Heating	Insulation - Ducting	sqft	Existing	0.02	20	\$0.84	15%	25%	\$1.01	0.01	0.00	Building Energy Simulation Tool
Mining and Extraction	Ventilation	Insulation - Ducting	sqft	Existing	0.00	20	\$0.84	15%	25%	\$1.01	0.00	0.02	Building Energy Simulation Tool
Mining and Extraction	Cooling	Insulation - Wall Cavity	sqft	Existing	0.00	45	\$0.15	45%	50%	\$0.02	0.00	0.00	Building Energy Simulation Tool
Mining and Extraction	Heating	Insulation - Wall Cavity	sqft	Existing	0.76	45	\$0.15	45%	50%	\$0.02	0.17	0.02	Building Energy Simulation Tool
Mining and Extraction	Ventilation	Insulation - Wall Cavity	sqft	Existing	0.02	45	\$0.15	45%	50%	\$0.02	0.02	2.01	Building Energy Simulation Tool
Mining and Extraction	Cooling	HVAC - Duct Repair and Sealing	sqft	Existing	0.02	18	\$0.00	15%	25%	\$0.00	0.01	0.28	Building Energy Simulation Tool
Mining and Extraction	Heating	HVAC - Duct Repair and Sealing	sqft	Existing	0.05	18	\$0.00	15%	25%	\$0.00	0.02	0.08	Building Energy Simulation Tool
Mining and Extraction	Ventilation	HVAC - Duct Repair and Sealing	sqft	Existing	0.00	18	\$0.00	15%	25%	\$0.00	0.00	0.57	Building Energy Simulation Tool
Mining and Extraction	Cooling	Chiller - Chilled Water Reset	sqft	Existing	0.04	10	\$0.01	15%	45%	\$0.03	0.02	0.33	AEG-BEST
Mining and Extraction	Cooling	Chiller - Chilled Water Variable-Flow System	sqft	Existing	0.24	15	\$0.50	15%	60%	\$0.21	0.16	0.00	AEG-BEST

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Mining and Extraction	Cooling	Chiller - Variable Speed Fans	sqft	Existing	0.09	15	\$0.03	15%	75%	\$0.04	0.08	0.00	New Jersey TRM
Mining and Extraction	Cooling	HVAC - Economizer	sqft	Existing	0.34	10	\$0.25	18%	30%	\$0.09	0.08	0.00	AEG-BEST
Mining and Extraction	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.25	15%	35%	\$10.33	0.01	0.00	7th Power Plan
Mining and Extraction	Cooling	Destratification Fans (HVLS)	sqft	Existing	0.16	15	\$0.63	15%	50%	\$0.04	0.23	0.00	AEG Research
Mining and Extraction	Heating	Destratification Fans (HVLS)	sqft	Existing	1.38	15	\$0.63	15%	50%	\$0.04	2.16	0.00	AEG Research
Mining and Extraction	Cooling	RTU - Maintenance	sqft	Existing	0.08	3	\$0.07	15%	75%	\$0.26	0.16	0.00	AEG Research
Mining and Extraction	Cooling	Thermostat - WiFi/Interactive	sqft	Existing	0.29	5	\$0.66	5%	15%	\$0.09	0.11	0.00	7th Power Plan
Mining and Extraction	Heating	Thermostat - WiFi/Interactive	sqft	Existing	1.21	5	\$0.66	5%	15%	\$0.09	0.51	0.00	7th Power Plan
Mining and Extraction	Ventilation	Thermostat - WiFi/Interactive	sqft	Existing	0.04	5	\$0.66	5%	15%	\$0.09	0.08	0.00	7th Power Plan
Mining and Extraction	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.39	15	\$0.35	7%	33%	\$0.07	1.25	0.00	7th Power Plan
Mining and Extraction	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.54	15	\$0.58	7%	33%	\$0.09	1.65	0.00	7th Power Plan
Mining and Extraction	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	Existing	0.02	15	\$0.00	1%	2%	\$0.01	0.01	0.00	7th Power Plan
Mining and Extraction	Interior Lighting	Interior Lighting - Timeclocks and Timers	sqft	Existing	0.00	8	\$0.00	7%	7%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Mining and Extraction	Interior Lighting	Interior Lighting - Skylights	sqft	Existing	0.00	15	\$1.01	15%	23%	\$0.00	0.00	0.00	AEG Research
Mining and Extraction	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	sqft	Existing	0.03	16	\$1.81	5%	40%	\$3.95	0.18	0.00	7th Power Plan
Mining and Extraction	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	Existing	0.04	11	\$0.00	15%	50%	\$0.01	0.21	0.00	Illinois TRM
Mining and Extraction	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	sqft	Existing	0.05	8	\$0.03	15%	25%	\$0.08	0.25	0.00	7th Power Plan
Mining and Extraction	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	Existing	0.03	8	\$0.02	33%	60%	\$0.08	0.35	0.00	Pacific Gas and Electric Research
Mining and Extraction	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	Existing	0.03	7	\$1.19	15%	30%	\$4.39	0.22	0.00	AEG Research

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Mining and Extraction	Process	Process - Conductivity Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Mining and Extraction	Process	Process - Timers and Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Mining and Extraction	Motors	Process - Timers and Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Mining and Extraction	Process	Refrigeration - Floating Head Pressure	employee	Existing	0.00	15	\$63.45	20%	50%	\$0.00	0.00	0.00	RTF Workbook
Mining and Extraction	Process	Refrigeration - System Optimization	employee	Existing	0.00	15	\$44.68	20%	50%	\$0.00	0.00	0.00	AEG Research
Mining and Extraction	Motors	Pumping System - Equipment Upgrade	employee	Existing	5,749.57	10	\$846.90	9%	38%	\$0.05	20.79	0.00	7th Power Plan
Mining and Extraction	Motors	Pumping System - System Optimization	employee	Existing	4,206.40	12	\$1,290.67	9%	38%	\$0.04	14.71	0.00	UNIDO Study on Industrial Energy Efficiency
Mining and Extraction	Motors	Pumping System - Variable Speed Drive	employee	Existing	4,121.74	10	\$1,342.78	9%	38%	\$0.04	14.31	0.00	UNIDO Study on Industrial Energy Efficiency
Mining and Extraction	Motors	Fan System - Equipment Upgrade	employee	Existing	883.07	10	\$88.72	9%	38%	\$0.04	3.12	0.00	UNIDO Study on Industrial Energy Efficiency
Mining and Extraction	Motors	Fan System - Flow Optimization	employee	Existing	1,041.10	10	\$146.80	9%	38%	\$0.02	3.67	0.00	UNIDO Study on Industrial Energy Efficiency
Mining and Extraction	Motors	Fan System - Variable Speed Drive	employee	Existing	1,494.14	10	\$738.67	9%	38%	\$0.06	5.15	0.00	UNIDO Study on Industrial Energy Efficiency
Mining and Extraction	Motors	Compressed Air - Equipment Upgrade	employee	Existing	4,345.14	10	\$316.18	17%	50%	\$0.04	18.51	0.00	7th Power Plan
Mining and Extraction	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	Existing	0.00	15	\$0.00	16%	38%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Mining and Extraction	Motors	Compressed Air - Refrigerated Cycling Dryers	employee	Existing	0.00	10	\$0.00	16%	30%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Mining and Extraction	Motors	Compressed Air - System Controls	employee	Existing	923.70	10	\$226.07	9%	38%	\$0.03	3.30	0.00	UNIDO Study on Industrial Energy Efficiency
Mining and Extraction	Motors	Compressed Air - Leak Management Program	employee	Existing	2,444.94	10	\$227.25	18%	75%	\$0.04	17.78	0.00	7th Power Plan
Mining and Extraction	Motors	Compressed Air - Variable Speed Drive	employee	Existing	1,691.75	15	\$1,385.99	26%	45%	\$0.08	4.00	0.00	UNIDO Study on Industrial Energy Efficiency
Mining and Extraction	Motors	Compressed Air - Low Pressure-Drop Filters	employee	Existing	56.40	10	\$21.36	17%	50%	\$0.05	0.23	0.00	Illinois TRM
Mining and Extraction	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	Existing	350.99	10	\$69.30	17%	50%	\$0.03	1.47	0.00	UNIDO Study on Industrial Energy Efficiency

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Mining and Extraction	Motors	Compressed Air - Outside Air Intake	employee	Existing	0.00	20	\$0.00	17%	50%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Mining and Extraction	Motors	Compressed Air - Receiver Capacity Addition	employee	Existing	343.92	15	\$190.57	17%	50%	\$0.06	1.43	0.07	UNIDO Study on Industrial Energy Efficiency
Mining and Extraction	Motors	Material Handling - Variable Speed Drive	employee	Existing	1,483.25	10	\$555.10	25%	45%	\$0.05	3.60	0.02	7th Power Plan
Mining and Extraction	Motors	Motors - Green Rewind (<100 HP)	employee	Existing	134.84	10	\$60.98	10%	50%	\$0.06	3.26	1.09	7th Power Plan
Mining and Extraction	Motors	Motors - Green Rewind (100 HP+)	employee	Existing	76.48	10	\$21.64	6%	25%	\$0.04	0.89	0.55	7th Power Plan
Mining and Extraction	Motors	Switch from Belt Drive to Direct Drive	employee	Existing	1,176.42	12	\$267.66	16%	25%	\$0.03	6.87	0.10	2015-mdu-irp-report---volume-iii.pdf
Mining and Extraction	Motors	Motors - Synchronous Belts	employee	Existing	306.99	10	\$80.52	16%	36%	\$0.03	3.84	0.00	7th Power Plan
Mining and Extraction	Miscellaneous	Agriculture - Engine Block Timer	employee	Existing	531.11	3	\$6.55	0%	0%	\$0.00	0.00	0.00	Vermont TRM
Mining and Extraction	Motors	Agriculture - Live Stock Waterer	employee	Existing	13,389.07	10	\$7,458.43	0%	0%	\$0.07	0.00	0.00	Ontario Power TRM
Mining and Extraction	Process	Dairy - Milk Precoolers	employee	Existing	0.00	15	\$201.92	0%	0%	\$0.00	0.00	0.01	Ontario Power TRM
Mining and Extraction	Process	Clean Room: Change Filter Strategy	employee	Existing	348.48	15	\$2.57	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Mining and Extraction	Process	Clean Room: Chiller Optimize	employee	Existing	0.00	15	\$11.96	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Mining and Extraction	Process	Clean Room: Clean Room HVAC	employee	Existing	0.00	15	\$14.43	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Mining and Extraction	Process	Elec Chip Fab: Solidstate Chiller	employee	Existing	0.00	15	\$45.33	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Mining and Extraction	Process	Elec Chip Fab: Eliminate Exhaust	employee	Existing	43.56	15	\$9.25	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Mining and Extraction	Process	Elec Chip Fab: Exhaust Injector	employee	Existing	87.12	15	\$44.61	0%	0%	\$0.06	0.00	0.01	7th Power Plan
Mining and Extraction	Process	Elec Chip Fab: Reduce Gas Pressure	employee	Existing	87.12	15	\$0.89	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Mining and Extraction	Motors	Panel: Hydraulic Press	employee	Existing	2,263.07	10	\$554.77	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Mining and Extraction	Motors	Wood: Replace Pneumatic Conveyor	employee	Existing	2,520.18	10	\$41.55	0%	0%	\$0.00	0.00	0.00	7th Power Plan

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Mining and Extraction	Process	Metal: New Arc Furnace	employee	Existing	392.04	10	\$41.15	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Mining and Extraction	Process	Paper: Premium Control Large Material	employee	Existing	407.88	10	\$204.05	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Mining and Extraction	Process	Paper: Efficient Pulp Screen	employee	Existing	326.70	10	\$67.21	0%	0%	\$0.03	0.00	0.01	7th Power Plan
Mining and Extraction	Process	Kraft: Effluent Treatment System	employee	Existing	326.70	10	\$27.56	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Mining and Extraction	Motors	Kraft: Efficient Agitator	employee	Existing	4,214.68	10	\$413.99	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Mining and Extraction	Process	Mech Pulp: Premium Process	employee	Existing	3.66	5	\$0.47	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Mining and Extraction	Motors	Mech Pulp: Refiner Plate Improvement	employee	Existing	34.86	1	\$1.58	0%	0%	\$0.04	0.00	0.01	7th Power Plan
Mining and Extraction	Cooling	Transformer - High Efficiency	employee	Existing	59.18	10	\$182.04	15%	15%	\$0.02	0.00	0.08	7th Power Plan
Mining and Extraction	Heating	Transformer - High Efficiency	employee	Existing	112.07	10	\$182.04	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Mining and Extraction	Ventilation	Transformer - High Efficiency	employee	Existing	6.12	10	\$182.04	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Mining and Extraction	Interior Lighting	Transformer - High Efficiency	employee	Existing	33.86	10	\$182.04	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Mining and Extraction	Exterior Lighting	Transformer - High Efficiency	employee	Existing	7.31	10	\$182.04	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Mining and Extraction	Motors	Transformer - High Efficiency	employee	Existing	1,115.76	10	\$182.04	15%	15%	\$0.02	0.00	0.07	7th Power Plan
Mining and Extraction	Process	Transformer - High Efficiency	employee	Existing	98.01	10	\$182.04	15%	15%	\$0.02	0.00	0.10	7th Power Plan
Mining and Extraction	Miscellaneous	Transformer - High Efficiency	employee	Existing	20.10	10	\$182.04	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Mining and Extraction	Cooling	Strategic Energy Management	employee	Existing	164.15	3	\$1,118.01	0%	0%	\$0.08	0.00	0.00	AEG Research
Mining and Extraction	Heating	Strategic Energy Management	employee	Existing	318.13	3	\$1,118.01	0%	0%	\$0.08	0.00	0.00	AEG Research
Mining and Extraction	Ventilation	Strategic Energy Management	employee	Existing	17.54	3	\$1,118.01	0%	0%	\$0.08	0.00	0.01	AEG Research
Mining and Extraction	Interior Lighting	Strategic Energy Management	employee	Existing	96.45	3	\$1,118.01	0%	0%	\$0.08	0.00	0.01	AEG Research

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Mining and Extraction	Exterior Lighting	Strategic Energy Management	employee	Existing	20.97	3	\$1,118.01	0%	0%	\$0.08	0.00	0.01	AEG Research
Mining and Extraction	Motors	Strategic Energy Management	employee	Existing	3,195.65	3	\$1,118.01	0%	0%	\$0.08	0.00	0.01	AEG Research
Mining and Extraction	Process	Strategic Energy Management	employee	Existing	280.64	3	\$1,118.01	0%	0%	\$0.08	0.00	0.01	AEG Research
Mining and Extraction	Miscellaneous	Strategic Energy Management	employee	Existing	57.51	3	\$1,118.01	0%	0%	\$0.08	0.00	0.00	AEG Research
Mining and Extraction	Interior Lighting	Commissioning	employee	Existing	111.28	3	\$2,152.75	0%	0%	\$0.15	0.00	0.00	AEG Research
Mining and Extraction	Exterior Lighting	Commissioning	employee	Existing	24.20	3	\$2,152.75	0%	0%	\$0.15	0.00	0.00	AEG Research
Mining and Extraction	Motors	Commissioning	employee	Existing	3,687.30	3	\$2,152.75	0%	0%	\$0.15	0.00	0.01	AEG Research
Mining and Extraction	Process	Commissioning	employee	Existing	323.82	3	\$2,152.75	0%	0%	\$0.15	0.00	0.01	AEG Research
Mining and Extraction	Miscellaneous	Commissioning	employee	Existing	66.36	3	\$2,152.75	0%	0%	\$0.15	0.00	0.09	AEG Research
Mining and Extraction	Interior Lighting	Retrocommissioning	employee	Existing	112.86	3	\$1,366.61	10%	40%	\$0.10	0.32	0.09	AEG Research
Mining and Extraction	Exterior Lighting	Retrocommissioning	employee	Existing	24.38	3	\$1,366.61	10%	40%	\$0.10	0.07	0.08	AEG Research
Mining and Extraction	Motors	Retrocommissioning	employee	Existing	3,719.19	3	\$1,366.61	10%	40%	\$0.10	12.75	0.08	AEG Research
Mining and Extraction	Process	Retrocommissioning	employee	Existing	326.70	3	\$1,366.61	10%	40%	\$0.10	1.16	0.09	AEG Research
Mining and Extraction	Miscellaneous	Retrocommissioning	employee	Existing	67.01	3	\$1,366.61	10%	40%	\$0.10	0.30	0.14	AEG Research
Mining and Extraction	Motors	Municipal Sewage Treatment	employee	Existing	728.68	12	\$425.75	0%	0%	\$0.07	0.00	0.05	7th Power Plan
Mining and Extraction	Motors	Municipal Water Supply Treatment	employee	Existing	0.00	12	\$0.00	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Mining and Extraction	Cooling	Insulation - Ceiling	sqft	New	0.11	45	\$1.28	15%	25%	\$0.15	0.01	0.00	Building Energy Simulation Tool
Mining and Extraction	Heating	Insulation - Ceiling	sqft	New	0.51	45	\$1.28	15%	25%	\$0.15	0.06	0.01	Building Energy Simulation Tool
Mining and Extraction	Ventilation	Insulation - Ceiling	sqft	New	0.01	45	\$1.28	15%	25%	\$0.15	0.01	0.04	Building Energy Simulation Tool

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Mining and Extraction	Cooling	Insulation - Ducting	sqft	New	0.04	20	\$0.84	15%	25%	\$1.09	0.01	0.01	Building Energy Simulation Tool
Mining and Extraction	Heating	Insulation - Ducting	sqft	New	0.02	20	\$0.84	15%	25%	\$1.09	0.00	0.00	Building Energy Simulation Tool
Mining and Extraction	Ventilation	Insulation - Ducting	sqft	New	0.00	20	\$0.84	15%	25%	\$1.09	0.00	0.00	Building Energy Simulation Tool
Mining and Extraction	Cooling	Insulation - Wall Cavity	sqft	New	0.00	45	\$0.15	45%	50%	\$0.02	0.00	0.00	Building Energy Simulation Tool
Mining and Extraction	Heating	Insulation - Wall Cavity	sqft	New	0.71	45	\$0.15	45%	50%	\$0.02	0.04	0.00	Building Energy Simulation Tool
Mining and Extraction	Ventilation	Insulation - Wall Cavity	sqft	New	0.01	45	\$0.15	45%	50%	\$0.02	0.01	0.39	Building Energy Simulation Tool
Mining and Extraction	Cooling	HVAC - Duct Repair and Sealing	sqft	New	0.01	18	\$0.00	15%	25%	\$0.00	0.00	0.05	Building Energy Simulation Tool
Mining and Extraction	Heating	HVAC - Duct Repair and Sealing	sqft	New	0.05	18	\$0.00	15%	25%	\$0.00	0.01	0.01	Building Energy Simulation Tool
Mining and Extraction	Ventilation	HVAC - Duct Repair and Sealing	sqft	New	0.00	18	\$0.00	15%	25%	\$0.00	0.00	0.12	Building Energy Simulation Tool
Mining and Extraction	Cooling	Chiller - Chilled Water Reset	sqft	New	0.04	10	\$0.01	15%	45%	\$0.03	0.00	0.05	AEG-BEST
Mining and Extraction	Cooling	Chiller - Chilled Water Variable-Flow System	sqft	New	0.20	15	\$0.50	15%	60%	\$0.25	0.03	0.00	AEG-BEST
Mining and Extraction	Cooling	Chiller - Variable Speed Fans	sqft	New	0.07	15	\$0.03	15%	75%	\$0.04	0.01	0.00	New Jersey TRM
Mining and Extraction	Cooling	HVAC - Economizer	sqft	New	0.31	10	\$0.25	18%	30%	\$0.10	0.01	0.00	AEG-BEST
Mining and Extraction	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.25	15%	35%	\$12.05	0.00	0.00	7th Power Plan
Mining and Extraction	Cooling	Destratification Fans (HVLS)	sqft	New	0.15	15	\$0.63	15%	50%	\$0.05	0.04	0.00	AEG Research
Mining and Extraction	Heating	Destratification Fans (HVLS)	sqft	New	1.30	15	\$0.63	15%	50%	\$0.05	0.34	0.00	AEG Research
Mining and Extraction	Cooling	RTU - Maintenance	sqft	New	0.08	3	\$0.07	15%	75%	\$0.27	0.01	0.00	AEG Research
Mining and Extraction	Cooling	Thermostat - WiFi/Interactive	sqft	New	0.27	5	\$0.66	5%	15%	\$0.09	0.00	0.00	7th Power Plan
Mining and Extraction	Heating	Thermostat - WiFi/Interactive	sqft	New	1.20	5	\$0.66	5%	15%	\$0.09	0.02	0.00	7th Power Plan

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Mining and Extraction	Ventilation	Thermostat - WiFi/Interactive	sqft	New	0.03	5	\$0.66	5%	15%	\$0.09	0.00	0.00	7th Power Plan
Mining and Extraction	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.36	15	\$0.35	22%	41%	\$0.07	0.38	0.00	7th Power Plan
Mining and Extraction	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.49	15	\$0.58	22%	41%	\$0.08	0.52	0.00	7th Power Plan
Mining and Extraction	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	New	0.02	15	\$0.00	1%	2%	\$0.01	0.00	0.00	7th Power Plan
Mining and Extraction	Interior Lighting	Interior Lighting - Timeclocks and Timers	sqft	New	0.00	8	\$0.00	7%	7%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Mining and Extraction	Interior Lighting	Interior Lighting - Skylights	sqft	New	0.00	15	\$1.01	18%	24%	\$0.00	0.00	0.00	AEG Research
Mining and Extraction	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	sqft	New	0.03	16	\$1.81	5%	40%	\$3.94	0.04	0.00	7th Power Plan
Mining and Extraction	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	New	0.03	11	\$0.00	15%	50%	\$0.01	0.03	0.00	Illinois TRM
Mining and Extraction	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	sqft	New	0.04	8	\$0.03	15%	25%	\$0.08	0.03	0.00	7th Power Plan
Mining and Extraction	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	New	0.02	8	\$0.02	44%	60%	\$0.08	0.03	0.00	Pacific Gas and Electric Research
Mining and Extraction	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	New	0.03	7	\$1.19	15%	30%	\$4.34	0.03	0.00	AEG Research
Mining and Extraction	Process	Process - Conductivity Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Mining and Extraction	Process	Process - Timers and Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Mining and Extraction	Motors	Process - Timers and Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Mining and Extraction	Process	Refrigeration - Floating Head Pressure	employee	New	0.00	15	\$44.84	20%	50%	\$0.00	0.00	0.00	RTF Workbook
Mining and Extraction	Process	Refrigeration - System Optimization	employee	New	0.00	15	\$15.68	20%	50%	\$0.00	0.00	0.00	AEG Research
Mining and Extraction	Motors	Pumping System - Equipment Upgrade	employee	New	5,854.23	10	\$846.90	9%	38%	\$0.05	3.34	0.00	7th Power Plan
Mining and Extraction	Motors	Pumping System - System Optimization	employee	New	4,335.55	12	\$1,290.67	9%	38%	\$0.04	3.26	0.00	UNIDO Study on Industrial Energy Efficiency
Mining and Extraction	Motors	Pumping System - Variable Speed Drive	employee	New	4,287.17	10	\$1,342.78	9%	38%	\$0.04	2.88	0.00	UNIDO Study on Industrial Energy Efficiency

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Mining and Extraction	Motors	Fan System - Equipment Upgrade	employee	New	897.05	10	\$88.72	9%	38%	\$0.04	0.60	0.00	UNIDO Study on Industrial Energy Efficiency
Mining and Extraction	Motors	Fan System - Flow Optimization	employee	New	1,058.71	10	\$146.80	9%	38%	\$0.02	0.71	0.00	UNIDO Study on Industrial Energy Efficiency
Mining and Extraction	Motors	Fan System - Variable Speed Drive	employee	New	1,568.93	10	\$738.67	9%	38%	\$0.06	1.06	0.00	UNIDO Study on Industrial Energy Efficiency
Mining and Extraction	Motors	Compressed Air - Equipment Upgrade	employee	New	4,345.14	10	\$316.18	17%	50%	\$0.04	2.88	0.00	7th Power Plan
Mining and Extraction	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	New	0.00	15	\$0.00	16%	38%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Mining and Extraction	Motors	Compressed Air - Refrigerated Cycling Dryers	employee	New	0.00	10	\$0.00	16%	30%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Mining and Extraction	Motors	Compressed Air - System Controls	employee	New	956.77	10	\$226.07	9%	38%	\$0.03	0.55	0.00	UNIDO Study on Industrial Energy Efficiency
Mining and Extraction	Motors	Compressed Air - Leak Management Program	employee	New	2,464.45	10	\$227.25	18%	75%	\$0.04	2.80	0.00	7th Power Plan
Mining and Extraction	Motors	Compressed Air - Variable Speed Drive	employee	New	1,771.29	15	\$1,385.99	26%	45%	\$0.08	0.82	0.00	UNIDO Study on Industrial Energy Efficiency
Mining and Extraction	Motors	Compressed Air - Low Pressure-Drop Filters	employee	New	59.05	10	\$21.36	17%	50%	\$0.05	0.04	0.02	Illinois TRM
Mining and Extraction	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	New	361.53	10	\$69.30	17%	50%	\$0.03	0.24	0.01	UNIDO Study on Industrial Energy Efficiency
Mining and Extraction	Motors	Compressed Air - Outside Air Intake	employee	New	0.00	20	\$0.00	17%	50%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Mining and Extraction	Motors	Compressed Air - Receiver Capacity Addition	employee	New	357.66	15	\$190.57	17%	50%	\$0.06	0.29	0.00	UNIDO Study on Industrial Energy Efficiency
Mining and Extraction	Motors	Material Handling - Variable Speed Drive	employee	New	1,550.79	10	\$555.10	25%	45%	\$0.05	0.73	0.00	7th Power Plan
Mining and Extraction	Motors	Motors - Green Rewind (<100 HP)	employee	New	141.42	10	\$60.98	10%	50%	\$0.06	0.67	0.00	7th Power Plan
Mining and Extraction	Motors	Motors - Green Rewind (100 HP+)	employee	New	79.42	10	\$21.64	6%	25%	\$0.04	0.18	0.00	7th Power Plan
Mining and Extraction	Motors	Switch from Belt Drive to Direct Drive	employee	New	1,208.98	12	\$267.66	16%	25%	\$0.03	1.51	0.00	2015-mdu-irp-report---volume-iii.pdf
Mining and Extraction	Motors	Motors - Synchronous Belts	employee	New	318.46	10	\$80.52	16%	36%	\$0.03	0.64	0.00	7th Power Plan
Mining and Extraction	Miscellaneous	Agriculture - Engine Block Timer	employee	New	531.11	3	\$6.55	0%	0%	\$0.00	0.00	0.00	Vermont TRM

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Mining and Extraction	Motors	Agriculture - Live Stock Waterer	employee	New	14,085.72	10	\$7,458.43	0%	0%	\$0.07	0.00	0.03	Ontario Power TRM
Mining and Extraction	Process	Dairy - Milk Precoolers	employee	New	0.00	15	\$201.92	0%	0%	\$0.00	0.00	0.12	Ontario Power TRM
Mining and Extraction	Process	Clean Room: Change Filter Strategy	employee	New	348.48	15	\$2.57	0%	0%	\$0.00	0.00	0.02	7th Power Plan
Mining and Extraction	Process	Clean Room: Chiller Optimize	employee	New	0.00	15	\$11.96	0%	0%	\$0.00	0.00	0.01	7th Power Plan
Mining and Extraction	Process	Clean Room: Clean Room HVAC	employee	New	0.00	15	\$14.43	0%	0%	\$0.00	0.00	0.01	7th Power Plan
Mining and Extraction	Process	Elec Chip Fab: Solidstate Chiller	employee	New	0.00	15	\$45.33	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Mining and Extraction	Process	Elec Chip Fab: Eliminate Exhaust	employee	New	43.56	15	\$9.25	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Mining and Extraction	Process	Elec Chip Fab: Exhaust Injector	employee	New	87.12	15	\$44.61	0%	0%	\$0.06	0.00	0.09	7th Power Plan
Mining and Extraction	Process	Elec Chip Fab: Reduce Gas Pressure	employee	New	87.12	15	\$0.89	0%	0%	\$0.00	0.00	0.01	7th Power Plan
Mining and Extraction	Motors	Panel: Hydraulic Press	employee	New	2,344.08	10	\$554.77	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Mining and Extraction	Motors	Wood: Replace Pneumatic Conveyor	employee	New	2,520.18	10	\$41.55	0%	0%	\$0.00	0.00	0.01	7th Power Plan
Mining and Extraction	Process	Metal: New Arc Furnace	employee	New	392.04	10	\$41.15	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Mining and Extraction	Process	Paper: Premium Control Large Material	employee	New	407.88	10	\$204.05	0%	0%	\$0.07	0.00	0.01	7th Power Plan
Mining and Extraction	Process	Paper: Efficient Pulp Screen	employee	New	326.70	10	\$67.21	0%	0%	\$0.03	0.00	0.09	7th Power Plan
Mining and Extraction	Process	Kraft: Effluent Treatment System	employee	New	326.70	10	\$27.56	0%	0%	\$0.01	0.00	0.05	7th Power Plan
Mining and Extraction	Motors	Kraft: Efficient Agitator	employee	New	4,281.37	10	\$413.99	0%	0%	\$0.01	0.00	0.05	7th Power Plan
Mining and Extraction	Process	Mech Pulp: Premium Process	employee	New	3.66	5	\$0.47	0%	0%	\$0.03	0.00	0.01	7th Power Plan
Mining and Extraction	Motors	Mech Pulp: Refiner Plate Improvement	employee	New	36.67	1	\$1.58	0%	0%	\$0.04	0.00	0.13	7th Power Plan
Mining and Extraction	Cooling	Transformer - High Efficiency	employee	New	54.51	10	\$180.69	15%	15%	\$0.02	0.00	1.17	7th Power Plan

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Mining and Extraction	Heating	Transformer - High Efficiency	employee	New	110.87	10	\$180.69	15%	15%	\$0.02	0.00	0.10	7th Power Plan
Mining and Extraction	Ventilation	Transformer - High Efficiency	employee	New	4.34	10	\$180.69	15%	15%	\$0.02	0.00	0.06	7th Power Plan
Mining and Extraction	Interior Lighting	Transformer - High Efficiency	employee	New	30.72	10	\$180.69	15%	15%	\$0.02	0.00	0.29	7th Power Plan
Mining and Extraction	Exterior Lighting	Transformer - High Efficiency	employee	New	6.79	10	\$180.69	15%	15%	\$0.02	0.00	0.05	7th Power Plan
Mining and Extraction	Motors	Transformer - High Efficiency	employee	New	1,173.81	10	\$180.69	15%	15%	\$0.02	0.00	0.47	7th Power Plan
Mining and Extraction	Process	Transformer - High Efficiency	employee	New	98.01	10	\$180.69	15%	15%	\$0.02	0.00	0.64	7th Power Plan
Mining and Extraction	Miscellaneous	Transformer - High Efficiency	employee	New	19.04	10	\$180.69	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Mining and Extraction	Cooling	Strategic Energy Management	employee	New	155.16	3	\$1,109.74	0%	0%	\$0.08	0.00	0.00	AEG Research
Mining and Extraction	Heating	Strategic Energy Management	employee	New	318.51	3	\$1,109.74	0%	0%	\$0.08	0.00	0.00	AEG Research
Mining and Extraction	Ventilation	Strategic Energy Management	employee	New	12.49	3	\$1,109.74	0%	0%	\$0.08	0.00	0.09	AEG Research
Mining and Extraction	Interior Lighting	Strategic Energy Management	employee	New	88.42	3	\$1,109.74	0%	0%	\$0.08	0.00	0.09	AEG Research
Mining and Extraction	Exterior Lighting	Strategic Energy Management	employee	New	19.62	3	\$1,109.74	0%	0%	\$0.08	0.00	0.12	AEG Research
Mining and Extraction	Motors	Strategic Energy Management	employee	New	3,391.00	3	\$1,109.74	0%	0%	\$0.08	0.00	0.16	AEG Research
Mining and Extraction	Process	Strategic Energy Management	employee	New	283.14	3	\$1,109.74	0%	0%	\$0.08	0.00	0.11	AEG Research
Mining and Extraction	Miscellaneous	Strategic Energy Management	employee	New	55.01	3	\$1,109.74	0%	0%	\$0.08	0.00	0.00	AEG Research
Mining and Extraction	Interior Lighting	Commissioning	employee	New	102.02	3	\$2,157.81	10%	40%	\$0.16	0.01	0.00	AEG Research
Mining and Extraction	Exterior Lighting	Commissioning	employee	New	22.64	3	\$2,157.81	10%	40%	\$0.16	0.00	0.00	AEG Research
Mining and Extraction	Motors	Commissioning	employee	New	3,912.70	3	\$2,157.81	10%	40%	\$0.16	0.28	0.07	AEG Research
Mining and Extraction	Process	Commissioning	employee	New	326.70	3	\$2,157.81	10%	40%	\$0.16	0.02	0.11	AEG Research

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Mining and Extraction	Miscellaneous	Commissioning	employee	New	63.47	3	\$2,157.81	10%	40%	\$0.16	0.01	0.28	AEG Research
Mining and Extraction	Interior Lighting	Retrocommissioning	employee	New	102.39	3	\$1,369.82	0%	0%	\$0.10	0.00	0.20	AEG Research
Mining and Extraction	Exterior Lighting	Retrocommissioning	employee	New	22.64	3	\$1,369.82	0%	0%	\$0.10	0.00	0.20	AEG Research
Mining and Extraction	Motors	Retrocommissioning	employee	New	3,912.70	3	\$1,369.82	0%	0%	\$0.10	0.00	0.07	AEG Research
Mining and Extraction	Process	Retrocommissioning	employee	New	326.70	3	\$1,369.82	0%	0%	\$0.10	0.00	0.09	AEG Research
Mining and Extraction	Miscellaneous	Retrocommissioning	employee	New	63.47	3	\$1,369.82	0%	0%	\$0.10	0.00	0.13	AEG Research
Mining and Extraction	Motors	Municipal Sewage Treatment	employee	New	764.24	12	\$425.75	0%	0%	\$0.07	0.00	0.59	7th Power Plan
Mining and Extraction	Motors	Municipal Water Supply Treatment	employee	New	0.00	12	\$0.00	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Food Mfg	Cooling	Insulation - Ceiling	sqft	Existing	0.12	45	\$1.28	15%	25%	\$0.14	2.37	50.45	Building Energy Simulation Tool
Food Mfg	Heating	Insulation - Ceiling	sqft	Existing	0.52	45	\$1.28	15%	25%	\$0.14	10.70	75.23	Building Energy Simulation Tool
Food Mfg	Ventilation	Insulation - Ceiling	sqft	Existing	0.02	45	\$1.28	15%	25%	\$0.14	1.57	35.14	Building Energy Simulation Tool
Food Mfg	Cooling	Insulation - Ducting	sqft	Existing	0.05	20	\$0.84	15%	25%	\$1.01	0.87	0.00	Building Energy Simulation Tool
Food Mfg	Heating	Insulation - Ducting	sqft	Existing	0.02	20	\$0.84	15%	25%	\$1.01	0.43	0.00	Building Energy Simulation Tool
Food Mfg	Ventilation	Insulation - Ducting	sqft	Existing	0.00	20	\$0.84	15%	25%	\$1.01	0.06	6.73	Building Energy Simulation Tool
Food Mfg	Cooling	Insulation - Wall Cavity	sqft	Existing	0.00	45	\$0.15	45%	50%	\$0.02	0.02	34.27	Building Energy Simulation Tool
Food Mfg	Heating	Insulation - Wall Cavity	sqft	Existing	0.76	45	\$0.15	45%	50%	\$0.02	8.10	8.32	Building Energy Simulation Tool
Food Mfg	Ventilation	Insulation - Wall Cavity	sqft	Existing	0.02	45	\$0.15	45%	50%	\$0.02	1.05	0.49	Building Energy Simulation Tool
Food Mfg	Cooling	HVAC - Duct Repair and Sealing	sqft	Existing	0.02	18	\$0.00	15%	25%	\$0.00	0.31	2.95	Building Energy Simulation Tool
Food Mfg	Heating	HVAC - Duct Repair and Sealing	sqft	Existing	0.05	18	\$0.00	15%	25%	\$0.00	1.14	0.00	Building Energy Simulation Tool

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Food Mfg	Ventilation	HVAC - Duct Repair and Sealing	sqft	Existing	0.00	18	\$0.00	15%	25%	\$0.00	0.15	2.93	Building Energy Simulation Tool
Food Mfg	Cooling	Chiller - Chilled Water Reset	sqft	Existing	0.04	10	\$0.01	15%	45%	\$0.03	0.96	61.46	AEG-BEST
Food Mfg	Cooling	Chiller - Chilled Water Variable-Flow System	sqft	Existing	0.24	15	\$0.50	15%	60%	\$0.21	7.62	12.38	AEG-BEST
Food Mfg	Cooling	Chiller - Variable Speed Fans	sqft	Existing	0.09	15	\$0.03	15%	75%	\$0.04	3.90	3.31	New Jersey TRM
Food Mfg	Cooling	HVAC - Economizer	sqft	Existing	0.89	10	\$0.25	18%	30%	\$0.04	4.25	25.02	AEG-BEST
Food Mfg	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.25	15%	35%	\$10.34	0.50	14.41	7th Power Plan
Food Mfg	Cooling	Destratification Fans (HVLS)	sqft	Existing	0.16	15	\$0.63	15%	50%	\$0.04	11.05	59.75	AEG Research
Food Mfg	Heating	Destratification Fans (HVLS)	sqft	Existing	1.38	15	\$0.63	15%	50%	\$0.04	105.70	2.10	AEG Research
Food Mfg	Cooling	RTU - Maintenance	sqft	Existing	0.08	3	\$0.07	15%	75%	\$0.26	7.98	1.98	AEG Research
Food Mfg	Cooling	Thermostat - WiFi/Interactive	sqft	Existing	0.29	5	\$0.66	5%	15%	\$0.09	5.48	0.00	7th Power Plan
Food Mfg	Heating	Thermostat - WiFi/Interactive	sqft	Existing	1.21	5	\$0.66	5%	15%	\$0.09	24.99	0.00	7th Power Plan
Food Mfg	Ventilation	Thermostat - WiFi/Interactive	sqft	Existing	0.04	5	\$0.66	5%	15%	\$0.09	3.68	0.00	7th Power Plan
Food Mfg	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.41	15	\$0.35	7%	33%	\$0.07	39.91	0.00	7th Power Plan
Food Mfg	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.55	15	\$0.58	7%	33%	\$0.08	52.98	0.00	7th Power Plan
Food Mfg	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	Existing	0.02	15	\$0.00	1%	2%	\$0.01	0.20	0.00	7th Power Plan
Food Mfg	Interior Lighting	Interior Lighting - Timers and Clocks	sqft	Existing	0.00	8	\$0.00	7%	7%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Food Mfg	Interior Lighting	Interior Lighting - Skylights	sqft	Existing	0.00	15	\$1.01	15%	23%	\$0.00	0.00	0.00	AEG Research
Food Mfg	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	sqft	Existing	0.03	16	\$1.81	5%	40%	\$3.95	5.94	0.00	7th Power Plan
Food Mfg	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	Existing	0.04	11	\$0.00	15%	50%	\$0.01	6.75	0.00	Illinois TRM
Food Mfg	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	sqft	Existing	0.05	8	\$0.03	15%	25%	\$0.08	8.13	0.00	7th Power Plan

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Food Mfg	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	Existing	0.03	8	\$0.02	33%	60%	\$0.08	11.29	0.00	Pacific Gas and Electric Research
Food Mfg	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	Existing	0.03	7	\$1.19	15%	30%	\$4.38	7.03	0.00	AEG Research
Food Mfg	Process	Process - Conductivity Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Food Mfg	Process	Process - Timers and Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Food Mfg	Motors	Process - Timers and Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Food Mfg	Process	Refrigeration - Floating Head Pressure	employee	Existing	929.02	15	\$912.84	20%	50%	\$0.11	62.50	0.00	RTF Workbook
Food Mfg	Process	Refrigeration - System Optimization	employee	Existing	1,503.95	15	\$642.81	20%	50%	\$0.05	101.46	0.00	AEG Research
Food Mfg	Motors	Pumping System - Equipment Upgrade	employee	Existing	1,295.53	10	\$190.16	9%	38%	\$0.05	82.93	0.00	7th Power Plan
Food Mfg	Motors	Pumping System - System Optimization	employee	Existing	958.42	12	\$289.80	9%	38%	\$0.04	59.50	0.00	UNIDO Study on Industrial Energy Efficiency
Food Mfg	Motors	Pumping System - Variable Speed Drive	employee	Existing	947.20	10	\$301.50	9%	38%	\$0.04	58.58	0.00	UNIDO Study on Industrial Energy Efficiency
Food Mfg	Motors	Fan System - Equipment Upgrade	employee	Existing	1,200.31	10	\$119.24	9%	38%	\$0.04	75.19	0.00	UNIDO Study on Industrial Energy Efficiency
Food Mfg	Motors	Fan System - Flow Optimization	employee	Existing	1,410.05	10	\$197.29	9%	38%	\$0.02	88.14	0.00	UNIDO Study on Industrial Energy Efficiency
Food Mfg	Motors	Fan System - Variable Speed Drive	employee	Existing	2,051.00	10	\$992.74	9%	38%	\$0.06	125.73	0.00	UNIDO Study on Industrial Energy Efficiency
Food Mfg	Motors	Compressed Air - Equipment Upgrade	employee	Existing	1,497.30	10	\$108.95	17%	50%	\$0.04	112.90	0.33	7th Power Plan
Food Mfg	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	Existing	0.00	15	\$0.00	16%	38%	\$0.00	0.00	0.68	Michigan Energy Measures Database
Food Mfg	Motors	Compressed Air - Refrigerated Cycling Dryers	employee	Existing	0.00	10	\$0.00	16%	30%	\$0.00	0.00	0.21	Michigan Energy Measures Database
Food Mfg	Motors	Compressed Air - System Controls	employee	Existing	325.27	10	\$77.90	9%	38%	\$0.03	20.69	0.77	UNIDO Study on Industrial Energy Efficiency
Food Mfg	Motors	Compressed Air - Leak Management Program	employee	Existing	847.34	10	\$78.31	18%	75%	\$0.04	109.27	0.17	7th Power Plan
Food Mfg	Motors	Compressed Air - Variable Speed Drive	employee	Existing	594.63	15	\$477.60	26%	45%	\$0.08	24.99	6.81	UNIDO Study on Industrial Energy Efficiency

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Food Mfg	Motors	Compressed Air - Low Pressure-Drop Filters	employee	Existing	19.82	10	\$7.36	17%	50%	\$0.05	1.46	5.38	Illinois TRM
Food Mfg	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	Existing	122.67	10	\$23.88	17%	50%	\$0.03	9.12	1.13	UNIDO Study on Industrial Energy Efficiency
Food Mfg	Motors	Compressed Air - Outside Air Intake	employee	Existing	0.00	20	\$0.00	17%	50%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Food Mfg	Motors	Compressed Air - Receiver Capacity Addition	employee	Existing	121.33	15	\$65.67	17%	50%	\$0.06	8.99	0.00	UNIDO Study on Industrial Energy Efficiency
Food Mfg	Motors	Material Handling - Variable Speed Drive	employee	Existing	3,691.19	10	\$1,340.39	25%	45%	\$0.05	159.91	0.00	7th Power Plan
Food Mfg	Motors	Motors - Green Rewind (<100 HP)	employee	Existing	75.25	10	\$33.32	10%	50%	\$0.06	32.41	0.00	7th Power Plan
Food Mfg	Motors	Motors - Green Rewind (100 HP+)	employee	Existing	42.72	10	\$11.83	6%	25%	\$0.04	8.81	0.00	7th Power Plan
Food Mfg	Motors	Switch from Belt Drive to Direct Drive	employee	Existing	651.96	12	\$146.25	16%	25%	\$0.03	67.61	6.11	2015-mdu-irp-report---volume-iii.pdf
Food Mfg	Motors	Motors - Synchronous Belts	employee	Existing	171.60	10	\$44.00	16%	36%	\$0.03	38.19	1.33	7th Power Plan
Food Mfg	Miscellaneous	Agriculture - Engine Block Timer	employee	Existing	3,002.04	3	\$37.03	0%	0%	\$0.00	0.00	53.84	Vermont TRM
Food Mfg	Motors	Agriculture - Live Stock Waterer	employee	Existing	3,050.97	10	\$1,674.69	0%	0%	\$0.07	0.00	42.54	Ontario Power TRM
Food Mfg	Process	Dairy - Milk Precoolers	employee	Existing	6,193.49	15	\$2,904.75	0%	0%	\$0.05	0.00	8.97	Ontario Power TRM
Food Mfg	Process	Clean Room: Change Filter Strategy	employee	Existing	95.96	15	\$0.71	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Food Mfg	Process	Clean Room: Chiller Optimize	employee	Existing	1,857.73	15	\$172.00	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Food Mfg	Process	Clean Room: Clean Room HVAC	employee	Existing	1,127.96	15	\$207.63	0%	0%	\$0.02	0.00	0.17	7th Power Plan
Food Mfg	Process	Elec Chip Fab: Solidstate Chiller	employee	Existing	1,114.83	15	\$652.15	0%	0%	\$0.06	0.00	0.83	7th Power Plan
Food Mfg	Process	Elec Chip Fab: Eliminate Exhaust	employee	Existing	12.00	15	\$2.55	0%	0%	\$0.02	0.00	0.11	7th Power Plan
Food Mfg	Process	Elec Chip Fab: Exhaust Injector	employee	Existing	23.71	15	\$12.28	0%	0%	\$0.06	0.00	0.07	7th Power Plan
Food Mfg	Process	Elec Chip Fab: Reduce Gas Pressure	employee	Existing	23.99	15	\$0.25	0%	0%	\$0.00	0.00	0.03	7th Power Plan
Food Mfg	Motors	Panel: Hydraulic Press	employee	Existing	5,573.69	10	\$1,339.58	0%	0%	\$0.03	0.00	0.00	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Food Mfg	Motors	Wood: Replace Pneumatic Conveyor	employee	Existing	6,085.37	10	\$100.32	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Food Mfg	Process	Metal: New Arc Furnace	employee	Existing	3,351.59	10	\$351.82	0%	0%	\$0.01	0.00	0.57	7th Power Plan
Food Mfg	Process	Paper: Premium Control Large Material	employee	Existing	1,237.93	10	\$631.17	0%	0%	\$0.07	0.00	0.07	7th Power Plan
Food Mfg	Process	Paper: Efficient Pulp Screen	employee	Existing	1,010.56	10	\$207.91	0%	0%	\$0.03	0.00	0.02	7th Power Plan
Food Mfg	Process	Kraft: Effluent Treatment System	employee	Existing	1,010.56	10	\$85.24	0%	0%	\$0.01	0.00	0.08	7th Power Plan
Food Mfg	Motors	Kraft: Efficient Agitator	employee	Existing	10,292.69	10	\$999.64	0%	0%	\$0.01	0.00	0.01	7th Power Plan
Food Mfg	Process	Mech Pulp: Premium Process	employee	Existing	11.18	5	\$1.46	0%	0%	\$0.03	0.00	0.03	7th Power Plan
Food Mfg	Motors	Mech Pulp: Refiner Plate Improvement	employee	Existing	85.42	1	\$3.81	0%	0%	\$0.04	0.00	0.30	7th Power Plan
Food Mfg	Cooling	Transformer - High Efficiency	employee	Existing	163.46	10	\$216.42	15%	15%	\$0.02	0.00	0.15	7th Power Plan
Food Mfg	Heating	Transformer - High Efficiency	employee	Existing	309.29	10	\$216.42	15%	15%	\$0.02	0.00	0.14	7th Power Plan
Food Mfg	Ventilation	Transformer - High Efficiency	employee	Existing	16.97	10	\$216.42	15%	15%	\$0.02	0.00	0.02	7th Power Plan
Food Mfg	Interior Lighting	Transformer - High Efficiency	employee	Existing	61.77	10	\$216.42	15%	15%	\$0.02	0.00	0.41	7th Power Plan
Food Mfg	Exterior Lighting	Transformer - High Efficiency	employee	Existing	13.36	10	\$216.42	15%	15%	\$0.02	0.00	3.85	7th Power Plan
Food Mfg	Motors	Transformer - High Efficiency	employee	Existing	618.69	10	\$216.42	15%	15%	\$0.02	0.00	0.07	7th Power Plan
Food Mfg	Process	Transformer - High Efficiency	employee	Existing	495.77	10	\$216.42	15%	15%	\$0.02	0.00	0.05	7th Power Plan
Food Mfg	Miscellaneous	Transformer - High Efficiency	employee	Existing	113.62	10	\$216.42	15%	15%	\$0.02	0.00	0.24	7th Power Plan
Food Mfg	Cooling	Strategic Energy Management	employee	Existing	453.40	3	\$1,329.18	0%	18%	\$0.08	3.02	0.04	AEG Research
Food Mfg	Heating	Strategic Energy Management	employee	Existing	878.03	3	\$1,329.18	0%	18%	\$0.08	6.34	4.33	AEG Research
Food Mfg	Ventilation	Strategic Energy Management	employee	Existing	48.60	3	\$1,329.18	0%	18%	\$0.08	1.76	5.91	AEG Research
Food Mfg	Interior Lighting	Strategic Energy Management	employee	Existing	176.09	3	\$1,329.18	0%	18%	\$0.08	5.21	0.01	AEG Research

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Food Mfg	Exterior Lighting	Strategic Energy Management	employee	Existing	38.34	3	\$1,329.18	0%	18%	\$0.08	1.16	0.00	AEG Research
Food Mfg	Motors	Strategic Energy Management	employee	Existing	1,773.50	3	\$1,329.18	0%	18%	\$0.08	64.39	0.00	AEG Research
Food Mfg	Process	Strategic Energy Management	employee	Existing	1,420.90	3	\$1,329.18	0%	18%	\$0.08	52.95	0.35	AEG Research
Food Mfg	Miscellaneous	Strategic Energy Management	employee	Existing	325.39	3	\$1,329.18	0%	18%	\$0.08	15.44	0.31	AEG Research
Food Mfg	Interior Lighting	Commissioning	employee	Existing	202.39	3	\$1,986.34	0%	0%	\$0.14	0.00	0.30	AEG Research
Food Mfg	Exterior Lighting	Commissioning	employee	Existing	44.07	3	\$1,986.34	0%	0%	\$0.14	0.00	0.26	AEG Research
Food Mfg	Motors	Commissioning	employee	Existing	2,037.23	3	\$1,986.34	0%	0%	\$0.14	0.00	0.26	AEG Research
Food Mfg	Process	Commissioning	employee	Existing	1,632.03	3	\$1,986.34	0%	0%	\$0.14	0.00	0.00	AEG Research
Food Mfg	Miscellaneous	Commissioning	employee	Existing	373.57	3	\$1,986.34	0%	0%	\$0.14	0.00	0.00	AEG Research
Food Mfg	Interior Lighting	Retrocommissioning	employee	Existing	205.91	3	\$1,260.97	10%	37%	\$0.09	9.22	0.00	AEG Research
Food Mfg	Exterior Lighting	Retrocommissioning	employee	Existing	44.54	3	\$1,260.97	10%	37%	\$0.09	2.04	2.77	AEG Research
Food Mfg	Motors	Retrocommissioning	employee	Existing	2,062.31	3	\$1,260.97	10%	37%	\$0.09	112.98	4.46	AEG Research
Food Mfg	Process	Retrocommissioning	employee	Existing	1,652.57	3	\$1,260.97	10%	37%	\$0.09	92.92	1.22	AEG Research
Food Mfg	Miscellaneous	Retrocommissioning	employee	Existing	378.74	3	\$1,260.97	10%	37%	\$0.09	27.09	1.37	AEG Research
Food Mfg	Motors	Municipal Sewage Treatment	employee	Existing	167.12	12	\$95.60	0%	0%	\$0.07	0.00	1.24	7th Power Plan
Food Mfg	Motors	Municipal Water Supply Treatment	employee	Existing	0.00	12	\$0.00	0%	0%	\$0.00	0.00	5.78	7th Power Plan
Food Mfg	Cooling	Insulation - Ceiling	sqft	New	0.11	45	\$1.28	15%	25%	\$0.15	0.47	6.80	Building Energy Simulation Tool
Food Mfg	Heating	Insulation - Ceiling	sqft	New	0.51	45	\$1.28	15%	25%	\$0.15	2.28	10.24	Building Energy Simulation Tool
Food Mfg	Ventilation	Insulation - Ceiling	sqft	New	0.01	45	\$1.28	15%	25%	\$0.15	0.27	3.35	Building Energy Simulation Tool
Food Mfg	Cooling	Insulation - Ducting	sqft	New	0.04	20	\$0.84	15%	25%	\$1.09	0.18	0.00	Building Energy Simulation Tool
Food Mfg	Heating	Insulation - Ducting	sqft	New	0.02	20	\$0.84	15%	25%	\$1.09	0.10	0.00	Building Energy Simulation Tool
Food Mfg	Ventilation	Insulation - Ducting	sqft	New	0.00	20	\$0.84	15%	25%	\$1.09	0.01	0.65	Building Energy Simulation Tool

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Food Mfg	Cooling	Insulation - Wall Cavity	sqft	New	0.00	45	\$0.15	45%	50%	\$0.02	0.00	3.27	Building Energy Simulation Tool
Food Mfg	Heating	Insulation - Wall Cavity	sqft	New	0.71	45	\$0.15	45%	50%	\$0.02	1.57	1.02	Building Energy Simulation Tool
Food Mfg	Ventilation	Insulation - Wall Cavity	sqft	New	0.01	45	\$0.15	45%	50%	\$0.02	0.18	0.05	Building Energy Simulation Tool
Food Mfg	Cooling	HVAC - Duct Repair and Sealing	sqft	New	0.01	18	\$0.00	15%	25%	\$0.00	0.06	0.28	Building Energy Simulation Tool
Food Mfg	Heating	HVAC - Duct Repair and Sealing	sqft	New	0.05	18	\$0.00	15%	25%	\$0.00	0.21	0.00	Building Energy Simulation Tool
Food Mfg	Ventilation	HVAC - Duct Repair and Sealing	sqft	New	0.00	18	\$0.00	15%	25%	\$0.00	0.02	0.36	Building Energy Simulation Tool
Food Mfg	Cooling	Chiller - Chilled Water Reset	sqft	New	0.03	10	\$0.01	15%	45%	\$0.03	0.08	8.33	AEG-BEST
Food Mfg	Cooling	Chiller - Chilled Water Variable-Flow System	sqft	New	0.19	15	\$0.50	15%	60%	\$0.25	0.80	1.68	AEG-BEST
Food Mfg	Cooling	Chiller - Variable Speed Fans	sqft	New	0.07	15	\$0.03	15%	75%	\$0.04	0.40	0.45	New Jersey TRM
Food Mfg	Cooling	HVAC - Economizer	sqft	New	0.77	10	\$0.25	18%	30%	\$0.04	0.36	3.72	AEG-BEST
Food Mfg	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.25	15%	35%	\$12.01	0.05	1.38	7th Power Plan
Food Mfg	Cooling	Destratification Fans (HVLS)	sqft	New	0.14	15	\$0.63	15%	50%	\$0.05	1.10	1.67	AEG Research
Food Mfg	Heating	Destratification Fans (HVLS)	sqft	New	1.30	15	\$0.63	15%	50%	\$0.05	10.49	0.29	AEG Research
Food Mfg	Cooling	RTU - Maintenance	sqft	New	0.08	3	\$0.07	15%	75%	\$0.27	0.19	0.31	AEG Research
Food Mfg	Cooling	Thermostat - WiFi/Interactive	sqft	New	0.26	5	\$0.66	5%	15%	\$0.09	0.14	0.00	7th Power Plan
Food Mfg	Heating	Thermostat - WiFi/Interactive	sqft	New	1.21	5	\$0.66	5%	15%	\$0.09	0.67	0.00	7th Power Plan
Food Mfg	Ventilation	Thermostat - WiFi/Interactive	sqft	New	0.02	5	\$0.66	5%	15%	\$0.09	0.08	0.00	7th Power Plan
Food Mfg	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.31	15	\$0.35	22%	41%	\$0.07	10.00	0.00	7th Power Plan
Food Mfg	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.43	15	\$0.58	22%	41%	\$0.08	13.58	0.00	7th Power Plan
Food Mfg	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	New	0.02	15	\$0.00	1%	2%	\$0.01	0.02	0.00	7th Power Plan
Food Mfg	Interior Lighting	Interior Lighting - Timeclocks and Timers	sqft	New	0.00	8	\$0.00	7%	7%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx

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Food Mfg	Interior Lighting	Interior Lighting - Skylights	sqft	New	0.00	15	\$1.01	18%	24%	\$0.00	0.00	0.00	AEG Research
Food Mfg	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	sqft	New	0.03	16	\$1.81	5%	40%	\$3.94	0.75	0.00	7th Power Plan
Food Mfg	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	New	0.03	11	\$0.00	15%	50%	\$0.01	0.65	0.00	Illinois TRM
Food Mfg	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	sqft	New	0.04	8	\$0.03	15%	25%	\$0.08	0.60	0.00	7th Power Plan
Food Mfg	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	New	0.02	8	\$0.02	44%	60%	\$0.08	0.51	0.00	Pacific Gas and Electric Research
Food Mfg	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	New	0.02	7	\$1.19	15%	30%	\$4.41	0.52	0.00	AEG Research
Food Mfg	Process	Process - Conductivity Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Food Mfg	Process	Process - Timers and Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Food Mfg	Motors	Process - Timers and Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Food Mfg	Process	Refrigeration - Floating Head Pressure	employee	New	935.27	15	\$645.13	20%	50%	\$0.07	7.60	0.00	RTF Workbook
Food Mfg	Process	Refrigeration - System Optimization	employee	New	1,503.95	15	\$225.59	20%	50%	\$0.02	12.21	0.00	AEG Research
Food Mfg	Motors	Pumping System - Equipment Upgrade	employee	New	1,319.48	10	\$190.16	9%	38%	\$0.05	8.06	0.00	7th Power Plan
Food Mfg	Motors	Pumping System - System Optimization	employee	New	983.65	12	\$289.80	9%	38%	\$0.04	9.08	0.00	UNIDO Study on Industrial Energy Efficiency
Food Mfg	Motors	Pumping System - Variable Speed Drive	employee	New	978.44	10	\$301.50	9%	38%	\$0.04	8.23	0.00	UNIDO Study on Industrial Energy Efficiency
Food Mfg	Motors	Fan System - Equipment Upgrade	employee	New	1,214.36	10	\$119.24	9%	38%	\$0.04	10.18	0.00	UNIDO Study on Industrial Energy Efficiency
Food Mfg	Motors	Fan System - Flow Optimization	employee	New	1,430.94	10	\$197.29	9%	38%	\$0.02	12.00	0.00	UNIDO Study on Industrial Energy Efficiency
Food Mfg	Motors	Fan System - Variable Speed Drive	employee	New	2,144.37	10	\$992.74	9%	38%	\$0.06	18.07	0.00	UNIDO Study on Industrial Energy Efficiency
Food Mfg	Motors	Compressed Air - Equipment Upgrade	employee	New	1,497.30	10	\$108.95	17%	50%	\$0.04	10.64	0.00	7th Power Plan

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Food Mfg	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	New	0.00	15	\$0.00	16%	38%	\$0.00	0.00	0.01	Michigan Energy Measures Database
Food Mfg	Motors	Compressed Air - Refrigerated Cycling Dryers	employee	New	0.00	10	\$0.00	16%	30%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Food Mfg	Motors	Compressed Air - System Controls	employee	New	334.63	10	\$77.90	9%	38%	\$0.03	2.05	0.01	UNIDO Study on Industrial Energy Efficiency
Food Mfg	Motors	Compressed Air - Leak Management Program	employee	New	852.35	10	\$78.31	18%	75%	\$0.04	10.39	0.00	7th Power Plan
Food Mfg	Motors	Compressed Air - Variable Speed Drive	employee	New	620.02	15	\$477.60	26%	45%	\$0.08	3.24	0.08	UNIDO Study on Industrial Energy Efficiency
Food Mfg	Motors	Compressed Air - Low Pressure-Drop Filters	employee	New	20.67	10	\$7.36	17%	50%	\$0.05	0.15	0.06	Illinois TRM
Food Mfg	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	New	125.84	10	\$23.88	17%	50%	\$0.03	0.90	0.01	UNIDO Study on Industrial Energy Efficiency
Food Mfg	Motors	Compressed Air - Outside Air Intake	employee	New	0.00	20	\$0.00	17%	50%	\$0.00	0.00	0.07	Michigan Energy Measures Database
Food Mfg	Motors	Compressed Air - Receiver Capacity Addition	employee	New	125.18	15	\$65.67	17%	50%	\$0.06	1.14	0.02	UNIDO Study on Industrial Energy Efficiency
Food Mfg	Motors	Material Handling - Variable Speed Drive	employee	New	3,822.35	10	\$1,340.39	25%	45%	\$0.05	22.57	0.63	7th Power Plan
Food Mfg	Motors	Motors - Green Rewind (<100 HP)	employee	New	78.57	10	\$33.32	10%	50%	\$0.06	4.65	0.48	7th Power Plan
Food Mfg	Motors	Motors - Green Rewind (100 HP+)	employee	New	44.12	10	\$11.83	6%	25%	\$0.04	1.24	0.08	7th Power Plan
Food Mfg	Motors	Switch from Belt Drive to Direct Drive	employee	New	666.99	12	\$146.25	16%	25%	\$0.03	10.26	0.00	2015-mdu-irp-report---volume-iii.pdf
Food Mfg	Motors	Motors - Synchronous Belts	employee	New	176.74	10	\$44.00	16%	36%	\$0.03	3.79	0.00	7th Power Plan
Food Mfg	Miscellaneous	Agriculture - Engine Block Timer	employee	New	3,002.04	3	\$37.03	0%	0%	\$0.00	0.00	0.00	Vermont TRM
Food Mfg	Motors	Agriculture - Live Stock Waterer	employee	New	3,207.24	10	\$1,674.69	0%	0%	\$0.07	0.00	0.00	Ontario Power TRM
Food Mfg	Process	Dairy - Milk Precoolers	employee	New	6,235.12	15	\$2,904.75	0%	0%	\$0.05	0.00	0.00	Ontario Power TRM
Food Mfg	Process	Clean Room: Change Filter Strategy	employee	New	95.96	15	\$0.71	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Food Mfg	Process	Clean Room: Chiller Optimize	employee	New	1,857.73	15	\$172.00	0%	0%	\$0.01	0.00	0.00	7th Power Plan

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Food Mfg	Process	Clean Room: Clean Room HVAC	employee	New	1,122.32	15	\$207.63	0%	0%	\$0.02	0.00	0.05	7th Power Plan
Food Mfg	Process	Elec Chip Fab: Solidstate Chiller	employee	New	1,122.32	15	\$652.15	0%	0%	\$0.06	0.00	0.23	7th Power Plan
Food Mfg	Process	Elec Chip Fab: Eliminate Exhaust	employee	New	11.94	15	\$2.55	0%	0%	\$0.02	0.00	0.04	7th Power Plan
Food Mfg	Process	Elec Chip Fab: Exhaust Injector	employee	New	23.87	15	\$12.28	0%	0%	\$0.06	0.00	0.02	7th Power Plan
Food Mfg	Process	Elec Chip Fab: Reduce Gas Pressure	employee	New	23.99	15	\$0.25	0%	0%	\$0.00	0.00	0.01	7th Power Plan
Food Mfg	Motors	Panel: Hydraulic Press	employee	New	5,744.96	10	\$1,339.58	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Food Mfg	Motors	Wood: Replace Pneumatic Conveyor	employee	New	6,085.37	10	\$100.32	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Food Mfg	Process	Metal: New Arc Furnace	employee	New	3,334.83	10	\$351.82	0%	0%	\$0.01	0.00	0.17	7th Power Plan
Food Mfg	Process	Paper: Premium Control Large Material	employee	New	1,251.45	10	\$631.17	0%	0%	\$0.07	0.00	0.03	7th Power Plan
Food Mfg	Process	Paper: Efficient Pulp Screen	employee	New	1,005.51	10	\$207.91	0%	0%	\$0.03	0.00	0.01	7th Power Plan
Food Mfg	Process	Kraft: Effluent Treatment System	employee	New	1,005.51	10	\$85.24	0%	0%	\$0.01	0.00	0.02	7th Power Plan
Food Mfg	Motors	Kraft: Efficient Agitator	employee	New	10,413.18	10	\$999.64	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Food Mfg	Process	Mech Pulp: Premium Process	employee	New	11.22	5	\$1.46	0%	0%	\$0.03	0.00	0.02	7th Power Plan
Food Mfg	Motors	Mech Pulp: Refiner Plate Improvement	employee	New	89.80	1	\$3.81	0%	0%	\$0.04	0.00	0.17	7th Power Plan
Food Mfg	Cooling	Transformer - High Efficiency	employee	New	146.04	10	\$212.51	15%	15%	\$0.02	0.00	0.09	7th Power Plan
Food Mfg	Heating	Transformer - High Efficiency	employee	New	308.56	10	\$212.51	15%	15%	\$0.02	0.00	0.09	7th Power Plan
Food Mfg	Ventilation	Transformer - High Efficiency	employee	New	9.71	10	\$212.51	15%	15%	\$0.02	0.00	0.01	7th Power Plan
Food Mfg	Interior Lighting	Transformer - High Efficiency	employee	New	47.01	10	\$212.51	15%	15%	\$0.02	0.00	0.25	7th Power Plan
Food Mfg	Exterior Lighting	Transformer - High Efficiency	employee	New	9.92	10	\$212.51	15%	15%	\$0.02	0.00	2.19	7th Power Plan
Food Mfg	Motors	Transformer - High Efficiency	employee	New	650.38	10	\$212.51	15%	15%	\$0.02	0.00	0.19	7th Power Plan
Food Mfg	Process	Transformer - High Efficiency	employee	New	501.18	10	\$212.51	15%	15%	\$0.02	0.00	0.12	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Food Mfg	Miscellaneous	Transformer - High Efficiency	employee	New	107.62	10	\$212.51	15%	15%	\$0.02	0.00	0.54	7th Power Plan
Food Mfg	Cooling	Strategic Energy Management	employee	New	417.00	3	\$1,305.16	0%	18%	\$0.08	0.03	0.09	AEG Research
Food Mfg	Heating	Strategic Energy Management	employee	New	886.76	3	\$1,305.16	0%	18%	\$0.08	0.07	1.57	AEG Research
Food Mfg	Ventilation	Strategic Energy Management	employee	New	27.98	3	\$1,305.16	0%	18%	\$0.08	0.02	2.15	AEG Research
Food Mfg	Interior Lighting	Strategic Energy Management	employee	New	135.39	3	\$1,305.16	0%	18%	\$0.08	0.06	0.01	AEG Research
Food Mfg	Exterior Lighting	Strategic Energy Management	employee	New	28.65	3	\$1,305.16	0%	18%	\$0.08	0.01	0.00	AEG Research
Food Mfg	Motors	Strategic Energy Management	employee	New	1,878.89	3	\$1,305.16	0%	18%	\$0.08	0.78	0.00	AEG Research
Food Mfg	Process	Strategic Energy Management	employee	New	1,447.86	3	\$1,305.16	0%	18%	\$0.08	0.60	0.30	AEG Research
Food Mfg	Miscellaneous	Strategic Energy Management	employee	New	310.91	3	\$1,305.16	0%	18%	\$0.08	0.16	0.30	AEG Research
Food Mfg	Interior Lighting	Commissioning	employee	New	156.09	3	\$1,995.51	10%	37%	\$0.15	0.10	0.39	AEG Research
Food Mfg	Exterior Lighting	Commissioning	employee	New	33.03	3	\$1,995.51	10%	37%	\$0.15	0.02	0.55	AEG Research
Food Mfg	Motors	Commissioning	employee	New	2,166.19	3	\$1,995.51	10%	37%	\$0.15	1.36	0.37	AEG Research
Food Mfg	Process	Commissioning	employee	New	1,669.26	3	\$1,995.51	10%	37%	\$0.15	1.04	0.00	AEG Research
Food Mfg	Miscellaneous	Commissioning	employee	New	358.46	3	\$1,995.51	10%	37%	\$0.15	0.28	0.00	AEG Research
Food Mfg	Interior Lighting	Retrocommissioning	employee	New	156.69	3	\$1,266.79	0%	0%	\$0.09	0.00	0.00	AEG Research
Food Mfg	Exterior Lighting	Retrocommissioning	employee	New	33.05	3	\$1,266.79	0%	0%	\$0.09	0.00	0.00	AEG Research
Food Mfg	Motors	Retrocommissioning	employee	New	2,167.95	3	\$1,266.79	0%	0%	\$0.09	0.00	0.00	AEG Research
Food Mfg	Process	Retrocommissioning	employee	New	1,670.61	3	\$1,266.79	0%	0%	\$0.09	0.00	21.35	AEG Research
Food Mfg	Miscellaneous	Retrocommissioning	employee	New	358.75	3	\$1,266.79	0%	0%	\$0.09	0.00	15.26	AEG Research
Food Mfg	Motors	Municipal Sewage Treatment	employee	New	174.48	12	\$95.60	0%	0%	\$0.07	0.00	15.06	7th Power Plan
Food Mfg	Motors	Municipal Water Supply Treatment	employee	New	0.00	12	\$0.00	0%	0%	\$0.00	0.00	3.17	7th Power Plan
Paper Mfg	Cooling	Insulation - Ceiling	sqft	Existing	0.13	45	\$1.28	15%	25%	\$0.14	0.00	0.24	Building Energy Simulation Tool

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Paper Mfg	Heating	Insulation - Ceiling	sqft	Existing	0.52	45	\$1.28	15%	25%	\$0.14	0.00	0.07	Building Energy Simulation Tool
Paper Mfg	Ventilation	Insulation - Ceiling	sqft	Existing	0.02	45	\$1.28	15%	25%	\$0.14	0.00	0.00	Building Energy Simulation Tool
Paper Mfg	Cooling	Insulation - Ducting	sqft	Existing	0.05	20	\$0.84	15%	25%	\$1.01	0.00	0.02	Building Energy Simulation Tool
Paper Mfg	Heating	Insulation - Ducting	sqft	Existing	0.02	20	\$0.84	15%	25%	\$1.01	0.00	0.00	Building Energy Simulation Tool
Paper Mfg	Ventilation	Insulation - Ducting	sqft	Existing	0.00	20	\$0.84	15%	25%	\$1.01	0.00	0.03	Building Energy Simulation Tool
Paper Mfg	Cooling	Insulation - Wall Cavity	sqft	Existing	0.00	45	\$0.15	45%	50%	\$0.02	0.00	0.41	Building Energy Simulation Tool
Paper Mfg	Heating	Insulation - Wall Cavity	sqft	Existing	0.76	45	\$0.15	45%	50%	\$0.02	0.00	0.64	Building Energy Simulation Tool
Paper Mfg	Ventilation	Insulation - Wall Cavity	sqft	Existing	0.02	45	\$0.15	45%	50%	\$0.02	0.00	0.17	Building Energy Simulation Tool
Paper Mfg	Cooling	HVAC - Duct Repair and Sealing	sqft	Existing	0.02	18	\$0.00	15%	25%	\$0.00	0.00	1.44	Building Energy Simulation Tool
Paper Mfg	Heating	HVAC - Duct Repair and Sealing	sqft	Existing	0.05	18	\$0.00	15%	25%	\$0.00	0.00	0.61	Building Energy Simulation Tool
Paper Mfg	Ventilation	HVAC - Duct Repair and Sealing	sqft	Existing	0.00	18	\$0.00	15%	25%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Paper Mfg	Cooling	Chiller - Chilled Water Reset	sqft	Existing	0.04	10	\$0.01	15%	45%	\$0.03	0.00	0.00	AEG-BEST
Paper Mfg	Cooling	Chiller - Chilled Water Variable-Flow System	sqft	Existing	0.24	15	\$0.50	15%	60%	\$0.21	0.00	0.00	AEG-BEST
Paper Mfg	Cooling	Chiller - Variable Speed Fans	sqft	Existing	0.09	15	\$0.03	15%	75%	\$0.04	0.00	0.00	New Jersey TRM
Paper Mfg	Cooling	HVAC - Economizer	sqft	Existing	0.00	10	\$0.25	18%	30%	\$67.50	0.00	0.00	AEG-BEST
Paper Mfg	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.25	15%	35%	\$10.33	0.00	0.00	7th Power Plan
Paper Mfg	Cooling	Destratification Fans (HVLS)	sqft	Existing	0.16	15	\$0.63	15%	50%	\$0.04	0.00	0.00	AEG Research
Paper Mfg	Heating	Destratification Fans (HVLS)	sqft	Existing	1.38	15	\$0.63	15%	50%	\$0.04	0.01	0.00	AEG Research
Paper Mfg	Cooling	RTU - Maintenance	sqft	Existing	0.08	3	\$0.07	15%	75%	\$0.26	0.00	0.00	AEG Research
Paper Mfg	Cooling	Thermostat - WiFi/Interactive	sqft	Existing	0.29	5	\$0.66	5%	15%	\$0.09	0.00	0.00	7th Power Plan
Paper Mfg	Heating	Thermostat - WiFi/Interactive	sqft	Existing	1.21	5	\$0.66	5%	15%	\$0.09	0.00	0.00	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Paper Mfg	Ventilation	Thermostat - WiFi/Interactive	sqft	Existing	0.04	5	\$0.66	5%	15%	\$0.09	0.00	0.00	7th Power Plan
Paper Mfg	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.00	15	\$0.35	7%	33%	\$161.23	0.00	0.00	7th Power Plan
Paper Mfg	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.00	15	\$0.58	7%	33%	\$190.02	0.00	0.00	7th Power Plan
Paper Mfg	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	Existing	0.02	15	\$0.00	1%	2%	\$0.01	0.00	0.00	7th Power Plan
Paper Mfg	Interior Lighting	Interior Lighting - Timeclocks and Timers	sqft	Existing	0.00	8	\$0.00	7%	7%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Paper Mfg	Interior Lighting	Interior Lighting - Skylights	sqft	Existing	0.00	15	\$1.01	15%	23%	\$0.00	0.00	0.00	AEG Research
Paper Mfg	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	sqft	Existing	0.04	16	\$1.81	5%	40%	\$3.95	0.00	0.00	7th Power Plan
Paper Mfg	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	Existing	0.04	11	\$0.00	15%	50%	\$0.01	0.00	0.00	Illinois TRM
Paper Mfg	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	sqft	Existing	0.05	8	\$0.03	15%	25%	\$0.08	0.00	0.00	7th Power Plan
Paper Mfg	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	Existing	0.03	8	\$0.02	33%	60%	\$0.08	0.00	0.00	Pacific Gas and Electric Research
Paper Mfg	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	Existing	0.03	7	\$1.19	15%	30%	\$4.38	0.00	0.00	AEG Research
Paper Mfg	Process	Process - Conductivity Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Paper Mfg	Process	Process - Timers and Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Paper Mfg	Motors	Process - Timers and Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Paper Mfg	Process	Refrigeration - Floating Head Pressure	employee	Existing	0.39	15	\$0.38	20%	50%	\$0.11	0.00	0.00	RTF Workbook
Paper Mfg	Process	Refrigeration - System Optimization	employee	Existing	0.62	15	\$0.27	20%	50%	\$0.05	0.00	0.00	AEG Research
Paper Mfg	Motors	Pumping System - Equipment Upgrade	employee	Existing	20.92	10	\$3.13	9%	38%	\$0.05	0.02	0.00	7th Power Plan
Paper Mfg	Motors	Pumping System - System Optimization	employee	Existing	15.43	12	\$4.78	9%	38%	\$0.04	0.02	0.00	UNIDO Study on Industrial Energy Efficiency
Paper Mfg	Motors	Pumping System - Variable Speed Drive	employee	Existing	15.22	10	\$4.97	9%	38%	\$0.04	0.02	0.00	UNIDO Study on Industrial Energy Efficiency

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Paper Mfg	Motors	Fan System - Equipment Upgrade	employee	Existing	11.24	10	\$1.14	9%	38%	\$0.04	0.01	0.00	UNIDO Study on Industrial Energy Efficiency
Paper Mfg	Motors	Fan System - Flow Optimization	employee	Existing	13.22	10	\$1.89	9%	38%	\$0.02	0.01	0.00	UNIDO Study on Industrial Energy Efficiency
Paper Mfg	Motors	Fan System - Variable Speed Drive	employee	Existing	19.11	10	\$9.52	9%	38%	\$0.06	0.02	0.04	UNIDO Study on Industrial Energy Efficiency
Paper Mfg	Motors	Compressed Air - Equipment Upgrade	employee	Existing	20.97	10	\$1.53	17%	50%	\$0.04	0.03	0.00	7th Power Plan
Paper Mfg	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	Existing	0.00	15	\$0.00	16%	38%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Paper Mfg	Motors	Compressed Air - Refrigerated Cycling Dryers	employee	Existing	0.00	10	\$0.00	16%	30%	\$0.00	0.00	0.01	Michigan Energy Measures Database
Paper Mfg	Motors	Compressed Air - System Controls	employee	Existing	4.44	10	\$1.09	9%	38%	\$0.03	0.00	0.00	UNIDO Study on Industrial Energy Efficiency
Paper Mfg	Motors	Compressed Air - Leak Management Program	employee	Existing	11.85	10	\$1.10	18%	75%	\$0.04	0.02	0.30	7th Power Plan
Paper Mfg	Motors	Compressed Air - Variable Speed Drive	employee	Existing	8.10	15	\$6.69	26%	45%	\$0.08	0.01	0.02	UNIDO Study on Industrial Energy Efficiency
Paper Mfg	Motors	Compressed Air - Low Pressure-Drop Filters	employee	Existing	0.27	10	\$0.10	17%	50%	\$0.05	0.00	0.01	Illinois TRM
Paper Mfg	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	Existing	1.68	10	\$0.33	17%	50%	\$0.03	0.00	0.00	UNIDO Study on Industrial Energy Efficiency
Paper Mfg	Motors	Compressed Air - Outside Air Intake	employee	Existing	0.00	20	\$0.00	17%	50%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Paper Mfg	Motors	Compressed Air - Receiver Capacity Addition	employee	Existing	1.65	15	\$0.92	17%	50%	\$0.06	0.00	0.00	UNIDO Study on Industrial Energy Efficiency
Paper Mfg	Motors	Material Handling - Variable Speed Drive	employee	Existing	43.50	10	\$16.24	25%	45%	\$0.05	0.03	0.00	7th Power Plan
Paper Mfg	Motors	Motors - Green Rewind (<100 HP)	employee	Existing	0.87	10	\$0.40	10%	50%	\$0.06	0.01	0.00	7th Power Plan
Paper Mfg	Motors	Motors - Green Rewind (100 HP+)	employee	Existing	0.50	10	\$0.14	6%	25%	\$0.04	0.00	0.28	7th Power Plan
Paper Mfg	Motors	Switch from Belt Drive to Direct Drive	employee	Existing	7.57	12	\$1.74	16%	25%	\$0.03	0.01	0.00	2015-mdu-irp-report---volume-iii.pdf
Paper Mfg	Motors	Motors - Synchronous Belts	employee	Existing	1.99	10	\$0.52	16%	36%	\$0.03	0.01	0.12	7th Power Plan
Paper Mfg	Miscellaneous	Agriculture - Engine Block Timer	employee	Existing	10.85	3	\$0.13	0%	0%	\$0.00	0.00	0.55	Vermont TRM

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Paper Mfg	Motors	Agriculture - Live Stock Waterer	employee	Existing	49.00	10	\$27.61	0%	0%	\$0.07	0.00	0.09	Ontario Power TRM
Paper Mfg	Process	Dairy - Milk Precoolers	employee	Existing	2.58	15	\$1.22	0%	0%	\$0.05	0.00	0.05	Ontario Power TRM
Paper Mfg	Process	Clean Room: Change Filter Strategy	employee	Existing	3.75	15	\$0.03	0%	0%	\$0.00	0.00	0.02	7th Power Plan
Paper Mfg	Process	Clean Room: Chiller Optimize	employee	Existing	0.78	15	\$0.07	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Paper Mfg	Process	Clean Room: Clean Room HVAC	employee	Existing	0.47	15	\$0.09	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Paper Mfg	Process	Elec Chip Fab: Solidstate Chiller	employee	Existing	0.46	15	\$0.27	0%	0%	\$0.06	0.00	0.39	7th Power Plan
Paper Mfg	Process	Elec Chip Fab: Eliminate Exhaust	employee	Existing	0.46	15	\$0.10	0%	0%	\$0.02	0.00	0.06	7th Power Plan
Paper Mfg	Process	Elec Chip Fab: Exhaust Injector	employee	Existing	0.92	15	\$0.48	0%	0%	\$0.06	0.00	0.02	7th Power Plan
Paper Mfg	Process	Elec Chip Fab: Reduce Gas Pressure	employee	Existing	0.94	15	\$0.01	0%	0%	\$0.00	0.00	0.06	7th Power Plan
Paper Mfg	Motors	Panel: Hydraulic Press	employee	Existing	65.96	10	\$16.23	0%	0%	\$0.03	0.00	0.01	7th Power Plan
Paper Mfg	Motors	Wood: Replace Pneumatic Conveyor	employee	Existing	73.74	10	\$1.22	0%	0%	\$0.00	0.00	0.05	7th Power Plan
Paper Mfg	Process	Metal: New Arc Furnace	employee	Existing	23.55	10	\$2.49	0%	0%	\$0.01	0.00	0.41	7th Power Plan
Paper Mfg	Process	Paper: Premium Control Large Material	employee	Existing	3.03	10	\$1.55	15%	40%	\$0.07	0.01	0.20	7th Power Plan
Paper Mfg	Process	Paper: Efficient Pulp Screen	employee	Existing	2.47	10	\$0.51	15%	29%	\$0.03	0.01	0.22	7th Power Plan
Paper Mfg	Process	Kraft: Effluent Treatment System	employee	Existing	2.49	10	\$0.21	15%	25%	\$0.01	0.00	0.03	7th Power Plan
Paper Mfg	Motors	Kraft: Efficient Agitator	employee	Existing	124.29	10	\$12.11	15%	29%	\$0.01	0.06	0.58	7th Power Plan
Paper Mfg	Process	Mech Pulp: Premium Process	employee	Existing	0.03	5	\$0.00	15%	38%	\$0.03	0.00	5.19	7th Power Plan
Paper Mfg	Motors	Mech Pulp: Refiner Plate Improvement	employee	Existing	1.01	1	\$0.05	15%	52%	\$0.04	0.00	0.44	7th Power Plan
Paper Mfg	Cooling	Transformer - High Efficiency	employee	Existing	0.61	10	\$1.36	15%	15%	\$0.02	0.00	0.29	7th Power Plan
Paper Mfg	Heating	Transformer - High Efficiency	employee	Existing	1.15	10	\$1.36	15%	15%	\$0.02	0.00	1.28	7th Power Plan
Paper Mfg	Ventilation	Transformer - High Efficiency	employee	Existing	0.06	10	\$1.36	15%	15%	\$0.02	0.00	0.21	7th Power Plan

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Paper Mfg	Interior Lighting	Transformer - High Efficiency	employee	Existing	0.26	10	\$1.36	15%	15%	\$0.02	0.00	2.67	7th Power Plan
Paper Mfg	Exterior Lighting	Transformer - High Efficiency	employee	Existing	0.05	10	\$1.36	15%	15%	\$0.02	0.00	3.65	7th Power Plan
Paper Mfg	Motors	Transformer - High Efficiency	employee	Existing	7.17	10	\$1.36	15%	15%	\$0.02	0.00	0.02	7th Power Plan
Paper Mfg	Process	Transformer - High Efficiency	employee	Existing	1.18	10	\$1.36	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Paper Mfg	Miscellaneous	Transformer - High Efficiency	employee	Existing	0.41	10	\$1.36	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Paper Mfg	Cooling	Strategic Energy Management	employee	Existing	1.70	3	\$8.37	0%	24%	\$0.08	0.00	0.51	AEG Research
Paper Mfg	Heating	Strategic Energy Management	employee	Existing	3.26	3	\$8.37	0%	24%	\$0.08	0.00	0.51	AEG Research
Paper Mfg	Ventilation	Strategic Energy Management	employee	Existing	0.18	3	\$8.37	0%	24%	\$0.08	0.00	0.66	AEG Research
Paper Mfg	Interior Lighting	Strategic Energy Management	employee	Existing	0.75	3	\$8.37	0%	24%	\$0.08	0.00	0.94	AEG Research
Paper Mfg	Exterior Lighting	Strategic Energy Management	employee	Existing	0.15	3	\$8.37	0%	24%	\$0.08	0.00	0.62	AEG Research
Paper Mfg	Motors	Strategic Energy Management	employee	Existing	20.55	3	\$8.37	0%	24%	\$0.08	0.02	0.00	AEG Research
Paper Mfg	Process	Strategic Energy Management	employee	Existing	3.38	3	\$8.37	0%	24%	\$0.08	0.00	0.00	AEG Research
Paper Mfg	Miscellaneous	Strategic Energy Management	employee	Existing	1.18	3	\$8.37	0%	24%	\$0.08	0.00	0.00	AEG Research
Paper Mfg	Interior Lighting	Commissioning	employee	Existing	0.86	3	\$15.00	0%	0%	\$0.15	0.00	0.00	AEG Research
Paper Mfg	Exterior Lighting	Commissioning	employee	Existing	0.18	3	\$15.00	0%	0%	\$0.15	0.00	0.00	AEG Research
Paper Mfg	Motors	Commissioning	employee	Existing	23.57	3	\$15.00	0%	0%	\$0.15	0.00	94.18	AEG Research
Paper Mfg	Process	Commissioning	employee	Existing	3.88	3	\$15.00	0%	0%	\$0.15	0.00	66.30	AEG Research
Paper Mfg	Miscellaneous	Commissioning	employee	Existing	1.35	3	\$15.00	0%	0%	\$0.15	0.00	64.84	AEG Research
Paper Mfg	Interior Lighting	Retrocommissioning	employee	Existing	0.88	3	\$9.52	10%	35%	\$0.10	0.00	0.00	AEG Research
Paper Mfg	Exterior Lighting	Retrocommissioning	employee	Existing	0.18	3	\$9.52	10%	35%	\$0.10	0.00	0.00	AEG Research
Paper Mfg	Motors	Retrocommissioning	employee	Existing	23.88	3	\$9.52	10%	35%	\$0.10	0.02	0.00	AEG Research

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Paper Mfg	Process	Retrocommissioning	employee	Existing	3.93	3	\$9.52	10%	35%	\$0.10	0.00	2.81	AEG Research
Paper Mfg	Miscellaneous	Retrocommissioning	employee	Existing	1.37	3	\$9.52	10%	35%	\$0.10	0.00	0.00	AEG Research
Paper Mfg	Motors	Municipal Sewage Treatment	employee	Existing	2.68	12	\$1.58	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Paper Mfg	Motors	Municipal Water Supply Treatment	employee	Existing	0.00	12	\$0.00	0%	0%	\$0.00	0.00	0.53	7th Power Plan
Paper Mfg	Cooling	Insulation - Ceiling	sqft	New	0.12	45	\$1.28	15%	25%	\$0.15	0.00	2.75	Building Energy Simulation Tool
Paper Mfg	Heating	Insulation - Ceiling	sqft	New	0.50	45	\$1.28	15%	25%	\$0.15	0.00	0.65	Building Energy Simulation Tool
Paper Mfg	Ventilation	Insulation - Ceiling	sqft	New	0.01	45	\$1.28	15%	25%	\$0.15	0.00	0.04	Building Energy Simulation Tool
Paper Mfg	Cooling	Insulation - Ducting	sqft	New	0.05	20	\$0.84	15%	25%	\$1.09	0.00	0.23	Building Energy Simulation Tool
Paper Mfg	Heating	Insulation - Ducting	sqft	New	0.02	20	\$0.84	15%	25%	\$1.09	0.00	0.00	Building Energy Simulation Tool
Paper Mfg	Ventilation	Insulation - Ducting	sqft	New	0.00	20	\$0.84	15%	25%	\$1.09	0.00	0.23	Building Energy Simulation Tool
Paper Mfg	Cooling	Insulation - Wall Cavity	sqft	New	0.00	45	\$0.15	45%	50%	\$0.02	0.00	2.42	Building Energy Simulation Tool
Paper Mfg	Heating	Insulation - Wall Cavity	sqft	New	0.71	45	\$0.15	45%	50%	\$0.02	0.00	5.67	Building Energy Simulation Tool
Paper Mfg	Ventilation	Insulation - Wall Cavity	sqft	New	0.02	45	\$0.15	45%	50%	\$0.02	0.00	1.53	Building Energy Simulation Tool
Paper Mfg	Cooling	HVAC - Duct Repair and Sealing	sqft	New	0.02	18	\$0.00	15%	25%	\$0.00	0.00	11.74	Building Energy Simulation Tool
Paper Mfg	Heating	HVAC - Duct Repair and Sealing	sqft	New	0.05	18	\$0.00	15%	25%	\$0.00	0.00	6.69	Building Energy Simulation Tool
Paper Mfg	Ventilation	HVAC - Duct Repair and Sealing	sqft	New	0.00	18	\$0.00	15%	25%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Paper Mfg	Cooling	Chiller - Chilled Water Reset	sqft	New	0.04	10	\$0.01	15%	45%	\$0.03	0.00	0.00	AEG-BEST
Paper Mfg	Cooling	Chiller - Chilled Water Variable-Flow System	sqft	New	0.20	15	\$0.50	15%	60%	\$0.25	0.00	0.00	AEG-BEST
Paper Mfg	Cooling	Chiller - Variable Speed Fans	sqft	New	0.08	15	\$0.03	15%	75%	\$0.04	0.00	0.00	New Jersey TRM
Paper Mfg	Cooling	HVAC - Economizer	sqft	New	0.00	10	\$0.25	18%	30%	\$72.54	0.00	0.00	AEG-BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Paper Mfg	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.25	15%	35%	\$12.08	0.00	0.00	7th Power Plan
Paper Mfg	Cooling	Destratification Fans (HVLS)	sqft	New	0.15	15	\$0.63	15%	50%	\$0.05	0.00	0.00	AEG Research
Paper Mfg	Heating	Destratification Fans (HVLS)	sqft	New	1.30	15	\$0.63	15%	50%	\$0.05	0.00	0.00	AEG Research
Paper Mfg	Cooling	RTU - Maintenance	sqft	New	0.08	3	\$0.07	15%	75%	\$0.27	0.00	0.00	AEG Research
Paper Mfg	Cooling	Thermostat - WiFi/Interactive	sqft	New	0.28	5	\$0.66	5%	15%	\$0.09	0.00	0.00	7th Power Plan
Paper Mfg	Heating	Thermostat - WiFi/Interactive	sqft	New	1.19	5	\$0.66	5%	15%	\$0.09	0.00	0.00	7th Power Plan
Paper Mfg	Ventilation	Thermostat - WiFi/Interactive	sqft	New	0.03	5	\$0.66	5%	15%	\$0.09	0.00	0.00	7th Power Plan
Paper Mfg	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.00	15	\$0.35	22%	41%	\$159.17	0.00	0.00	7th Power Plan
Paper Mfg	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.00	15	\$0.58	22%	41%	\$187.60	0.00	0.00	7th Power Plan
Paper Mfg	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	New	0.03	15	\$0.00	1%	2%	\$0.01	0.00	0.00	7th Power Plan
Paper Mfg	Interior Lighting	Interior Lighting - Timeclocks and Timers	sqft	New	0.00	8	\$0.00	7%	7%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Paper Mfg	Interior Lighting	Interior Lighting - Skylights	sqft	New	0.00	15	\$1.01	18%	24%	\$0.00	0.00	0.00	AEG Research
Paper Mfg	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	sqft	New	0.04	16	\$1.81	5%	40%	\$3.94	0.00	0.00	7th Power Plan
Paper Mfg	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	New	0.04	11	\$0.00	15%	50%	\$0.01	0.00	0.00	Illinois TRM
Paper Mfg	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	sqft	New	0.05	8	\$0.03	15%	25%	\$0.08	0.00	0.00	7th Power Plan
Paper Mfg	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	New	0.03	8	\$0.02	44%	60%	\$0.08	0.00	0.00	Pacific Gas and Electric Research
Paper Mfg	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	New	0.03	7	\$1.19	15%	30%	\$4.28	0.00	0.00	AEG Research
Paper Mfg	Process	Process - Conductivity Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Paper Mfg	Process	Process - Timers and Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Paper Mfg	Motors	Process - Timers and Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Paper Mfg	Process	Refrigeration - Floating Head Pressure	employee	New	0.39	15	\$0.27	20%	50%	\$0.07	0.00	0.00	RTF Workbook
Paper Mfg	Process	Refrigeration - System Optimization	employee	New	0.63	15	\$0.09	20%	50%	\$0.02	0.00	0.00	AEG Research
Paper Mfg	Motors	Pumping System - Equipment Upgrade	employee	New	21.37	10	\$3.13	9%	38%	\$0.05	0.01	0.04	7th Power Plan
Paper Mfg	Motors	Pumping System - System Optimization	employee	New	15.86	12	\$4.78	9%	38%	\$0.04	0.01	0.09	UNIDO Study on Industrial Energy Efficiency
Paper Mfg	Motors	Pumping System - Variable Speed Drive	employee	New	15.71	10	\$4.97	9%	38%	\$0.04	0.01	0.03	UNIDO Study on Industrial Energy Efficiency
Paper Mfg	Motors	Fan System - Equipment Upgrade	employee	New	11.44	10	\$1.14	9%	38%	\$0.04	0.00	0.11	UNIDO Study on Industrial Energy Efficiency
Paper Mfg	Motors	Fan System - Flow Optimization	employee	New	13.48	10	\$1.89	9%	38%	\$0.02	0.00	0.02	UNIDO Study on Industrial Energy Efficiency
Paper Mfg	Motors	Fan System - Variable Speed Drive	employee	New	19.91	10	\$9.52	9%	38%	\$0.06	0.01	3.13	UNIDO Study on Industrial Energy Efficiency
Paper Mfg	Motors	Compressed Air - Equipment Upgrade	employee	New	20.97	10	\$1.53	17%	50%	\$0.04	0.01	0.18	7th Power Plan
Paper Mfg	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	New	0.00	15	\$0.00	16%	38%	\$0.00	0.00	0.16	Michigan Energy Measures Database
Paper Mfg	Motors	Compressed Air - Refrigerated Cycling Dryers	employee	New	0.00	10	\$0.00	16%	30%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Paper Mfg	Motors	Compressed Air - System Controls	employee	New	4.57	10	\$1.09	9%	38%	\$0.03	0.00	0.00	UNIDO Study on Industrial Energy Efficiency
Paper Mfg	Motors	Compressed Air - Leak Management Program	employee	New	11.90	10	\$1.10	18%	75%	\$0.04	0.01	0.00	7th Power Plan
Paper Mfg	Motors	Compressed Air - Variable Speed Drive	employee	New	8.42	15	\$6.69	26%	45%	\$0.08	0.00	0.00	UNIDO Study on Industrial Energy Efficiency
Paper Mfg	Motors	Compressed Air - Low Pressure-Drop Filters	employee	New	0.28	10	\$0.10	17%	50%	\$0.05	0.00	0.00	Illinois TRM
Paper Mfg	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	New	1.72	10	\$0.33	17%	50%	\$0.03	0.00	0.88	UNIDO Study on Industrial Energy Efficiency
Paper Mfg	Motors	Compressed Air - Outside Air Intake	employee	New	0.00	20	\$0.00	17%	50%	\$0.00	0.00	0.19	Michigan Energy Measures Database
Paper Mfg	Motors	Compressed Air - Receiver Capacity Addition	employee	New	1.71	15	\$0.92	17%	50%	\$0.06	0.00	24.76	UNIDO Study on Industrial Energy Efficiency
Paper Mfg	Motors	Material Handling - Variable Speed Drive	employee	New	45.03	10	\$16.24	25%	45%	\$0.05	0.01	1.40	7th Power Plan

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Paper Mfg	Motors	Motors - Green Rewind (<100 HP)	employee	New	0.91	10	\$0.40	10%	50%	\$0.06	0.00	1.25	7th Power Plan
Paper Mfg	Motors	Motors - Green Rewind (100 HP+)	employee	New	0.51	10	\$0.14	6%	25%	\$0.04	0.00	0.00	7th Power Plan
Paper Mfg	Motors	Switch from Belt Drive to Direct Drive	employee	New	7.77	12	\$1.74	16%	25%	\$0.03	0.01	0.00	2015-mdu-irp-report---volume-iii.pdf
Paper Mfg	Motors	Motors - Synchronous Belts	employee	New	2.05	10	\$0.52	16%	36%	\$0.03	0.00	0.02	7th Power Plan
Paper Mfg	Miscellaneous	Agriculture - Engine Block Timer	employee	New	10.85	3	\$0.13	0%	0%	\$0.00	0.00	0.12	Vermont TRM
Paper Mfg	Motors	Agriculture - Live Stock Waterer	employee	New	51.21	10	\$27.61	0%	0%	\$0.07	0.00	0.02	Ontario Power TRM
Paper Mfg	Process	Dairy - Milk Precoolers	employee	New	2.60	15	\$1.22	0%	0%	\$0.05	0.00	0.01	Ontario Power TRM
Paper Mfg	Process	Clean Room: Change Filter Strategy	employee	New	3.75	15	\$0.03	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Paper Mfg	Process	Clean Room: Chiller Optimize	employee	New	0.78	15	\$0.07	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Paper Mfg	Process	Clean Room: Clean Room HVAC	employee	New	0.47	15	\$0.09	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Paper Mfg	Process	Elec Chip Fab: Solidstate Chiller	employee	New	0.47	15	\$0.27	0%	0%	\$0.06	0.00	0.08	7th Power Plan
Paper Mfg	Process	Elec Chip Fab: Eliminate Exhaust	employee	New	0.47	15	\$0.10	0%	0%	\$0.02	0.00	0.01	7th Power Plan
Paper Mfg	Process	Elec Chip Fab: Exhaust Injector	employee	New	0.92	15	\$0.48	0%	0%	\$0.06	0.00	0.00	7th Power Plan
Paper Mfg	Process	Elec Chip Fab: Reduce Gas Pressure	employee	New	0.94	15	\$0.01	0%	0%	\$0.00	0.00	0.01	7th Power Plan
Paper Mfg	Motors	Panel: Hydraulic Press	employee	New	67.92	10	\$16.23	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Paper Mfg	Motors	Wood: Replace Pneumatic Conveyor	employee	New	73.74	10	\$1.22	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Paper Mfg	Process	Metal: New Arc Furnace	employee	New	23.60	10	\$2.49	0%	0%	\$0.01	0.00	0.04	7th Power Plan
Paper Mfg	Process	Paper: Premium Control Large Material	employee	New	3.06	10	\$1.55	15%	40%	\$0.07	0.00	0.02	7th Power Plan
Paper Mfg	Process	Paper: Efficient Pulp Screen	employee	New	2.47	10	\$0.51	15%	29%	\$0.03	0.00	0.02	7th Power Plan
Paper Mfg	Process	Kraft: Effluent Treatment System	employee	New	2.48	10	\$0.21	15%	25%	\$0.01	0.00	0.00	7th Power Plan
Paper Mfg	Motors	Kraft: Efficient Agitator	employee	New	125.40	10	\$12.11	15%	29%	\$0.01	0.01	0.06	7th Power Plan
Paper Mfg	Process	Mech Pulp: Premium Process	employee	New	0.03	5	\$0.00	15%	38%	\$0.03	0.00	0.56	7th Power Plan

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Paper Mfg	Motors	Mech Pulp: Refiner Plate Improvement	employee	New	1.05	1	\$0.05	15%	52%	\$0.04	0.00	0.01	7th Power Plan
Paper Mfg	Cooling	Transformer - High Efficiency	employee	New	0.58	10	\$1.35	15%	15%	\$0.02	0.00	0.01	7th Power Plan
Paper Mfg	Heating	Transformer - High Efficiency	employee	New	1.12	10	\$1.35	15%	15%	\$0.02	0.00	0.03	7th Power Plan
Paper Mfg	Ventilation	Transformer - High Efficiency	employee	New	0.05	10	\$1.35	15%	15%	\$0.02	0.00	0.01	7th Power Plan
Paper Mfg	Interior Lighting	Transformer - High Efficiency	employee	New	0.27	10	\$1.35	15%	15%	\$0.02	0.00	0.66	7th Power Plan
Paper Mfg	Exterior Lighting	Transformer - High Efficiency	employee	New	0.06	10	\$1.35	15%	15%	\$0.02	0.00	0.91	7th Power Plan
Paper Mfg	Motors	Transformer - High Efficiency	employee	New	7.49	10	\$1.35	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Paper Mfg	Process	Transformer - High Efficiency	employee	New	1.21	10	\$1.35	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Paper Mfg	Miscellaneous	Transformer - High Efficiency	employee	New	0.39	10	\$1.35	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Paper Mfg	Cooling	Strategic Energy Management	employee	New	1.63	3	\$8.28	0%	24%	\$0.08	0.00	0.06	AEG Research
Paper Mfg	Heating	Strategic Energy Management	employee	New	3.23	3	\$8.28	0%	24%	\$0.08	0.00	0.05	AEG Research
Paper Mfg	Ventilation	Strategic Energy Management	employee	New	0.15	3	\$8.28	0%	24%	\$0.08	0.00	0.05	AEG Research
Paper Mfg	Interior Lighting	Strategic Energy Management	employee	New	0.77	3	\$8.28	0%	24%	\$0.08	0.00	0.04	AEG Research
Paper Mfg	Exterior Lighting	Strategic Energy Management	employee	New	0.17	3	\$8.28	0%	24%	\$0.08	0.00	0.04	AEG Research
Paper Mfg	Motors	Strategic Energy Management	employee	New	21.63	3	\$8.28	0%	24%	\$0.08	0.00	0.00	AEG Research
Paper Mfg	Process	Strategic Energy Management	employee	New	3.49	3	\$8.28	0%	24%	\$0.08	0.00	0.00	AEG Research
Paper Mfg	Miscellaneous	Strategic Energy Management	employee	New	1.12	3	\$8.28	0%	24%	\$0.08	0.00	0.00	AEG Research
Paper Mfg	Interior Lighting	Commissioning	employee	New	0.89	3	\$15.04	10%	35%	\$0.15	0.00	0.00	AEG Research
Paper Mfg	Exterior Lighting	Commissioning	employee	New	0.19	3	\$15.04	10%	35%	\$0.15	0.00	0.00	AEG Research

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Paper Mfg	Motors	Commissioning	employee	New	24.93	3	\$15.04	10%	35%	\$0.15	0.00	9.90	AEG Research
Paper Mfg	Process	Commissioning	employee	New	4.02	3	\$15.04	10%	35%	\$0.15	0.00	10.59	AEG Research
Paper Mfg	Miscellaneous	Commissioning	employee	New	1.29	3	\$15.04	10%	35%	\$0.15	0.00	9.44	AEG Research
Paper Mfg	Interior Lighting	Retrocommissioning	employee	New	0.89	3	\$9.54	0%	0%	\$0.10	0.00	0.00	AEG Research
Paper Mfg	Exterior Lighting	Retrocommissioning	employee	New	0.19	3	\$9.54	0%	0%	\$0.10	0.00	0.00	AEG Research
Paper Mfg	Motors	Retrocommissioning	employee	New	24.96	3	\$9.54	0%	0%	\$0.10	0.00	0.00	AEG Research
Paper Mfg	Process	Retrocommissioning	employee	New	4.02	3	\$9.54	0%	0%	\$0.10	0.00	0.29	AEG Research
Paper Mfg	Miscellaneous	Retrocommissioning	employee	New	1.30	3	\$9.54	0%	0%	\$0.10	0.00	0.00	AEG Research
Paper Mfg	Motors	Municipal Sewage Treatment	employee	New	2.79	12	\$1.58	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Paper Mfg	Motors	Municipal Water Supply Treatment	employee	New	0.00	12	\$0.00	0%	0%	\$0.00	0.00	0.06	7th Power Plan
Petroleum Refining	Cooling	Insulation - Ceiling	sqft	Existing	0.13	45	\$1.28	15%	25%	\$0.14	0.00	0.00	Building Energy Simulation Tool
Petroleum Refining	Heating	Insulation - Ceiling	sqft	Existing	0.52	45	\$1.28	15%	25%	\$0.14	0.02	0.00	Building Energy Simulation Tool
Petroleum Refining	Ventilation	Insulation - Ceiling	sqft	Existing	0.02	45	\$1.28	15%	25%	\$0.14	0.00	0.00	Building Energy Simulation Tool
Petroleum Refining	Cooling	Insulation - Ducting	sqft	Existing	0.05	20	\$0.84	15%	25%	\$1.01	0.00	0.00	Building Energy Simulation Tool
Petroleum Refining	Heating	Insulation - Ducting	sqft	Existing	0.02	20	\$0.84	15%	25%	\$1.01	0.00	0.01	Building Energy Simulation Tool
Petroleum Refining	Ventilation	Insulation - Ducting	sqft	Existing	0.00	20	\$0.84	15%	25%	\$1.01	0.00	0.02	Building Energy Simulation Tool
Petroleum Refining	Cooling	Insulation - Wall Cavity	sqft	Existing	0.00	45	\$0.15	45%	50%	\$0.02	0.00	0.00	Building Energy Simulation Tool
Petroleum Refining	Heating	Insulation - Wall Cavity	sqft	Existing	0.76	45	\$0.15	45%	50%	\$0.02	0.02	0.00	Building Energy Simulation Tool
Petroleum Refining	Ventilation	Insulation - Wall Cavity	sqft	Existing	0.02	45	\$0.15	45%	50%	\$0.02	0.00	0.00	Building Energy Simulation Tool
Petroleum Refining	Cooling	HVAC - Duct Repair and Sealing	sqft	Existing	0.02	18	\$0.00	15%	25%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Petroleum Refining	Heating	HVAC - Duct Repair and Sealing	sqft	Existing	0.05	18	\$0.00	15%	25%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Petroleum Refining	Ventilation	HVAC - Duct Repair and Sealing	sqft	Existing	0.00	18	\$0.00	15%	25%	\$0.00	0.00	0.02	Building Energy Simulation Tool

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Petroleum Refining	Cooling	Chiller - Chilled Water Reset	sqft	Existing	0.04	10	\$0.01	15%	45%	\$0.03	0.00	0.00	AEG-BEST
Petroleum Refining	Cooling	Chiller - Chilled Water Variable-Flow System	sqft	Existing	0.24	15	\$0.50	15%	60%	\$0.21	0.02	0.00	AEG-BEST
Petroleum Refining	Cooling	Chiller - Variable Speed Fans	sqft	Existing	0.09	15	\$0.03	15%	75%	\$0.04	0.01	0.00	New Jersey TRM
Petroleum Refining	Cooling	HVAC - Economizer	sqft	Existing	0.28	10	\$0.25	18%	30%	\$0.11	0.01	0.00	AEG-BEST
Petroleum Refining	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.25	15%	35%	\$10.33	0.00	0.00	7th Power Plan
Petroleum Refining	Cooling	Destratification Fans (HVLS)	sqft	Existing	0.16	15	\$0.63	15%	50%	\$0.04	0.02	0.02	AEG Research
Petroleum Refining	Heating	Destratification Fans (HVLS)	sqft	Existing	1.38	15	\$0.63	15%	50%	\$0.04	0.21	0.01	AEG Research
Petroleum Refining	Cooling	RTU - Maintenance	sqft	Existing	0.08	3	\$0.07	15%	75%	\$0.26	0.02	0.01	AEG Research
Petroleum Refining	Cooling	Thermostat - WiFi/Interactive	sqft	Existing	0.29	5	\$0.66	5%	15%	\$0.09	0.01	0.00	7th Power Plan
Petroleum Refining	Heating	Thermostat - WiFi/Interactive	sqft	Existing	1.21	5	\$0.66	5%	15%	\$0.09	0.05	0.03	7th Power Plan
Petroleum Refining	Ventilation	Thermostat - WiFi/Interactive	sqft	Existing	0.04	5	\$0.66	5%	15%	\$0.09	0.01	0.23	7th Power Plan
Petroleum Refining	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.33	15	\$0.35	7%	33%	\$0.09	0.06	0.02	7th Power Plan
Petroleum Refining	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.45	15	\$0.58	7%	33%	\$0.10	0.08	0.01	7th Power Plan
Petroleum Refining	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	Existing	0.02	15	\$0.00	1%	2%	\$0.01	0.00	0.06	7th Power Plan
Petroleum Refining	Interior Lighting	Interior Lighting - Timeclocks and Timers	sqft	Existing	0.00	8	\$0.00	7%	7%	\$0.00	0.00	0.01	SCP Tool Occupancy Hour Reductions.xlsx
Petroleum Refining	Interior Lighting	Interior Lighting - Skylights	sqft	Existing	0.00	15	\$1.01	15%	23%	\$0.00	0.00	0.08	AEG Research
Petroleum Refining	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	sqft	Existing	0.03	16	\$1.81	5%	40%	\$3.95	0.01	0.11	7th Power Plan
Petroleum Refining	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	Existing	0.04	11	\$0.00	15%	50%	\$0.01	0.01	0.00	Illinois TRM
Petroleum Refining	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	sqft	Existing	0.05	8	\$0.03	15%	25%	\$0.08	0.01	0.00	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Petroleum Refining	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	Existing	0.03	8	\$0.02	33%	60%	\$0.08	0.02	0.00	Pacific Gas and Electric Research
Petroleum Refining	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	Existing	0.03	7	\$1.19	15%	30%	\$4.38	0.01	0.02	AEG Research
Petroleum Refining	Process	Process - Conductivity Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.02	N/A
Petroleum Refining	Process	Process - Timers and Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.02	N/A
Petroleum Refining	Motors	Process - Timers and Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.03	N/A
Petroleum Refining	Process	Refrigeration - Floating Head Pressure	employee	Existing	24.42	15	\$23.91	20%	50%	\$0.11	0.06	0.02	RTF Workbook
Petroleum Refining	Process	Refrigeration - System Optimization	employee	Existing	39.39	15	\$16.83	20%	50%	\$0.05	0.10	0.00	AEG Research
Petroleum Refining	Motors	Pumping System - Equipment Upgrade	employee	Existing	1,183.91	10	\$174.31	9%	38%	\$0.05	2.76	0.00	7th Power Plan
Petroleum Refining	Motors	Pumping System - System Optimization	employee	Existing	856.95	12	\$265.65	9%	38%	\$0.04	1.93	0.00	UNIDO Study on Industrial Energy Efficiency
Petroleum Refining	Motors	Pumping System - Variable Speed Drive	employee	Existing	833.90	10	\$276.38	9%	38%	\$0.04	1.86	0.05	UNIDO Study on Industrial Energy Efficiency
Petroleum Refining	Motors	Fan System - Equipment Upgrade	employee	Existing	107.28	10	\$10.78	9%	38%	\$0.04	0.24	0.09	UNIDO Study on Industrial Energy Efficiency
Petroleum Refining	Motors	Fan System - Flow Optimization	employee	Existing	126.49	10	\$17.83	9%	38%	\$0.02	0.29	0.57	UNIDO Study on Industrial Energy Efficiency
Petroleum Refining	Motors	Fan System - Variable Speed Drive	employee	Existing	177.04	10	\$89.73	9%	38%	\$0.06	0.39	0.41	UNIDO Study on Industrial Energy Efficiency
Petroleum Refining	Motors	Compressed Air - Equipment Upgrade	employee	Existing	563.00	10	\$40.97	17%	50%	\$0.04	1.55	0.40	7th Power Plan
Petroleum Refining	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	Existing	0.00	15	\$0.00	16%	38%	\$0.00	0.00	0.14	Michigan Energy Measures Database
Petroleum Refining	Motors	Compressed Air - Refrigerated Cycling Dryers	employee	Existing	0.00	10	\$0.00	16%	30%	\$0.00	0.00	0.16	Michigan Energy Measures Database
Petroleum Refining	Motors	Compressed Air - System Controls	employee	Existing	117.64	10	\$29.29	9%	38%	\$0.03	0.27	0.24	UNIDO Study on Industrial Energy Efficiency
Petroleum Refining	Motors	Compressed Air - Leak Management Program	employee	Existing	316.80	10	\$29.44	18%	75%	\$0.04	1.49	1.29	7th Power Plan
Petroleum Refining	Motors	Compressed Air - Variable Speed Drive	employee	Existing	213.81	15	\$179.58	26%	45%	\$0.08	0.32	0.00	UNIDO Study on Industrial Energy Efficiency

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Petroleum Refining	Motors	Compressed Air - Low Pressure-Drop Filters	employee	Existing	7.13	10	\$2.77	17%	50%	\$0.05	0.02	0.00	Illinois TRM
Petroleum Refining	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	Existing	45.01	10	\$8.98	17%	50%	\$0.03	0.12	0.24	UNIDO Study on Industrial Energy Efficiency
Petroleum Refining	Motors	Compressed Air - Outside Air Intake	employee	Existing	0.00	20	\$0.00	17%	50%	\$0.00	0.00	1.24	Michigan Energy Measures Database
Petroleum Refining	Motors	Compressed Air - Receiver Capacity Addition	employee	Existing	43.83	15	\$24.69	17%	50%	\$0.06	0.12	0.30	UNIDO Study on Industrial Energy Efficiency
Petroleum Refining	Motors	Material Handling - Variable Speed Drive	employee	Existing	240.09	10	\$92.05	25%	45%	\$0.05	0.37	0.02	7th Power Plan
Petroleum Refining	Motors	Motors - Green Rewind (<100 HP)	employee	Existing	17.09	10	\$7.92	10%	50%	\$0.06	0.26	0.11	7th Power Plan
Petroleum Refining	Motors	Motors - Green Rewind (100 HP+)	employee	Existing	9.75	10	\$2.81	6%	25%	\$0.04	0.07	0.00	7th Power Plan
Petroleum Refining	Motors	Switch from Belt Drive to Direct Drive	employee	Existing	151.25	12	\$34.77	16%	25%	\$0.03	0.57	0.10	2015-mdu-irp-report---volume-iii.pdf
Petroleum Refining	Motors	Motors - Synchronous Belts	employee	Existing	39.20	10	\$10.46	16%	36%	\$0.03	0.31	0.34	7th Power Plan
Petroleum Refining	Miscellaneous	Agriculture - Engine Block Timer	employee	Existing	85.47	3	\$1.05	0%	0%	\$0.00	0.00	0.12	Vermont TRM
Petroleum Refining	Motors	Agriculture - Live Stock Waterer	employee	Existing	2,689.03	10	\$1,535.14	0%	0%	\$0.07	0.00	0.03	Ontario Power TRM
Petroleum Refining	Process	Dairy - Milk Precoolers	employee	Existing	162.82	15	\$76.07	0%	0%	\$0.05	0.00	0.25	Ontario Power TRM
Petroleum Refining	Process	Clean Room: Change Filter Strategy	employee	Existing	5.28	15	\$0.04	0%	0%	\$0.00	0.00	0.14	7th Power Plan
Petroleum Refining	Process	Clean Room: Chiller Optimize	employee	Existing	48.65	15	\$4.50	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Petroleum Refining	Process	Clean Room: Clean Room HVAC	employee	Existing	29.54	15	\$5.44	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Petroleum Refining	Process	Elec Chip Fab: Solidstate Chiller	employee	Existing	29.31	15	\$17.08	0%	0%	\$0.06	0.00	0.00	7th Power Plan
Petroleum Refining	Process	Elec Chip Fab: Eliminate Exhaust	employee	Existing	0.66	15	\$0.14	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Petroleum Refining	Process	Elec Chip Fab: Exhaust Injector	employee	Existing	1.31	15	\$0.68	0%	0%	\$0.06	0.00	0.00	7th Power Plan
Petroleum Refining	Process	Elec Chip Fab: Reduce Gas Pressure	employee	Existing	1.32	15	\$0.01	0%	0%	\$0.00	0.00	0.00	7th Power Plan

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Petroleum Refining	Motors	Panel: Hydraulic Press	employee	Existing	368.85	10	\$91.99	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Petroleum Refining	Motors	Wood: Replace Pneumatic Conveyor	employee	Existing	417.89	10	\$6.89	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Petroleum Refining	Process	Metal: New Arc Furnace	employee	Existing	242.25	10	\$25.43	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Petroleum Refining	Process	Paper: Premium Control Large Material	employee	Existing	48.37	10	\$24.51	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Petroleum Refining	Process	Paper: Efficient Pulp Screen	employee	Existing	39.24	10	\$8.07	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Petroleum Refining	Process	Kraft: Effluent Treatment System	employee	Existing	39.24	10	\$3.31	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Petroleum Refining	Motors	Kraft: Efficient Agitator	employee	Existing	698.92	10	\$68.65	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Petroleum Refining	Process	Mech Pulp: Premium Process	employee	Existing	0.44	5	\$0.06	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Petroleum Refining	Motors	Mech Pulp: Refiner Plate Improvement	employee	Existing	5.64	1	\$0.26	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Petroleum Refining	Cooling	Transformer - High Efficiency	employee	Existing	9.09	10	\$24.67	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Petroleum Refining	Heating	Transformer - High Efficiency	employee	Existing	17.21	10	\$24.67	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Petroleum Refining	Ventilation	Transformer - High Efficiency	employee	Existing	0.94	10	\$24.67	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Petroleum Refining	Interior Lighting	Transformer - High Efficiency	employee	Existing	2.68	10	\$24.67	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Petroleum Refining	Exterior Lighting	Transformer - High Efficiency	employee	Existing	0.58	10	\$24.67	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Petroleum Refining	Motors	Transformer - High Efficiency	employee	Existing	141.42	10	\$24.67	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Petroleum Refining	Process	Transformer - High Efficiency	employee	Existing	19.37	10	\$24.67	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Petroleum Refining	Miscellaneous	Transformer - High Efficiency	employee	Existing	3.23	10	\$24.67	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Petroleum Refining	Cooling	Strategic Energy Management	employee	Existing	25.21	3	\$151.50	0%	5%	\$0.08	0.00	0.00	AEG Research
Petroleum Refining	Heating	Strategic Energy Management	employee	Existing	48.85	3	\$151.50	0%	5%	\$0.08	0.00	0.00	AEG Research

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Petroleum Refining	Ventilation	Strategic Energy Management	employee	Existing	2.69	3	\$151.50	0%	5%	\$0.08	0.00	0.00	AEG Research
Petroleum Refining	Interior Lighting	Strategic Energy Management	employee	Existing	7.64	3	\$151.50	0%	5%	\$0.08	0.00	0.00	AEG Research
Petroleum Refining	Exterior Lighting	Strategic Energy Management	employee	Existing	1.66	3	\$151.50	0%	5%	\$0.08	0.00	0.00	AEG Research
Petroleum Refining	Motors	Strategic Energy Management	employee	Existing	404.61	3	\$151.50	0%	5%	\$0.08	0.15	0.00	AEG Research
Petroleum Refining	Process	Strategic Energy Management	employee	Existing	55.40	3	\$151.50	0%	5%	\$0.08	0.02	0.00	AEG Research
Petroleum Refining	Miscellaneous	Strategic Energy Management	employee	Existing	9.24	3	\$151.50	0%	5%	\$0.08	0.00	0.00	AEG Research
Petroleum Refining	Interior Lighting	Commissioning	employee	Existing	8.80	3	\$285.65	0%	0%	\$0.15	0.00	0.00	AEG Research
Petroleum Refining	Exterior Lighting	Commissioning	employee	Existing	1.91	3	\$285.65	0%	0%	\$0.15	0.00	0.07	AEG Research
Petroleum Refining	Motors	Commissioning	employee	Existing	466.28	3	\$285.65	0%	0%	\$0.15	0.00	0.04	AEG Research
Petroleum Refining	Process	Commissioning	employee	Existing	63.85	3	\$285.65	0%	0%	\$0.15	0.00	0.01	AEG Research
Petroleum Refining	Miscellaneous	Commissioning	employee	Existing	10.65	3	\$285.65	0%	0%	\$0.15	0.00	0.00	AEG Research
Petroleum Refining	Interior Lighting	Retrocommissioning	employee	Existing	8.94	3	\$181.34	5%	39%	\$0.10	0.02	0.00	AEG Research
Petroleum Refining	Exterior Lighting	Retrocommissioning	employee	Existing	1.93	3	\$181.34	5%	39%	\$0.10	0.00	0.00	AEG Research
Petroleum Refining	Motors	Retrocommissioning	employee	Existing	471.40	3	\$181.34	5%	39%	\$0.10	1.17	0.00	AEG Research
Petroleum Refining	Process	Retrocommissioning	employee	Existing	64.57	3	\$181.34	5%	39%	\$0.10	0.17	0.00	AEG Research
Petroleum Refining	Miscellaneous	Retrocommissioning	employee	Existing	10.78	3	\$181.34	5%	39%	\$0.10	0.04	0.03	AEG Research
Petroleum Refining	Motors	Municipal Sewage Treatment	employee	Existing	146.30	12	\$87.63	0%	0%	\$0.07	0.00	0.01	7th Power Plan
Petroleum Refining	Motors	Municipal Water Supply Treatment	employee	Existing	0.00	12	\$0.00	0%	0%	\$0.00	0.00	0.53	7th Power Plan
Petroleum Refining	Cooling	Insulation - Ceiling	sqft	New	0.12	45	\$1.28	15%	25%	\$0.15	0.00	0.35	Building Energy Simulation Tool

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Petroleum Refining	Heating	Insulation - Ceiling	sqft	New	0.51	45	\$1.28	15%	25%	\$0.15	0.01	0.05	Building Energy Simulation Tool
Petroleum Refining	Ventilation	Insulation - Ceiling	sqft	New	0.01	45	\$1.28	15%	25%	\$0.15	0.00	0.00	Building Energy Simulation Tool
Petroleum Refining	Cooling	Insulation - Ducting	sqft	New	0.04	20	\$0.84	15%	25%	\$1.09	0.00	0.00	Building Energy Simulation Tool
Petroleum Refining	Heating	Insulation - Ducting	sqft	New	0.02	20	\$0.84	15%	25%	\$1.09	0.00	0.00	Building Energy Simulation Tool
Petroleum Refining	Ventilation	Insulation - Ducting	sqft	New	0.00	20	\$0.84	15%	25%	\$1.09	0.00	0.01	Building Energy Simulation Tool
Petroleum Refining	Cooling	Insulation - Wall Cavity	sqft	New	0.00	45	\$0.15	45%	50%	\$0.02	0.00	0.00	Building Energy Simulation Tool
Petroleum Refining	Heating	Insulation - Wall Cavity	sqft	New	0.71	45	\$0.15	45%	50%	\$0.02	0.00	0.00	Building Energy Simulation Tool
Petroleum Refining	Ventilation	Insulation - Wall Cavity	sqft	New	0.02	45	\$0.15	45%	50%	\$0.02	0.00	0.00	Building Energy Simulation Tool
Petroleum Refining	Cooling	HVAC - Duct Repair and Sealing	sqft	New	0.01	18	\$0.00	15%	25%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Petroleum Refining	Heating	HVAC - Duct Repair and Sealing	sqft	New	0.05	18	\$0.00	15%	25%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Petroleum Refining	Ventilation	HVAC - Duct Repair and Sealing	sqft	New	0.00	18	\$0.00	15%	25%	\$0.00	0.00	0.01	Building Energy Simulation Tool
Petroleum Refining	Cooling	Chiller - Chilled Water Reset	sqft	New	0.04	10	\$0.01	15%	45%	\$0.03	0.00	0.00	AEG-BEST
Petroleum Refining	Cooling	Chiller - Chilled Water Variable-Flow System	sqft	New	0.20	15	\$0.50	15%	60%	\$0.25	0.00	0.00	AEG-BEST
Petroleum Refining	Cooling	Chiller - Variable Speed Fans	sqft	New	0.07	15	\$0.03	15%	75%	\$0.04	0.00	0.00	New Jersey TRM
Petroleum Refining	Cooling	HVAC - Economizer	sqft	New	0.26	10	\$0.25	18%	30%	\$0.12	0.00	0.00	AEG-BEST
Petroleum Refining	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.25	15%	35%	\$12.06	0.00	0.00	7th Power Plan
Petroleum Refining	Cooling	Destratification Fans (HVLS)	sqft	New	0.15	15	\$0.63	15%	50%	\$0.05	0.00	0.00	AEG Research
Petroleum Refining	Heating	Destratification Fans (HVLS)	sqft	New	1.30	15	\$0.63	15%	50%	\$0.05	0.04	0.00	AEG Research
Petroleum Refining	Cooling	RTU - Maintenance	sqft	New	0.08	3	\$0.07	15%	75%	\$0.27	0.00	0.00	AEG Research

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Petroleum Refining	Cooling	Thermostat - WiFi/Interactive	sqft	New	0.27	5	\$0.66	5%	15%	\$0.09	0.00	0.00	7th Power Plan
Petroleum Refining	Heating	Thermostat - WiFi/Interactive	sqft	New	1.20	5	\$0.66	5%	15%	\$0.09	0.00	0.00	7th Power Plan
Petroleum Refining	Ventilation	Thermostat - WiFi/Interactive	sqft	New	0.03	5	\$0.66	5%	15%	\$0.09	0.00	0.04	7th Power Plan
Petroleum Refining	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.31	15	\$0.35	22%	41%	\$0.09	0.02	0.00	7th Power Plan
Petroleum Refining	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.42	15	\$0.58	22%	41%	\$0.10	0.03	0.00	7th Power Plan
Petroleum Refining	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	New	0.02	15	\$0.00	1%	2%	\$0.01	0.00	0.00	7th Power Plan
Petroleum Refining	Interior Lighting	Interior Lighting - Timeclocks and Timers	sqft	New	0.00	8	\$0.00	7%	7%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Petroleum Refining	Interior Lighting	Interior Lighting - Skylights	sqft	New	0.00	15	\$1.01	18%	24%	\$0.00	0.00	0.03	AEG Research
Petroleum Refining	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	sqft	New	0.03	16	\$1.81	5%	40%	\$3.94	0.00	0.04	7th Power Plan
Petroleum Refining	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	New	0.03	11	\$0.00	15%	50%	\$0.01	0.00	0.00	Illinois TRM
Petroleum Refining	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	sqft	New	0.05	8	\$0.03	15%	25%	\$0.08	0.00	0.00	7th Power Plan
Petroleum Refining	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	New	0.02	8	\$0.02	44%	60%	\$0.08	0.00	0.00	Pacific Gas and Electric Research
Petroleum Refining	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	New	0.03	7	\$1.19	15%	30%	\$4.32	0.00	0.00	AEG Research
Petroleum Refining	Process	Process - Conductivity Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Petroleum Refining	Process	Process - Timers and Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Petroleum Refining	Motors	Process - Timers and Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Petroleum Refining	Process	Refrigeration - Floating Head Pressure	employee	New	24.51	15	\$16.89	20%	50%	\$0.07	0.01	0.00	RTF Workbook
Petroleum Refining	Process	Refrigeration - System Optimization	employee	New	39.39	15	\$5.91	20%	50%	\$0.02	0.02	0.00	AEG Research
Petroleum Refining	Motors	Pumping System - Equipment Upgrade	employee	New	1,203.67	10	\$174.31	9%	38%	\$0.05	0.54	0.00	7th Power Plan

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Petroleum Refining	Motors	Pumping System - System Optimization	employee	New	885.66	12	\$265.65	9%	38%	\$0.04	0.51	0.00	UNIDO Study on Industrial Energy Efficiency
Petroleum Refining	Motors	Pumping System - Variable Speed Drive	employee	New	871.43	10	\$276.38	9%	38%	\$0.04	0.44	0.01	UNIDO Study on Industrial Energy Efficiency
Petroleum Refining	Motors	Fan System - Equipment Upgrade	employee	New	108.84	10	\$10.78	9%	38%	\$0.04	0.06	0.02	UNIDO Study on Industrial Energy Efficiency
Petroleum Refining	Motors	Fan System - Flow Optimization	employee	New	128.46	10	\$17.83	9%	38%	\$0.02	0.07	0.11	UNIDO Study on Industrial Energy Efficiency
Petroleum Refining	Motors	Fan System - Variable Speed Drive	employee	New	187.23	10	\$89.73	9%	38%	\$0.06	0.10	0.10	UNIDO Study on Industrial Energy Efficiency
Petroleum Refining	Motors	Compressed Air - Equipment Upgrade	employee	New	563.00	10	\$40.97	17%	50%	\$0.04	0.30	0.09	7th Power Plan
Petroleum Refining	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	New	0.00	15	\$0.00	16%	38%	\$0.00	0.00	0.03	Michigan Energy Measures Database
Petroleum Refining	Motors	Compressed Air - Refrigerated Cycling Dryers	employee	New	0.00	10	\$0.00	16%	30%	\$0.00	0.00	0.04	Michigan Energy Measures Database
Petroleum Refining	Motors	Compressed Air - System Controls	employee	New	122.46	10	\$29.29	9%	38%	\$0.03	0.06	0.05	UNIDO Study on Industrial Energy Efficiency
Petroleum Refining	Motors	Compressed Air - Leak Management Program	employee	New	319.14	10	\$29.44	18%	75%	\$0.04	0.29	0.25	7th Power Plan
Petroleum Refining	Motors	Compressed Air - Variable Speed Drive	employee	New	225.52	15	\$179.58	26%	45%	\$0.08	0.08	0.00	UNIDO Study on Industrial Energy Efficiency
Petroleum Refining	Motors	Compressed Air - Low Pressure-Drop Filters	employee	New	7.52	10	\$2.77	17%	50%	\$0.05	0.00	0.00	Illinois TRM
Petroleum Refining	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	New	46.49	10	\$8.98	17%	50%	\$0.03	0.02	0.05	UNIDO Study on Industrial Energy Efficiency
Petroleum Refining	Motors	Compressed Air - Outside Air Intake	employee	New	0.00	20	\$0.00	17%	50%	\$0.00	0.00	0.24	Michigan Energy Measures Database
Petroleum Refining	Motors	Compressed Air - Receiver Capacity Addition	employee	New	45.75	15	\$24.69	17%	50%	\$0.06	0.03	0.07	UNIDO Study on Industrial Energy Efficiency
Petroleum Refining	Motors	Material Handling - Variable Speed Drive	employee	New	252.83	10	\$92.05	25%	45%	\$0.05	0.09	0.00	7th Power Plan
Petroleum Refining	Motors	Motors - Green Rewind (<100 HP)	employee	New	18.05	10	\$7.92	10%	50%	\$0.06	0.06	0.02	7th Power Plan
Petroleum Refining	Motors	Motors - Green Rewind (100 HP+)	employee	New	10.20	10	\$2.81	6%	25%	\$0.04	0.02	0.00	7th Power Plan
Petroleum Refining	Motors	Switch from Belt Drive to Direct Drive	employee	New	155.89	12	\$34.77	16%	25%	\$0.03	0.15	0.02	2015-mdu-irp-report---volume-iii.pdf

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Petroleum Refining	Motors	Motors - Synchronous Belts	employee	New	40.86	10	\$10.46	16%	36%	\$0.03	0.07	0.08	7th Power Plan
Petroleum Refining	Miscellaneous	Agriculture - Engine Block Timer	employee	New	85.47	3	\$1.05	0%	0%	\$0.00	0.00	0.03	Vermont TRM
Petroleum Refining	Motors	Agriculture - Live Stock Waterer	employee	New	2,848.41	10	\$1,535.14	0%	0%	\$0.07	0.00	0.01	Ontario Power TRM
Petroleum Refining	Process	Dairy - Milk Precoolers	employee	New	163.37	15	\$76.07	0%	0%	\$0.05	0.00	0.06	Ontario Power TRM
Petroleum Refining	Process	Clean Room: Change Filter Strategy	employee	New	5.28	15	\$0.04	0%	0%	\$0.00	0.00	0.03	7th Power Plan
Petroleum Refining	Process	Clean Room: Chiller Optimize	employee	New	48.65	15	\$4.50	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Petroleum Refining	Process	Clean Room: Clean Room HVAC	employee	New	29.41	15	\$5.44	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Petroleum Refining	Process	Elec Chip Fab: Solidstate Chiller	employee	New	29.41	15	\$17.08	0%	0%	\$0.06	0.00	0.00	7th Power Plan
Petroleum Refining	Process	Elec Chip Fab: Eliminate Exhaust	employee	New	0.66	15	\$0.14	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Petroleum Refining	Process	Elec Chip Fab: Exhaust Injector	employee	New	1.31	15	\$0.68	0%	0%	\$0.06	0.00	0.00	7th Power Plan
Petroleum Refining	Process	Elec Chip Fab: Reduce Gas Pressure	employee	New	1.32	15	\$0.01	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Petroleum Refining	Motors	Panel: Hydraulic Press	employee	New	383.97	10	\$91.99	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Petroleum Refining	Motors	Wood: Replace Pneumatic Conveyor	employee	New	417.89	10	\$6.89	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Petroleum Refining	Process	Metal: New Arc Furnace	employee	New	241.17	10	\$25.43	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Petroleum Refining	Process	Paper: Premium Control Large Material	employee	New	48.64	10	\$24.51	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Petroleum Refining	Process	Paper: Efficient Pulp Screen	employee	New	39.07	10	\$8.07	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Petroleum Refining	Process	Kraft: Effluent Treatment System	employee	New	39.07	10	\$3.31	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Petroleum Refining	Motors	Kraft: Efficient Agitator	employee	New	709.13	10	\$68.65	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Petroleum Refining	Process	Mech Pulp: Premium Process	employee	New	0.44	5	\$0.06	0%	0%	\$0.03	0.00	0.00	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Petroleum Refining	Motors	Mech Pulp: Refiner Plate Improvement	employee	New	5.97	1	\$0.26	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Petroleum Refining	Cooling	Transformer - High Efficiency	employee	New	8.44	10	\$24.43	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Petroleum Refining	Heating	Transformer - High Efficiency	employee	New	16.97	10	\$24.43	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Petroleum Refining	Ventilation	Transformer - High Efficiency	employee	New	0.71	10	\$24.43	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Petroleum Refining	Interior Lighting	Transformer - High Efficiency	employee	New	2.55	10	\$24.43	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Petroleum Refining	Exterior Lighting	Transformer - High Efficiency	employee	New	0.57	10	\$24.43	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Petroleum Refining	Motors	Transformer - High Efficiency	employee	New	149.80	10	\$24.43	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Petroleum Refining	Process	Transformer - High Efficiency	employee	New	19.48	10	\$24.43	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Petroleum Refining	Miscellaneous	Transformer - High Efficiency	employee	New	3.06	10	\$24.43	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Petroleum Refining	Cooling	Strategic Energy Management	employee	New	24.01	3	\$150.06	0%	5%	\$0.08	0.00	0.00	AEG Research
Petroleum Refining	Heating	Strategic Energy Management	employee	New	48.74	3	\$150.06	0%	5%	\$0.08	0.00	0.00	AEG Research
Petroleum Refining	Ventilation	Strategic Energy Management	employee	New	2.03	3	\$150.06	0%	5%	\$0.08	0.00	0.00	AEG Research
Petroleum Refining	Interior Lighting	Strategic Energy Management	employee	New	7.34	3	\$150.06	0%	5%	\$0.08	0.00	0.00	AEG Research
Petroleum Refining	Exterior Lighting	Strategic Energy Management	employee	New	1.65	3	\$150.06	0%	5%	\$0.08	0.00	0.00	AEG Research
Petroleum Refining	Motors	Strategic Energy Management	employee	New	432.76	3	\$150.06	0%	5%	\$0.08	0.00	0.00	AEG Research
Petroleum Refining	Process	Strategic Energy Management	employee	New	56.27	3	\$150.06	0%	5%	\$0.08	0.00	0.00	AEG Research
Petroleum Refining	Miscellaneous	Strategic Energy Management	employee	New	8.85	3	\$150.06	0%	5%	\$0.08	0.00	0.00	AEG Research
Petroleum Refining	Interior Lighting	Commissioning	employee	New	8.47	3	\$286.05	5%	39%	\$0.15	0.00	0.00	AEG Research
Petroleum Refining	Exterior Lighting	Commissioning	employee	New	1.90	3	\$286.05	5%	39%	\$0.15	0.00	0.00	AEG Research

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Petroleum Refining	Motors	Commissioning	employee	New	499.22	3	\$286.05	5%	39%	\$0.15	0.03	0.00	AEG Research
Petroleum Refining	Process	Commissioning	employee	New	64.91	3	\$286.05	5%	39%	\$0.15	0.00	0.00	AEG Research
Petroleum Refining	Miscellaneous	Commissioning	employee	New	10.21	3	\$286.05	5%	39%	\$0.15	0.00	0.00	AEG Research
Petroleum Refining	Interior Lighting	Retrocommissioning	employee	New	8.51	3	\$181.59	0%	0%	\$0.10	0.00	0.00	AEG Research
Petroleum Refining	Exterior Lighting	Retrocommissioning	employee	New	1.90	3	\$181.59	0%	0%	\$0.10	0.00	0.02	AEG Research
Petroleum Refining	Motors	Retrocommissioning	employee	New	499.34	3	\$181.59	0%	0%	\$0.10	0.00	0.01	AEG Research
Petroleum Refining	Process	Retrocommissioning	employee	New	64.93	3	\$181.59	0%	0%	\$0.10	0.00	0.00	AEG Research
Petroleum Refining	Miscellaneous	Retrocommissioning	employee	New	10.21	3	\$181.59	0%	0%	\$0.10	0.00	0.00	AEG Research
Petroleum Refining	Motors	Municipal Sewage Treatment	employee	New	154.55	12	\$87.63	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Petroleum Refining	Motors	Municipal Water Supply Treatment	employee	New	0.00	12	\$0.00	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Cooling	Insulation - Ceiling	sqft	Existing	0.13	45	\$1.28	15%	25%	\$0.14	0.01	0.08	Building Energy Simulation Tool
Stone Clay Glass Products	Heating	Insulation - Ceiling	sqft	Existing	0.52	45	\$1.28	15%	25%	\$0.14	0.05	0.46	Building Energy Simulation Tool
Stone Clay Glass Products	Ventilation	Insulation - Ceiling	sqft	Existing	0.02	45	\$1.28	15%	25%	\$0.14	0.01	0.00	Building Energy Simulation Tool
Stone Clay Glass Products	Cooling	Insulation - Ducting	sqft	Existing	0.05	20	\$0.84	15%	25%	\$1.01	0.00	0.46	Building Energy Simulation Tool
Stone Clay Glass Products	Heating	Insulation - Ducting	sqft	Existing	0.02	20	\$0.84	15%	25%	\$1.01	0.00	5.17	Building Energy Simulation Tool
Stone Clay Glass Products	Ventilation	Insulation - Ducting	sqft	Existing	0.00	20	\$0.84	15%	25%	\$1.01	0.00	0.79	Building Energy Simulation Tool
Stone Clay Glass Products	Cooling	Insulation - Wall Cavity	sqft	Existing	0.00	45	\$0.15	45%	50%	\$0.02	0.00	0.21	Building Energy Simulation Tool
Stone Clay Glass Products	Heating	Insulation - Wall Cavity	sqft	Existing	0.76	45	\$0.15	45%	50%	\$0.02	0.04	1.60	Building Energy Simulation Tool
Stone Clay Glass Products	Ventilation	Insulation - Wall Cavity	sqft	Existing	0.02	45	\$0.15	45%	50%	\$0.02	0.01	0.92	Building Energy Simulation Tool

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Stone Clay Glass Products	Cooling	HVAC - Duct Repair and Sealing	sqft	Existing	0.02	18	\$0.00	15%	25%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Stone Clay Glass Products	Heating	HVAC - Duct Repair and Sealing	sqft	Existing	0.05	18	\$0.00	15%	25%	\$0.00	0.01	0.00	Building Energy Simulation Tool
Stone Clay Glass Products	Ventilation	HVAC - Duct Repair and Sealing	sqft	Existing	0.00	18	\$0.00	15%	25%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Stone Clay Glass Products	Cooling	Chiller - Chilled Water Reset	sqft	Existing	0.04	10	\$0.01	15%	45%	\$0.03	0.00	5.06	AEG-BEST
Stone Clay Glass Products	Cooling	Chiller - Chilled Water Variable-Flow System	sqft	Existing	0.24	15	\$0.50	15%	60%	\$0.21	0.04	4.95	AEG-BEST
Stone Clay Glass Products	Cooling	Chiller - Variable Speed Fans	sqft	Existing	0.09	15	\$0.03	15%	75%	\$0.04	0.02	2.98	New Jersey TRM
Stone Clay Glass Products	Cooling	HVAC - Economizer	sqft	Existing	0.19	10	\$0.25	18%	30%	\$0.16	0.02	3.05	AEG-BEST
Stone Clay Glass Products	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.25	15%	35%	\$10.33	0.00	0.64	7th Power Plan
Stone Clay Glass Products	Cooling	Destratification Fans (HVLS)	sqft	Existing	0.16	15	\$0.63	15%	50%	\$0.04	0.05	1.28	AEG Research
Stone Clay Glass Products	Heating	Destratification Fans (HVLS)	sqft	Existing	1.38	15	\$0.63	15%	50%	\$0.04	0.51	1.29	AEG Research
Stone Clay Glass Products	Cooling	RTU - Maintenance	sqft	Existing	0.08	3	\$0.07	15%	75%	\$0.26	0.04	0.00	AEG Research
Stone Clay Glass Products	Cooling	Thermostat - WiFi/Interactive	sqft	Existing	0.29	5	\$0.66	5%	15%	\$0.09	0.03	0.00	7th Power Plan
Stone Clay Glass Products	Heating	Thermostat - WiFi/Interactive	sqft	Existing	1.21	5	\$0.66	5%	15%	\$0.09	0.12	0.00	7th Power Plan
Stone Clay Glass Products	Ventilation	Thermostat - WiFi/Interactive	sqft	Existing	0.04	5	\$0.66	5%	15%	\$0.09	0.02	0.00	7th Power Plan
Stone Clay Glass Products	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.23	15	\$0.35	7%	33%	\$0.13	0.19	0.00	7th Power Plan
Stone Clay Glass Products	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.31	15	\$0.58	7%	33%	\$0.15	0.25	0.00	7th Power Plan
Stone Clay Glass Products	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	Existing	0.02	15	\$0.00	1%	2%	\$0.01	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Interior Lighting	Interior Lighting - Timerclocks and Timers	sqft	Existing	0.00	8	\$0.00	7%	7%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Stone Clay Glass Products	Interior Lighting	Interior Lighting - Skylights	sqft	Existing	0.00	15	\$1.01	15%	23%	\$0.00	0.00	0.00	AEG Research

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Stone Clay Glass Products	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	sqft	Existing	0.03	16	\$1.81	5%	40%	\$3.95	0.03	0.00	7th Power Plan
Stone Clay Glass Products	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	Existing	0.04	11	\$0.00	15%	50%	\$0.01	0.03	0.00	Illinois TRM
Stone Clay Glass Products	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	sqft	Existing	0.05	8	\$0.03	15%	25%	\$0.08	0.04	0.00	7th Power Plan
Stone Clay Glass Products	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	Existing	0.03	8	\$0.02	33%	60%	\$0.08	0.05	0.00	Pacific Gas and Electric Research
Stone Clay Glass Products	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	Existing	0.03	7	\$1.19	15%	30%	\$4.39	0.03	0.00	AEG Research
Stone Clay Glass Products	Process	Process - Conductivity Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Process	Process - Timers and Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Motors	Process - Timers and Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Process	Refrigeration - Floating Head Pressure	employee	Existing	11.22	15	\$10.91	20%	50%	\$0.11	0.04	0.16	RTF Workbook
Stone Clay Glass Products	Process	Refrigeration - System Optimization	employee	Existing	17.97	15	\$7.68	20%	50%	\$0.05	0.07	0.32	AEG Research
Stone Clay Glass Products	Motors	Pumping System - Equipment Upgrade	employee	Existing	156.76	10	\$22.61	9%	38%	\$0.05	0.54	0.10	7th Power Plan
Stone Clay Glass Products	Motors	Pumping System - System Optimization	employee	Existing	116.21	12	\$34.46	9%	38%	\$0.04	0.39	0.17	UNIDO Study on Industrial Energy Efficiency
Stone Clay Glass Products	Motors	Pumping System - Variable Speed Drive	employee	Existing	115.18	10	\$35.85	9%	38%	\$0.04	0.39	0.04	UNIDO Study on Industrial Energy Efficiency
Stone Clay Glass Products	Motors	Fan System - Equipment Upgrade	employee	Existing	122.40	10	\$12.00	9%	38%	\$0.04	0.41	0.44	UNIDO Study on Industrial Energy Efficiency
Stone Clay Glass Products	Motors	Fan System - Flow Optimization	employee	Existing	144.07	10	\$19.85	9%	38%	\$0.02	0.49	0.70	UNIDO Study on Industrial Energy Efficiency
Stone Clay Glass Products	Motors	Fan System - Variable Speed Drive	employee	Existing	210.31	10	\$99.90	9%	38%	\$0.06	0.70	0.29	UNIDO Study on Industrial Energy Efficiency
Stone Clay Glass Products	Motors	Compressed Air - Equipment Upgrade	employee	Existing	70.52	10	\$5.13	17%	50%	\$0.04	0.29	0.00	7th Power Plan
Stone Clay Glass Products	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	Existing	0.00	15	\$0.00	16%	38%	\$0.00	0.00	0.00	Michigan Energy Measures Database

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Stone Clay Glass Products	Motors	Compressed Air - Refrigerated Cycling Dryers	employee	Existing	0.00	10	\$0.00	16%	30%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Stone Clay Glass Products	Motors	Compressed Air - System Controls	employee	Existing	15.64	10	\$3.67	9%	38%	\$0.03	0.05	0.00	UNIDO Study on Industrial Energy Efficiency
Stone Clay Glass Products	Motors	Compressed Air - Leak Management Program	employee	Existing	40.18	10	\$3.69	18%	75%	\$0.04	0.28	0.00	7th Power Plan
Stone Clay Glass Products	Motors	Compressed Air - Variable Speed Drive	employee	Existing	28.49	15	\$22.49	26%	45%	\$0.08	0.06	1.35	UNIDO Study on Industrial Energy Efficiency
Stone Clay Glass Products	Motors	Compressed Air - Low Pressure-Drop Filters	employee	Existing	0.95	10	\$0.35	17%	50%	\$0.05	0.00	0.30	Illinois TRM
Stone Clay Glass Products	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	Existing	5.89	10	\$1.12	17%	50%	\$0.03	0.02	3.45	UNIDO Study on Industrial Energy Efficiency
Stone Clay Glass Products	Motors	Compressed Air - Outside Air Intake	employee	Existing	0.00	20	\$0.00	17%	50%	\$0.00	0.00	5.56	Michigan Energy Measures Database
Stone Clay Glass Products	Motors	Compressed Air - Receiver Capacity Addition	employee	Existing	5.84	15	\$3.09	17%	50%	\$0.06	0.02	2.32	UNIDO Study on Industrial Energy Efficiency
Stone Clay Glass Products	Motors	Material Handling - Variable Speed Drive	employee	Existing	834.55	10	\$296.01	25%	45%	\$0.05	1.96	0.00	7th Power Plan
Stone Clay Glass Products	Motors	Motors - Green Rewind (<100 HP)	employee	Existing	11.57	10	\$5.03	10%	50%	\$0.06	0.27	0.00	7th Power Plan
Stone Clay Glass Products	Motors	Motors - Green Rewind (100 HP+)	employee	Existing	6.59	10	\$1.78	6%	25%	\$0.04	0.07	0.11	7th Power Plan
Stone Clay Glass Products	Motors	Switch from Belt Drive to Direct Drive	employee	Existing	100.26	12	\$22.06	16%	25%	\$0.03	0.56	0.51	2015-mdu-irp-report---volume-iii.pdf
Stone Clay Glass Products	Motors	Motors - Synchronous Belts	employee	Existing	26.46	10	\$6.64	16%	36%	\$0.03	0.32	0.07	7th Power Plan
Stone Clay Glass Products	Miscellaneous	Agriculture - Engine Block Timer	employee	Existing	236.84	3	\$2.92	0%	0%	\$0.00	0.00	0.04	Vermont TRM
Stone Clay Glass Products	Motors	Agriculture - Live Stock Waterer	employee	Existing	370.94	10	\$199.11	0%	0%	\$0.07	0.00	0.02	Ontario Power TRM
Stone Clay Glass Products	Process	Dairy - Milk Precoolers	employee	Existing	74.77	15	\$34.71	0%	0%	\$0.05	0.00	0.00	Ontario Power TRM
Stone Clay Glass Products	Process	Clean Room: Change Filter Strategy	employee	Existing	16.80	15	\$0.12	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Process	Clean Room: Chiller Optimize	employee	Existing	22.20	15	\$2.06	0%	0%	\$0.01	0.00	0.36	7th Power Plan
Stone Clay Glass Products	Process	Clean Room: Clean Room HVAC	employee	Existing	13.48	15	\$2.48	0%	0%	\$0.02	0.00	0.05	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Stone Clay Glass Products	Process	Elec Chip Fab: Solidstate Chiller	employee	Existing	13.46	15	\$7.79	0%	0%	\$0.06	0.00	0.01	7th Power Plan
Stone Clay Glass Products	Process	Elec Chip Fab: Eliminate Exhaust	employee	Existing	2.10	15	\$0.45	0%	0%	\$0.02	0.00	0.05	7th Power Plan
Stone Clay Glass Products	Process	Elec Chip Fab: Exhaust Injector	employee	Existing	4.19	15	\$2.15	0%	0%	\$0.06	0.00	0.01	7th Power Plan
Stone Clay Glass Products	Process	Elec Chip Fab: Reduce Gas Pressure	employee	Existing	4.20	15	\$0.04	0%	0%	\$0.00	0.00	0.02	7th Power Plan
Stone Clay Glass Products	Motors	Panel: Hydraulic Press	employee	Existing	1,258.95	10	\$295.84	0%	0%	\$0.03	0.00	0.22	7th Power Plan
Stone Clay Glass Products	Motors	Wood: Replace Pneumatic Conveyor	employee	Existing	1,343.90	10	\$22.16	0%	0%	\$0.00	0.00	0.11	7th Power Plan
Stone Clay Glass Products	Process	Metal: New Arc Furnace	employee	Existing	1,098.19	10	\$115.28	0%	0%	\$0.01	0.00	0.11	7th Power Plan
Stone Clay Glass Products	Process	Paper: Premium Control Large Material	employee	Existing	122.56	10	\$61.45	0%	0%	\$0.07	0.00	0.02	7th Power Plan
Stone Clay Glass Products	Process	Paper: Efficient Pulp Screen	employee	Existing	98.39	10	\$20.24	0%	0%	\$0.03	0.00	0.30	7th Power Plan
Stone Clay Glass Products	Process	Kraft: Effluent Treatment System	employee	Existing	98.39	10	\$8.30	0%	0%	\$0.01	0.00	2.78	7th Power Plan
Stone Clay Glass Products	Motors	Kraft: Efficient Agitator	employee	Existing	2,303.28	10	\$220.76	0%	0%	\$0.01	0.00	0.08	7th Power Plan
Stone Clay Glass Products	Process	Mech Pulp: Premium Process	employee	Existing	1.10	5	\$0.14	0%	0%	\$0.03	0.00	0.04	7th Power Plan
Stone Clay Glass Products	Motors	Mech Pulp: Refiner Plate Improvement	employee	Existing	19.29	1	\$0.84	0%	0%	\$0.04	0.00	0.16	7th Power Plan
Stone Clay Glass Products	Cooling	Transformer - High Efficiency	employee	Existing	14.75	10	\$24.40	15%	15%	\$0.02	0.00	0.02	7th Power Plan
Stone Clay Glass Products	Heating	Transformer - High Efficiency	employee	Existing	27.71	10	\$24.40	15%	15%	\$0.02	0.00	1.23	7th Power Plan
Stone Clay Glass Products	Ventilation	Transformer - High Efficiency	employee	Existing	1.51	10	\$24.40	15%	15%	\$0.02	0.00	1.68	7th Power Plan
Stone Clay Glass Products	Interior Lighting	Transformer - High Efficiency	employee	Existing	5.29	10	\$24.40	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Exterior Lighting	Transformer - High Efficiency	employee	Existing	1.14	10	\$24.40	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Motors	Transformer - High Efficiency	employee	Existing	95.45	10	\$24.40	15%	15%	\$0.02	0.00	0.00	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Stone Clay Glass Products	Process	Transformer - High Efficiency	employee	Existing	49.08	10	\$24.40	15%	15%	\$0.02	0.00	0.14	7th Power Plan
Stone Clay Glass Products	Miscellaneous	Transformer - High Efficiency	employee	Existing	8.96	10	\$24.40	15%	15%	\$0.02	0.00	0.12	7th Power Plan
Stone Clay Glass Products	Cooling	Strategic Energy Management	employee	Existing	40.59	3	\$149.85	0%	0%	\$0.08	0.00	0.13	AEG Research
Stone Clay Glass Products	Heating	Strategic Energy Management	employee	Existing	78.65	3	\$149.85	0%	0%	\$0.08	0.00	0.11	AEG Research
Stone Clay Glass Products	Ventilation	Strategic Energy Management	employee	Existing	4.34	3	\$149.85	0%	0%	\$0.08	0.00	0.11	AEG Research
Stone Clay Glass Products	Interior Lighting	Strategic Energy Management	employee	Existing	15.06	3	\$149.85	0%	0%	\$0.08	0.00	0.00	AEG Research
Stone Clay Glass Products	Exterior Lighting	Strategic Energy Management	employee	Existing	3.27	3	\$149.85	0%	0%	\$0.08	0.00	0.00	AEG Research
Stone Clay Glass Products	Motors	Strategic Energy Management	employee	Existing	273.37	3	\$149.85	0%	0%	\$0.08	0.00	0.00	AEG Research
Stone Clay Glass Products	Process	Strategic Energy Management	employee	Existing	140.54	3	\$149.85	0%	0%	\$0.08	0.00	0.24	AEG Research
Stone Clay Glass Products	Miscellaneous	Strategic Energy Management	employee	Existing	25.65	3	\$149.85	0%	0%	\$0.08	0.00	0.38	AEG Research
Stone Clay Glass Products	Interior Lighting	Commissioning	employee	Existing	17.38	3	\$247.44	0%	0%	\$0.15	0.00	0.14	AEG Research
Stone Clay Glass Products	Exterior Lighting	Commissioning	employee	Existing	3.78	3	\$247.44	0%	0%	\$0.15	0.00	0.14	AEG Research
Stone Clay Glass Products	Motors	Commissioning	employee	Existing	315.42	3	\$247.44	0%	0%	\$0.15	0.00	0.12	AEG Research
Stone Clay Glass Products	Process	Commissioning	employee	Existing	162.16	3	\$247.44	0%	0%	\$0.15	0.00	0.15	AEG Research
Stone Clay Glass Products	Miscellaneous	Commissioning	employee	Existing	29.59	3	\$247.44	0%	0%	\$0.15	0.00	0.17	AEG Research
Stone Clay Glass Products	Interior Lighting	Retrocommissioning	employee	Existing	17.62	3	\$157.08	10%	40%	\$0.09	0.05	0.26	AEG Research
Stone Clay Glass Products	Exterior Lighting	Retrocommissioning	employee	Existing	3.81	3	\$157.08	10%	40%	\$0.09	0.01	0.85	AEG Research
Stone Clay Glass Products	Motors	Retrocommissioning	employee	Existing	318.18	3	\$157.08	10%	40%	\$0.09	1.05	0.00	AEG Research
Stone Clay Glass Products	Process	Retrocommissioning	employee	Existing	163.61	3	\$157.08	10%	40%	\$0.09	0.55	0.00	AEG Research

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Stone Clay Glass Products	Miscellaneous	Retrocommissioning	employee	Existing	29.88	3	\$157.08	10%	40%	\$0.09	0.13	0.16	AEG Research
Stone Clay Glass Products	Motors	Municipal Sewage Treatment	employee	Existing	20.25	12	\$11.37	0%	0%	\$0.07	0.00	0.83	7th Power Plan
Stone Clay Glass Products	Motors	Municipal Water Supply Treatment	employee	Existing	0.00	12	\$0.00	0%	0%	\$0.00	0.00	0.24	7th Power Plan
Stone Clay Glass Products	Cooling	Insulation - Ceiling	sqft	New	0.11	45	\$1.28	15%	25%	\$0.15	0.00	0.01	Building Energy Simulation Tool
Stone Clay Glass Products	Heating	Insulation - Ceiling	sqft	New	0.51	45	\$1.28	15%	25%	\$0.15	0.01	0.07	Building Energy Simulation Tool
Stone Clay Glass Products	Ventilation	Insulation - Ceiling	sqft	New	0.01	45	\$1.28	15%	25%	\$0.15	0.00	0.00	Building Energy Simulation Tool
Stone Clay Glass Products	Cooling	Insulation - Ducting	sqft	New	0.04	20	\$0.84	15%	25%	\$1.09	0.00	0.09	Building Energy Simulation Tool
Stone Clay Glass Products	Heating	Insulation - Ducting	sqft	New	0.02	20	\$0.84	15%	25%	\$1.09	0.00	0.97	Building Energy Simulation Tool
Stone Clay Glass Products	Ventilation	Insulation - Ducting	sqft	New	0.00	20	\$0.84	15%	25%	\$1.09	0.00	0.15	Building Energy Simulation Tool
Stone Clay Glass Products	Cooling	Insulation - Wall Cavity	sqft	New	0.00	45	\$0.15	45%	50%	\$0.02	0.00	0.04	Building Energy Simulation Tool
Stone Clay Glass Products	Heating	Insulation - Wall Cavity	sqft	New	0.71	45	\$0.15	45%	50%	\$0.02	0.01	0.34	Building Energy Simulation Tool
Stone Clay Glass Products	Ventilation	Insulation - Wall Cavity	sqft	New	0.01	45	\$0.15	45%	50%	\$0.02	0.00	0.14	Building Energy Simulation Tool
Stone Clay Glass Products	Cooling	HVAC - Duct Repair and Sealing	sqft	New	0.01	18	\$0.00	15%	25%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Stone Clay Glass Products	Heating	HVAC - Duct Repair and Sealing	sqft	New	0.05	18	\$0.00	15%	25%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Stone Clay Glass Products	Ventilation	HVAC - Duct Repair and Sealing	sqft	New	0.00	18	\$0.00	15%	25%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Stone Clay Glass Products	Cooling	Chiller - Chilled Water Reset	sqft	New	0.04	10	\$0.01	15%	45%	\$0.03	0.00	1.13	AEG-BEST
Stone Clay Glass Products	Cooling	Chiller - Chilled Water Variable-Flow System	sqft	New	0.20	15	\$0.50	15%	60%	\$0.25	0.01	1.11	AEG-BEST
Stone Clay Glass Products	Cooling	Chiller - Variable Speed Fans	sqft	New	0.07	15	\$0.03	15%	75%	\$0.04	0.00	0.67	New Jersey TRM
Stone Clay Glass Products	Cooling	HVAC - Economizer	sqft	New	0.18	10	\$0.25	18%	30%	\$0.17	0.00	0.57	AEG-BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Stone Clay Glass Products	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.25	15%	35%	\$12.05	0.00	0.12	7th Power Plan
Stone Clay Glass Products	Cooling	Destratification Fans (HVLS)	sqft	New	0.15	15	\$0.63	15%	50%	\$0.05	0.01	0.24	AEG Research
Stone Clay Glass Products	Heating	Destratification Fans (HVLS)	sqft	New	1.30	15	\$0.63	15%	50%	\$0.05	0.08	0.24	AEG Research
Stone Clay Glass Products	Cooling	RTU - Maintenance	sqft	New	0.08	3	\$0.07	15%	75%	\$0.27	0.00	0.00	AEG Research
Stone Clay Glass Products	Cooling	Thermostat - WiFi/Interactive	sqft	New	0.27	5	\$0.66	5%	15%	\$0.09	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Heating	Thermostat - WiFi/Interactive	sqft	New	1.20	5	\$0.66	5%	15%	\$0.09	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Ventilation	Thermostat - WiFi/Interactive	sqft	New	0.03	5	\$0.66	5%	15%	\$0.09	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.21	15	\$0.35	22%	41%	\$0.13	0.06	0.00	7th Power Plan
Stone Clay Glass Products	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.28	15	\$0.58	22%	41%	\$0.15	0.08	0.00	7th Power Plan
Stone Clay Glass Products	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	New	0.02	15	\$0.00	1%	2%	\$0.01	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Interior Lighting	Interior Lighting - Timeclocks and Timers	sqft	New	0.00	8	\$0.00	7%	7%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Stone Clay Glass Products	Interior Lighting	Interior Lighting - Skylights	sqft	New	0.00	15	\$1.01	18%	24%	\$0.00	0.00	0.00	AEG Research
Stone Clay Glass Products	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	sqft	New	0.03	16	\$1.81	5%	40%	\$3.94	0.01	0.00	7th Power Plan
Stone Clay Glass Products	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	New	0.03	11	\$0.00	15%	50%	\$0.01	0.01	0.00	Illinois TRM
Stone Clay Glass Products	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	sqft	New	0.04	8	\$0.03	15%	25%	\$0.08	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	New	0.02	8	\$0.02	44%	60%	\$0.08	0.00	0.00	Pacific Gas and Electric Research
Stone Clay Glass Products	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	New	0.03	7	\$1.19	15%	30%	\$4.34	0.00	0.00	AEG Research
Stone Clay Glass Products	Process	Process - Conductivity Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Process	Process - Timers and Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A

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Stone Clay Glass Products	Motors	Process - Timers and Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Process	Refrigeration - Floating Head Pressure	employee	New	11.22	15	\$7.71	20%	50%	\$0.07	0.01	0.00	RTF Workbook
Stone Clay Glass Products	Process	Refrigeration - System Optimization	employee	New	17.97	15	\$2.70	20%	50%	\$0.02	0.01	0.01	AEG Research
Stone Clay Glass Products	Motors	Pumping System - Equipment Upgrade	employee	New	157.84	10	\$22.61	9%	38%	\$0.05	0.09	0.00	7th Power Plan
Stone Clay Glass Products	Motors	Pumping System - System Optimization	employee	New	117.65	12	\$34.46	9%	38%	\$0.04	0.09	0.00	UNIDO Study on Industrial Energy Efficiency
Stone Clay Glass Products	Motors	Pumping System - Variable Speed Drive	employee	New	117.08	10	\$35.85	9%	38%	\$0.04	0.08	0.00	UNIDO Study on Industrial Energy Efficiency
Stone Clay Glass Products	Motors	Fan System - Equipment Upgrade	employee	New	122.77	10	\$12.00	9%	38%	\$0.04	0.08	0.01	UNIDO Study on Industrial Energy Efficiency
Stone Clay Glass Products	Motors	Fan System - Flow Optimization	employee	New	144.77	10	\$19.85	9%	38%	\$0.02	0.09	0.01	UNIDO Study on Industrial Energy Efficiency
Stone Clay Glass Products	Motors	Fan System - Variable Speed Drive	employee	New	216.37	10	\$99.90	9%	38%	\$0.06	0.14	0.00	UNIDO Study on Industrial Energy Efficiency
Stone Clay Glass Products	Motors	Compressed Air - Equipment Upgrade	employee	New	70.52	10	\$5.13	17%	50%	\$0.04	0.05	0.03	7th Power Plan
Stone Clay Glass Products	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	New	0.00	15	\$0.00	16%	38%	\$0.00	0.00	0.01	Michigan Energy Measures Database
Stone Clay Glass Products	Motors	Compressed Air - Refrigerated Cycling Dryers	employee	New	0.00	10	\$0.00	16%	30%	\$0.00	0.00	0.07	Michigan Energy Measures Database
Stone Clay Glass Products	Motors	Compressed Air - System Controls	employee	New	15.86	10	\$3.67	9%	38%	\$0.03	0.01	0.11	UNIDO Study on Industrial Energy Efficiency
Stone Clay Glass Products	Motors	Compressed Air - Leak Management Program	employee	New	40.24	10	\$3.69	18%	75%	\$0.04	0.04	0.03	7th Power Plan
Stone Clay Glass Products	Motors	Compressed Air - Variable Speed Drive	employee	New	29.27	15	\$22.49	26%	45%	\$0.08	0.01	0.00	UNIDO Study on Industrial Energy Efficiency
Stone Clay Glass Products	Motors	Compressed Air - Low Pressure-Drop Filters	employee	New	0.98	10	\$0.35	17%	50%	\$0.05	0.00	0.00	Illinois TRM
Stone Clay Glass Products	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	New	5.96	10	\$1.12	17%	50%	\$0.03	0.00	0.00	UNIDO Study on Industrial Energy Efficiency
Stone Clay Glass Products	Motors	Compressed Air - Outside Air Intake	employee	New	0.00	20	\$0.00	17%	50%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Stone Clay Glass Products	Motors	Compressed Air - Receiver Capacity Addition	employee	New	5.93	15	\$3.09	17%	50%	\$0.06	0.00	0.00	UNIDO Study on Industrial Energy Efficiency

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Stone Clay Glass Products	Motors	Material Handling - Variable Speed Drive	employee	New	849.80	10	\$296.01	25%	45%	\$0.05	0.39	0.00	7th Power Plan
Stone Clay Glass Products	Motors	Motors - Green Rewind (<100 HP)	employee	New	11.89	10	\$5.03	10%	50%	\$0.06	0.05	0.00	7th Power Plan
Stone Clay Glass Products	Motors	Motors - Green Rewind (100 HP+)	employee	New	6.70	10	\$1.78	6%	25%	\$0.04	0.01	0.05	7th Power Plan
Stone Clay Glass Products	Motors	Switch from Belt Drive to Direct Drive	employee	New	101.25	12	\$22.06	16%	25%	\$0.03	0.12	0.23	2015-mdu-irp-report---volume-iii.pdf
Stone Clay Glass Products	Motors	Motors - Synchronous Belts	employee	New	26.84	10	\$6.64	16%	36%	\$0.03	0.05	0.04	7th Power Plan
Stone Clay Glass Products	Miscellaneous	Agriculture - Engine Block Timer	employee	New	236.84	3	\$2.92	0%	0%	\$0.00	0.00	0.02	Vermont TRM
Stone Clay Glass Products	Motors	Agriculture - Live Stock Waterer	employee	New	382.82	10	\$199.11	0%	0%	\$0.07	0.00	0.01	Ontario Power TRM
Stone Clay Glass Products	Process	Dairy - Milk Precoolers	employee	New	74.82	15	\$34.71	0%	0%	\$0.05	0.00	0.00	Ontario Power TRM
Stone Clay Glass Products	Process	Clean Room: Change Filter Strategy	employee	New	16.80	15	\$0.12	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Process	Clean Room: Chiller Optimize	employee	New	22.20	15	\$2.06	0%	0%	\$0.01	0.00	0.17	7th Power Plan
Stone Clay Glass Products	Process	Clean Room: Clean Room HVAC	employee	New	13.47	15	\$2.48	0%	0%	\$0.02	0.00	0.03	7th Power Plan
Stone Clay Glass Products	Process	Elec Chip Fab: Solidstate Chiller	employee	New	13.47	15	\$7.79	0%	0%	\$0.06	0.00	0.01	7th Power Plan
Stone Clay Glass Products	Process	Elec Chip Fab: Eliminate Exhaust	employee	New	2.10	15	\$0.45	0%	0%	\$0.02	0.00	0.02	7th Power Plan
Stone Clay Glass Products	Process	Elec Chip Fab: Exhaust Injector	employee	New	4.20	15	\$2.15	0%	0%	\$0.06	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Process	Elec Chip Fab: Reduce Gas Pressure	employee	New	4.20	15	\$0.04	0%	0%	\$0.00	0.00	0.02	7th Power Plan
Stone Clay Glass Products	Motors	Panel: Hydraulic Press	employee	New	1,276.57	10	\$295.84	0%	0%	\$0.03	0.00	0.17	7th Power Plan
Stone Clay Glass Products	Motors	Wood: Replace Pneumatic Conveyor	employee	New	1,343.90	10	\$22.16	0%	0%	\$0.00	0.00	0.09	7th Power Plan
Stone Clay Glass Products	Process	Metal: New Arc Furnace	employee	New	1,097.35	10	\$115.28	0%	0%	\$0.01	0.00	0.09	7th Power Plan
Stone Clay Glass Products	Process	Paper: Premium Control Large Material	employee	New	122.69	10	\$61.45	0%	0%	\$0.07	0.00	0.01	7th Power Plan

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Stone Clay Glass Products	Process	Paper: Efficient Pulp Screen	employee	New	98.32	10	\$20.24	0%	0%	\$0.03	0.00	0.24	7th Power Plan
Stone Clay Glass Products	Process	Kraft: Effluent Treatment System	employee	New	98.32	10	\$8.30	0%	0%	\$0.01	0.00	2.17	7th Power Plan
Stone Clay Glass Products	Motors	Kraft: Efficient Agitator	employee	New	2,310.30	10	\$220.76	0%	0%	\$0.01	0.00	0.18	7th Power Plan
Stone Clay Glass Products	Process	Mech Pulp: Premium Process	employee	New	1.10	5	\$0.14	0%	0%	\$0.03	0.00	0.12	7th Power Plan
Stone Clay Glass Products	Motors	Mech Pulp: Refiner Plate Improvement	employee	New	19.91	1	\$0.84	0%	0%	\$0.04	0.00	0.54	7th Power Plan
Stone Clay Glass Products	Cooling	Transformer - High Efficiency	employee	New	13.54	10	\$24.04	15%	15%	\$0.02	0.00	0.09	7th Power Plan
Stone Clay Glass Products	Heating	Transformer - High Efficiency	employee	New	27.40	10	\$24.04	15%	15%	\$0.02	0.00	0.74	7th Power Plan
Stone Clay Glass Products	Ventilation	Transformer - High Efficiency	employee	New	1.08	10	\$24.04	15%	15%	\$0.02	0.00	1.01	7th Power Plan
Stone Clay Glass Products	Interior Lighting	Transformer - High Efficiency	employee	New	4.82	10	\$24.04	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Exterior Lighting	Transformer - High Efficiency	employee	New	1.07	10	\$24.04	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Motors	Transformer - High Efficiency	employee	New	98.51	10	\$24.04	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Process	Transformer - High Efficiency	employee	New	49.13	10	\$24.04	15%	15%	\$0.02	0.00	0.14	7th Power Plan
Stone Clay Glass Products	Miscellaneous	Transformer - High Efficiency	employee	New	8.49	10	\$24.04	15%	15%	\$0.02	0.00	0.14	7th Power Plan
Stone Clay Glass Products	Cooling	Strategic Energy Management	employee	New	38.39	3	\$147.66	0%	0%	\$0.08	0.00	0.18	AEG Research
Stone Clay Glass Products	Heating	Strategic Energy Management	employee	New	78.72	3	\$147.66	0%	0%	\$0.08	0.00	0.26	AEG Research
Stone Clay Glass Products	Ventilation	Strategic Energy Management	employee	New	3.11	3	\$147.66	0%	0%	\$0.08	0.00	0.17	AEG Research
Stone Clay Glass Products	Interior Lighting	Strategic Energy Management	employee	New	13.87	3	\$147.66	0%	0%	\$0.08	0.00	0.00	AEG Research
Stone Clay Glass Products	Exterior Lighting	Strategic Energy Management	employee	New	3.08	3	\$147.66	0%	0%	\$0.08	0.00	0.00	AEG Research
Stone Clay Glass Products	Motors	Strategic Energy Management	employee	New	284.58	3	\$147.66	0%	0%	\$0.08	0.00	0.00	AEG Research

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Stone Clay Glass Products	Process	Strategic Energy Management	employee	New	141.95	3	\$147.66	0%	0%	\$0.08	0.00	0.05	AEG Research
Stone Clay Glass Products	Miscellaneous	Strategic Energy Management	employee	New	24.53	3	\$147.66	0%	0%	\$0.08	0.00	0.08	AEG Research
Stone Clay Glass Products	Interior Lighting	Commissioning	employee	New	16.01	3	\$248.23	10%	40%	\$0.15	0.00	0.47	AEG Research
Stone Clay Glass Products	Exterior Lighting	Commissioning	employee	New	3.56	3	\$248.23	10%	40%	\$0.15	0.00	0.34	AEG Research
Stone Clay Glass Products	Motors	Commissioning	employee	New	328.36	3	\$248.23	10%	40%	\$0.15	0.02	0.34	AEG Research
Stone Clay Glass Products	Process	Commissioning	employee	New	163.78	3	\$248.23	10%	40%	\$0.15	0.01	0.59	AEG Research
Stone Clay Glass Products	Miscellaneous	Commissioning	employee	New	28.30	3	\$248.23	10%	40%	\$0.15	0.00	0.69	AEG Research
Stone Clay Glass Products	Interior Lighting	Retrocommissioning	employee	New	16.07	3	\$157.58	0%	0%	\$0.09	0.00	1.03	AEG Research
Stone Clay Glass Products	Exterior Lighting	Retrocommissioning	employee	New	3.56	3	\$157.58	0%	0%	\$0.09	0.00	1.98	AEG Research
Stone Clay Glass Products	Motors	Retrocommissioning	employee	New	328.36	3	\$157.58	0%	0%	\$0.09	0.00	0.00	AEG Research
Stone Clay Glass Products	Process	Retrocommissioning	employee	New	163.78	3	\$157.58	0%	0%	\$0.09	0.00	0.00	AEG Research
Stone Clay Glass Products	Miscellaneous	Retrocommissioning	employee	New	28.30	3	\$157.58	0%	0%	\$0.09	0.00	0.37	AEG Research
Stone Clay Glass Products	Motors	Municipal Sewage Treatment	employee	New	20.80	12	\$11.37	0%	0%	\$0.07	0.00	1.91	7th Power Plan
Stone Clay Glass Products	Motors	Municipal Water Supply Treatment	employee	New	0.00	12	\$0.00	0%	0%	\$0.00	0.00	0.46	7th Power Plan
Transportation Equipment Mfg	Cooling	Insulation - Ceiling	sqft	Existing	0.13	45	\$1.28	15%	25%	\$0.14	0.03	0.00	Building Energy Simulation Tool
Transportation Equipment Mfg	Heating	Insulation - Ceiling	sqft	Existing	0.52	45	\$1.28	15%	25%	\$0.14	0.12	0.00	Building Energy Simulation Tool
Transportation Equipment Mfg	Ventilation	Insulation - Ceiling	sqft	Existing	0.02	45	\$1.28	15%	25%	\$0.14	0.02	0.01	Building Energy Simulation Tool
Transportation Equipment Mfg	Cooling	Insulation - Ducting	sqft	Existing	0.05	20	\$0.84	15%	25%	\$1.01	0.01	0.05	Building Energy Simulation Tool
Transportation Equipment Mfg	Heating	Insulation - Ducting	sqft	Existing	0.02	20	\$0.84	15%	25%	\$1.01	0.00	0.01	Building Energy Simulation Tool

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Transportation Equipment Mfg	Ventilation	Insulation - Ducting	sqft	Existing	0.00	20	\$0.84	15%	25%	\$1.01	0.00	0.00	Building Energy Simulation Tool
Transportation Equipment Mfg	Cooling	Insulation - Wall Cavity	sqft	Existing	0.00	45	\$0.15	45%	50%	\$0.02	0.00	0.00	Building Energy Simulation Tool
Transportation Equipment Mfg	Heating	Insulation - Wall Cavity	sqft	Existing	0.76	45	\$0.15	45%	50%	\$0.02	0.09	0.00	Building Energy Simulation Tool
Transportation Equipment Mfg	Ventilation	Insulation - Wall Cavity	sqft	Existing	0.02	45	\$0.15	45%	50%	\$0.02	0.01	0.00	Building Energy Simulation Tool
Transportation Equipment Mfg	Cooling	HVAC - Duct Repair and Sealing	sqft	Existing	0.02	18	\$0.00	15%	25%	\$0.00	0.00	0.04	Building Energy Simulation Tool
Transportation Equipment Mfg	Heating	HVAC - Duct Repair and Sealing	sqft	Existing	0.05	18	\$0.00	15%	25%	\$0.00	0.01	0.00	Building Energy Simulation Tool
Transportation Equipment Mfg	Ventilation	HVAC - Duct Repair and Sealing	sqft	Existing	0.00	18	\$0.00	15%	25%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Transportation Equipment Mfg	Cooling	Chiller - Chilled Water Reset	sqft	Existing	0.04	10	\$0.01	15%	45%	\$0.03	0.01	0.00	AEG-BEST
Transportation Equipment Mfg	Cooling	Chiller - Chilled Water Variable-Flow System	sqft	Existing	0.24	15	\$0.50	15%	60%	\$0.21	0.08	0.00	AEG-BEST
Transportation Equipment Mfg	Cooling	Chiller - Variable Speed Fans	sqft	Existing	0.09	15	\$0.03	15%	75%	\$0.04	0.04	0.00	New Jersey TRM
Transportation Equipment Mfg	Cooling	HVAC - Economizer	sqft	Existing	0.13	10	\$0.25	18%	30%	\$0.24	0.04	0.02	AEG-BEST
Transportation Equipment Mfg	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.25	15%	35%	\$10.33	0.01	0.01	7th Power Plan
Transportation Equipment Mfg	Cooling	Destratification Fans (HVLS)	sqft	Existing	0.16	15	\$0.63	15%	50%	\$0.04	0.12	0.01	AEG Research
Transportation Equipment Mfg	Heating	Destratification Fans (HVLS)	sqft	Existing	1.38	15	\$0.63	15%	50%	\$0.04	1.15	0.00	AEG Research
Transportation Equipment Mfg	Cooling	RTU - Maintenance	sqft	Existing	0.08	3	\$0.07	15%	75%	\$0.26	0.09	0.03	AEG Research
Transportation Equipment Mfg	Cooling	Thermostat - WiFi/Interactive	sqft	Existing	0.29	5	\$0.66	5%	15%	\$0.09	0.06	0.27	7th Power Plan
Transportation Equipment Mfg	Heating	Thermostat - WiFi/Interactive	sqft	Existing	1.21	5	\$0.66	5%	15%	\$0.09	0.27	0.01	7th Power Plan
Transportation Equipment Mfg	Ventilation	Thermostat - WiFi/Interactive	sqft	Existing	0.04	5	\$0.66	5%	15%	\$0.09	0.04	0.00	7th Power Plan
Transportation Equipment Mfg	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.15	15	\$0.35	7%	33%	\$0.19	0.37	0.02	7th Power Plan

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Transportation Equipment Mfg	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.21	15	\$0.58	7%	33%	\$0.22	0.49	0.00	7th Power Plan
Transportation Equipment Mfg	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	Existing	0.02	15	\$0.00	1%	2%	\$0.01	0.00	0.20	7th Power Plan
Transportation Equipment Mfg	Interior Lighting	Interior Lighting - Timeclocks and Timers	sqft	Existing	0.00	8	\$0.00	7%	7%	\$0.00	0.00	0.27	SCP Tool Occupancy Hour Reductions.xlsx
Transportation Equipment Mfg	Interior Lighting	Interior Lighting - Skylights	sqft	Existing	0.00	15	\$1.01	15%	23%	\$0.00	0.00	0.00	AEG Research
Transportation Equipment Mfg	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	sqft	Existing	0.03	16	\$1.81	5%	40%	\$3.95	0.06	0.00	7th Power Plan
Transportation Equipment Mfg	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	Existing	0.04	11	\$0.00	15%	50%	\$0.01	0.06	0.00	Illinois TRM
Transportation Equipment Mfg	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	sqft	Existing	0.05	8	\$0.03	15%	25%	\$0.08	0.08	0.02	7th Power Plan
Transportation Equipment Mfg	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	Existing	0.03	8	\$0.02	33%	60%	\$0.08	0.10	0.02	Pacific Gas and Electric Research
Transportation Equipment Mfg	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	Existing	0.03	7	\$1.19	15%	30%	\$4.39	0.07	0.02	AEG Research
Transportation Equipment Mfg	Process	Process - Conductivity Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.01	N/A
Transportation Equipment Mfg	Process	Process - Timers and Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.01	N/A
Transportation Equipment Mfg	Motors	Process - Timers and Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Process	Refrigeration - Floating Head Pressure	employee	Existing	20.56	15	\$20.04	20%	50%	\$0.11	0.07	0.00	RTF Workbook
Transportation Equipment Mfg	Process	Refrigeration - System Optimization	employee	Existing	33.01	15	\$14.11	20%	50%	\$0.05	0.11	0.00	AEG Research
Transportation Equipment Mfg	Motors	Pumping System - Equipment Upgrade	employee	Existing	86.75	10	\$12.71	9%	38%	\$0.05	0.28	0.01	7th Power Plan
Transportation Equipment Mfg	Motors	Pumping System - System Optimization	employee	Existing	64.20	12	\$19.38	9%	38%	\$0.04	0.20	0.01	UNIDO Study on Industrial Energy Efficiency
Transportation Equipment Mfg	Motors	Pumping System - Variable Speed Drive	employee	Existing	63.40	10	\$20.16	9%	38%	\$0.04	0.20	0.06	UNIDO Study on Industrial Energy Efficiency
Transportation Equipment Mfg	Motors	Fan System - Equipment Upgrade	employee	Existing	22.86	10	\$2.29	9%	38%	\$0.04	0.07	0.06	UNIDO Study on Industrial Energy Efficiency
Transportation Equipment Mfg	Motors	Fan System - Flow Optimization	employee	Existing	26.98	10	\$3.79	9%	38%	\$0.02	0.08	0.05	UNIDO Study on Industrial Energy Efficiency

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Transportation Equipment Mfg	Motors	Fan System - Variable Speed Drive	employee	Existing	39.20	10	\$19.07	9%	38%	\$0.06	0.12	0.09	UNIDO Study on Industrial Energy Efficiency
Transportation Equipment Mfg	Motors	Compressed Air - Equipment Upgrade	employee	Existing	158.14	10	\$11.51	17%	50%	\$0.04	0.59	0.11	7th Power Plan
Transportation Equipment Mfg	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	Existing	0.00	15	\$0.00	16%	38%	\$0.00	0.00	0.17	Michigan Energy Measures Database
Transportation Equipment Mfg	Motors	Compressed Air - Refrigerated Cycling Dryers	employee	Existing	0.00	10	\$0.00	16%	30%	\$0.00	0.00	0.24	Michigan Energy Measures Database
Transportation Equipment Mfg	Motors	Compressed Air - System Controls	employee	Existing	34.43	10	\$8.23	9%	38%	\$0.03	0.11	0.00	UNIDO Study on Industrial Energy Efficiency
Transportation Equipment Mfg	Motors	Compressed Air - Leak Management Program	employee	Existing	89.12	10	\$8.27	18%	75%	\$0.04	0.57	0.00	7th Power Plan
Transportation Equipment Mfg	Motors	Compressed Air - Variable Speed Drive	employee	Existing	62.56	15	\$50.44	26%	45%	\$0.08	0.13	0.05	UNIDO Study on Industrial Energy Efficiency
Transportation Equipment Mfg	Motors	Compressed Air - Low Pressure-Drop Filters	employee	Existing	2.09	10	\$0.78	17%	50%	\$0.05	0.01	0.24	Illinois TRM
Transportation Equipment Mfg	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	Existing	12.99	10	\$2.52	17%	50%	\$0.03	0.05	0.07	UNIDO Study on Industrial Energy Efficiency
Transportation Equipment Mfg	Motors	Compressed Air - Outside Air Intake	employee	Existing	0.00	20	\$0.00	17%	50%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Transportation Equipment Mfg	Motors	Compressed Air - Receiver Capacity Addition	employee	Existing	12.82	15	\$6.94	17%	50%	\$0.06	0.05	0.02	UNIDO Study on Industrial Energy Efficiency
Transportation Equipment Mfg	Motors	Material Handling - Variable Speed Drive	employee	Existing	384.52	10	\$139.40	25%	45%	\$0.05	0.83	0.00	7th Power Plan
Transportation Equipment Mfg	Motors	Motors - Green Rewind (<100 HP)	employee	Existing	5.55	10	\$2.47	10%	50%	\$0.06	0.12	0.03	7th Power Plan
Transportation Equipment Mfg	Motors	Motors - Green Rewind (100 HP+)	employee	Existing	3.17	10	\$0.88	6%	25%	\$0.04	0.03	0.15	7th Power Plan
Transportation Equipment Mfg	Motors	Switch from Belt Drive to Direct Drive	employee	Existing	48.41	12	\$10.84	16%	25%	\$0.03	0.25	0.04	2015-mdu-irp-report---volume-iii.pdf
Transportation Equipment Mfg	Motors	Motors - Synchronous Belts	employee	Existing	12.73	10	\$3.26	16%	36%	\$0.03	0.14	0.01	7th Power Plan
Transportation Equipment Mfg	Miscellaneous	Agriculture - Engine Block Timer	employee	Existing	333.92	3	\$4.12	0%	0%	\$0.00	0.00	0.09	Vermont TRM
Transportation Equipment Mfg	Motors	Agriculture - Live Stock Waterer	employee	Existing	204.61	10	\$111.96	0%	0%	\$0.07	0.00	0.03	Ontario Power TRM
Transportation Equipment Mfg	Process	Dairy - Milk Precoolers	employee	Existing	137.04	15	\$63.77	0%	0%	\$0.05	0.00	0.00	Ontario Power TRM

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Transportation Equipment Mfg	Process	Clean Room: Change Filter Strategy	employee	Existing	59.81	15	\$0.44	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Process	Clean Room: Chiller Optimize	employee	Existing	40.78	15	\$3.78	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Process	Clean Room: Clean Room HVAC	employee	Existing	24.76	15	\$4.56	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Process	Elec Chip Fab: Solidstate Chiller	employee	Existing	24.67	15	\$14.32	0%	0%	\$0.06	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Process	Elec Chip Fab: Eliminate Exhaust	employee	Existing	7.48	15	\$1.59	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Process	Elec Chip Fab: Exhaust Injector	employee	Existing	14.90	15	\$7.66	0%	0%	\$0.06	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Process	Elec Chip Fab: Reduce Gas Pressure	employee	Existing	14.95	15	\$0.15	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Motors	Panel: Hydraulic Press	employee	Existing	580.55	10	\$139.32	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Motors	Wood: Replace Pneumatic Conveyor	employee	Existing	632.87	10	\$10.43	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Process	Metal: New Arc Furnace	employee	Existing	560.91	10	\$58.88	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Process	Paper: Premium Control Large Material	employee	Existing	84.95	10	\$42.76	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Process	Paper: Efficient Pulp Screen	employee	Existing	68.46	10	\$14.08	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Process	Kraft: Effluent Treatment System	employee	Existing	68.46	10	\$5.77	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Motors	Kraft: Efficient Agitator	employee	Existing	1,061.68	10	\$103.96	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Process	Mech Pulp: Premium Process	employee	Existing	0.76	5	\$0.10	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Motors	Mech Pulp: Refiner Plate Improvement	employee	Existing	8.91	1	\$0.40	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Cooling	Transformer - High Efficiency	employee	Existing	36.17	10	\$26.42	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Heating	Transformer - High Efficiency	employee	Existing	67.96	10	\$26.42	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Ventilation	Transformer - High Efficiency	employee	Existing	3.71	10	\$26.42	15%	15%	\$0.02	0.00	0.00	7th Power Plan

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Transportation Equipment Mfg	Interior Lighting	Transformer - High Efficiency	employee	Existing	11.87	10	\$26.42	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Exterior Lighting	Transformer - High Efficiency	employee	Existing	2.48	10	\$26.42	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Motors	Transformer - High Efficiency	employee	Existing	45.98	10	\$26.42	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Process	Transformer - High Efficiency	employee	Existing	34.02	10	\$26.42	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Miscellaneous	Transformer - High Efficiency	employee	Existing	12.64	10	\$26.42	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Cooling	Strategic Energy Management	employee	Existing	99.55	3	\$162.25	0%	5%	\$0.08	0.01	0.00	AEG Research
Transportation Equipment Mfg	Heating	Strategic Energy Management	employee	Existing	192.93	3	\$162.25	0%	5%	\$0.08	0.02	0.00	AEG Research
Transportation Equipment Mfg	Ventilation	Strategic Energy Management	employee	Existing	10.64	3	\$162.25	0%	5%	\$0.08	0.01	0.00	AEG Research
Transportation Equipment Mfg	Interior Lighting	Strategic Energy Management	employee	Existing	32.71	3	\$162.25	0%	5%	\$0.08	0.01	0.00	AEG Research
Transportation Equipment Mfg	Exterior Lighting	Strategic Energy Management	employee	Existing	7.11	3	\$162.25	0%	5%	\$0.08	0.00	0.00	AEG Research
Transportation Equipment Mfg	Motors	Strategic Energy Management	employee	Existing	131.55	3	\$162.25	0%	5%	\$0.08	0.07	0.00	AEG Research
Transportation Equipment Mfg	Process	Strategic Energy Management	employee	Existing	97.30	3	\$162.25	0%	5%	\$0.08	0.05	0.00	AEG Research
Transportation Equipment Mfg	Miscellaneous	Strategic Energy Management	employee	Existing	36.11	3	\$162.25	0%	5%	\$0.08	0.02	0.00	AEG Research
Transportation Equipment Mfg	Interior Lighting	Commissioning	employee	Existing	37.70	3	\$160.81	0%	0%	\$0.14	0.00	0.00	AEG Research
Transportation Equipment Mfg	Exterior Lighting	Commissioning	employee	Existing	8.20	3	\$160.81	0%	0%	\$0.14	0.00	0.00	AEG Research
Transportation Equipment Mfg	Motors	Commissioning	employee	Existing	151.60	3	\$160.81	0%	0%	\$0.14	0.00	0.00	AEG Research
Transportation Equipment Mfg	Process	Commissioning	employee	Existing	112.13	3	\$160.81	0%	0%	\$0.14	0.00	0.00	AEG Research
Transportation Equipment Mfg	Miscellaneous	Commissioning	employee	Existing	41.61	3	\$160.81	0%	0%	\$0.14	0.00	0.02	AEG Research
Transportation Equipment Mfg	Interior Lighting	Retrocommissioning	employee	Existing	38.31	3	\$102.09	5%	39%	\$0.09	0.11	0.01	AEG Research

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Transportation Equipment Mfg	Exterior Lighting	Retrocommissioning	employee	Existing	8.28	3	\$102.09	5%	39%	\$0.09	0.02	0.00	AEG Research
Transportation Equipment Mfg	Motors	Retrocommissioning	employee	Existing	153.28	3	\$102.09	5%	39%	\$0.09	0.53	0.00	AEG Research
Transportation Equipment Mfg	Process	Retrocommissioning	employee	Existing	113.40	3	\$102.09	5%	39%	\$0.09	0.40	0.00	AEG Research
Transportation Equipment Mfg	Miscellaneous	Retrocommissioning	employee	Existing	42.13	3	\$102.09	5%	39%	\$0.09	0.19	0.00	AEG Research
Transportation Equipment Mfg	Motors	Municipal Sewage Treatment	employee	Existing	11.12	12	\$6.39	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Motors	Municipal Water Supply Treatment	employee	Existing	0.00	12	\$0.00	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Cooling	Insulation - Ceiling	sqft	New	0.12	45	\$1.28	15%	25%	\$0.15	0.01	0.00	Building Energy Simulation Tool
Transportation Equipment Mfg	Heating	Insulation - Ceiling	sqft	New	0.51	45	\$1.28	15%	25%	\$0.15	0.03	0.00	Building Energy Simulation Tool
Transportation Equipment Mfg	Ventilation	Insulation - Ceiling	sqft	New	0.01	45	\$1.28	15%	25%	\$0.15	0.00	0.73	Building Energy Simulation Tool
Transportation Equipment Mfg	Cooling	Insulation - Ducting	sqft	New	0.04	20	\$0.84	15%	25%	\$1.09	0.00	3.26	Building Energy Simulation Tool
Transportation Equipment Mfg	Heating	Insulation - Ducting	sqft	New	0.02	20	\$0.84	15%	25%	\$1.09	0.00	0.54	Building Energy Simulation Tool
Transportation Equipment Mfg	Ventilation	Insulation - Ducting	sqft	New	0.00	20	\$0.84	15%	25%	\$1.09	0.00	0.28	Building Energy Simulation Tool
Transportation Equipment Mfg	Cooling	Insulation - Wall Cavity	sqft	New	0.00	45	\$0.15	45%	50%	\$0.02	0.00	0.14	Building Energy Simulation Tool
Transportation Equipment Mfg	Heating	Insulation - Wall Cavity	sqft	New	0.71	45	\$0.15	45%	50%	\$0.02	0.02	0.02	Building Energy Simulation Tool
Transportation Equipment Mfg	Ventilation	Insulation - Wall Cavity	sqft	New	0.01	45	\$0.15	45%	50%	\$0.02	0.00	0.01	Building Energy Simulation Tool
Transportation Equipment Mfg	Cooling	HVAC - Duct Repair and Sealing	sqft	New	0.01	18	\$0.00	15%	25%	\$0.00	0.00	2.35	Building Energy Simulation Tool
Transportation Equipment Mfg	Heating	HVAC - Duct Repair and Sealing	sqft	New	0.05	18	\$0.00	15%	25%	\$0.00	0.00	0.36	Building Energy Simulation Tool
Transportation Equipment Mfg	Ventilation	HVAC - Duct Repair and Sealing	sqft	New	0.00	18	\$0.00	15%	25%	\$0.00	0.00	0.10	Building Energy Simulation Tool
Transportation Equipment Mfg	Cooling	Chiller - Chilled Water Reset	sqft	New	0.04	10	\$0.01	15%	45%	\$0.03	0.00	0.33	AEG-BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Transportation Equipment Mfg	Cooling	Chiller - Chilled Water Variable-Flow System	sqft	New	0.20	15	\$0.50	15%	60%	\$0.25	0.01	0.05	AEG-BEST
Transportation Equipment Mfg	Cooling	Chiller - Variable Speed Fans	sqft	New	0.07	15	\$0.03	15%	75%	\$0.04	0.01	0.30	New Jersey TRM
Transportation Equipment Mfg	Cooling	HVAC - Economizer	sqft	New	0.12	10	\$0.25	18%	30%	\$0.26	0.01	2.46	AEG-BEST
Transportation Equipment Mfg	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.25	15%	35%	\$12.05	0.00	1.22	7th Power Plan
Transportation Equipment Mfg	Cooling	Destratification Fans (HVLS)	sqft	New	0.15	15	\$0.63	15%	50%	\$0.05	0.02	1.31	AEG Research
Transportation Equipment Mfg	Heating	Destratification Fans (HVLS)	sqft	New	1.30	15	\$0.63	15%	50%	\$0.05	0.19	0.19	AEG Research
Transportation Equipment Mfg	Cooling	RTU - Maintenance	sqft	New	0.08	3	\$0.07	15%	75%	\$0.27	0.01	3.48	AEG Research
Transportation Equipment Mfg	Cooling	Thermostat - WiFi/Interactive	sqft	New	0.27	5	\$0.66	5%	15%	\$0.09	0.00	30.94	7th Power Plan
Transportation Equipment Mfg	Heating	Thermostat - WiFi/Interactive	sqft	New	1.20	5	\$0.66	5%	15%	\$0.09	0.01	2.62	7th Power Plan
Transportation Equipment Mfg	Ventilation	Thermostat - WiFi/Interactive	sqft	New	0.03	5	\$0.66	5%	15%	\$0.09	0.00	1.71	7th Power Plan
Transportation Equipment Mfg	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.14	15	\$0.35	22%	41%	\$0.19	0.12	7.66	7th Power Plan
Transportation Equipment Mfg	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.19	15	\$0.58	22%	41%	\$0.22	0.16	1.28	7th Power Plan
Transportation Equipment Mfg	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	New	0.02	15	\$0.00	1%	2%	\$0.01	0.00	24.97	7th Power Plan
Transportation Equipment Mfg	Interior Lighting	Interior Lighting - Timeclocks and Timers	sqft	New	0.00	8	\$0.00	7%	7%	\$0.00	0.00	34.17	SCP Tool Occupancy Hour Reductions.xlsx
Transportation Equipment Mfg	Interior Lighting	Interior Lighting - Skylights	sqft	New	0.00	15	\$1.01	18%	24%	\$0.00	0.00	0.15	AEG Research
Transportation Equipment Mfg	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	sqft	New	0.03	16	\$1.81	5%	40%	\$3.94	0.01	0.00	7th Power Plan
Transportation Equipment Mfg	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	New	0.03	11	\$0.00	15%	50%	\$0.01	0.01	0.00	Illinois TRM
Transportation Equipment Mfg	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	sqft	New	0.05	8	\$0.03	15%	25%	\$0.08	0.01	4.78	7th Power Plan
Transportation Equipment Mfg	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	New	0.02	8	\$0.02	44%	60%	\$0.08	0.01	4.80	Pacific Gas and Electric Research

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Transportation Equipment Mfg	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	New	0.03	7	\$1.19	15%	30%	\$4.34	0.01	6.18	AEG Research
Transportation Equipment Mfg	Process	Process - Conductivity Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	8.82	N/A
Transportation Equipment Mfg	Process	Process - Timers and Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	5.83	N/A
Transportation Equipment Mfg	Motors	Process - Timers and Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Process	Refrigeration - Floating Head Pressure	employee	New	20.59	15	\$14.16	20%	50%	\$0.07	0.01	0.00	RTF Workbook
Transportation Equipment Mfg	Process	Refrigeration - System Optimization	employee	New	33.01	15	\$4.95	20%	50%	\$0.02	0.02	0.00	AEG Research
Transportation Equipment Mfg	Motors	Pumping System - Equipment Upgrade	employee	New	88.08	10	\$12.71	9%	38%	\$0.05	0.05	1.62	7th Power Plan
Transportation Equipment Mfg	Motors	Pumping System - System Optimization	employee	New	65.59	12	\$19.38	9%	38%	\$0.04	0.05	2.60	UNIDO Study on Industrial Energy Efficiency
Transportation Equipment Mfg	Motors	Pumping System - Variable Speed Drive	employee	New	65.15	10	\$20.16	9%	38%	\$0.04	0.04	63.78	UNIDO Study on Industrial Energy Efficiency
Transportation Equipment Mfg	Motors	Fan System - Equipment Upgrade	employee	New	23.18	10	\$2.29	9%	38%	\$0.04	0.01	45.33	UNIDO Study on Industrial Energy Efficiency
Transportation Equipment Mfg	Motors	Fan System - Flow Optimization	employee	New	27.37	10	\$3.79	9%	38%	\$0.02	0.02	45.04	UNIDO Study on Industrial Energy Efficiency
Transportation Equipment Mfg	Motors	Fan System - Variable Speed Drive	employee	New	40.80	10	\$19.07	9%	38%	\$0.06	0.03	24.78	UNIDO Study on Industrial Energy Efficiency
Transportation Equipment Mfg	Motors	Compressed Air - Equipment Upgrade	employee	New	158.14	10	\$11.51	17%	50%	\$0.04	0.10	29.24	7th Power Plan
Transportation Equipment Mfg	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	New	0.00	15	\$0.00	16%	38%	\$0.00	0.00	43.49	Michigan Energy Measures Database
Transportation Equipment Mfg	Motors	Compressed Air - Refrigerated Cycling Dryers	employee	New	0.00	10	\$0.00	16%	30%	\$0.00	0.00	49.77	Michigan Energy Measures Database
Transportation Equipment Mfg	Motors	Compressed Air - System Controls	employee	New	35.24	10	\$8.23	9%	38%	\$0.03	0.02	0.00	UNIDO Study on Industrial Energy Efficiency
Transportation Equipment Mfg	Motors	Compressed Air - Leak Management Program	employee	New	89.75	10	\$8.27	18%	75%	\$0.04	0.09	0.00	7th Power Plan
Transportation Equipment Mfg	Motors	Compressed Air - Variable Speed Drive	employee	New	64.94	15	\$50.44	26%	45%	\$0.08	0.03	9.59	UNIDO Study on Industrial Energy Efficiency
Transportation Equipment Mfg	Motors	Compressed Air - Low Pressure-Drop Filters	employee	New	2.16	10	\$0.78	17%	50%	\$0.05	0.00	48.61	Illinois TRM

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Transportation Equipment Mfg	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	New	13.26	10	\$2.52	17%	50%	\$0.03	0.01	11.83	UNIDO Study on Industrial Energy Efficiency
Transportation Equipment Mfg	Motors	Compressed Air - Outside Air Intake	employee	New	0.00	20	\$0.00	17%	50%	\$0.00	0.00	0.69	Michigan Energy Measures Database
Transportation Equipment Mfg	Motors	Compressed Air - Receiver Capacity Addition	employee	New	13.18	15	\$6.94	17%	50%	\$0.06	0.01	4.21	UNIDO Study on Industrial Energy Efficiency
Transportation Equipment Mfg	Motors	Material Handling - Variable Speed Drive	employee	New	395.86	10	\$139.40	25%	45%	\$0.05	0.17	0.00	7th Power Plan
Transportation Equipment Mfg	Motors	Motors - Green Rewind (<100 HP)	employee	New	5.77	10	\$2.47	10%	50%	\$0.06	0.02	4.19	7th Power Plan
Transportation Equipment Mfg	Motors	Motors - Green Rewind (100 HP+)	employee	New	3.26	10	\$0.88	6%	25%	\$0.04	0.01	200.74	7th Power Plan
Transportation Equipment Mfg	Motors	Switch from Belt Drive to Direct Drive	employee	New	49.32	12	\$10.84	16%	25%	\$0.03	0.06	27.23	2015-mdu-irp-report---volume-iii.pdf
Transportation Equipment Mfg	Motors	Motors - Synchronous Belts	employee	New	13.05	10	\$3.26	16%	36%	\$0.03	0.02	7.31	7th Power Plan
Transportation Equipment Mfg	Miscellaneous	Agriculture - Engine Block Timer	employee	New	333.92	3	\$4.12	0%	0%	\$0.00	0.00	55.31	Vermont TRM
Transportation Equipment Mfg	Motors	Agriculture - Live Stock Waterer	employee	New	213.22	10	\$111.96	0%	0%	\$0.07	0.00	32.28	Ontario Power TRM
Transportation Equipment Mfg	Process	Dairy - Milk Precoolers	employee	New	137.28	15	\$63.77	0%	0%	\$0.05	0.00	0.00	Ontario Power TRM
Transportation Equipment Mfg	Process	Clean Room: Change Filter Strategy	employee	New	59.81	15	\$0.44	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Process	Clean Room: Chiller Optimize	employee	New	40.78	15	\$3.78	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Process	Clean Room: Clean Room HVAC	employee	New	24.71	15	\$4.56	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Process	Elec Chip Fab: Solidstate Chiller	employee	New	24.71	15	\$14.32	0%	0%	\$0.06	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Process	Elec Chip Fab: Eliminate Exhaust	employee	New	7.46	15	\$1.59	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Process	Elec Chip Fab: Exhaust Injector	employee	New	14.92	15	\$7.66	0%	0%	\$0.06	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Process	Elec Chip Fab: Reduce Gas Pressure	employee	New	14.95	15	\$0.15	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Motors	Panel: Hydraulic Press	employee	New	595.80	10	\$139.32	0%	0%	\$0.03	0.00	0.00	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Transportation Equipment Mfg	Motors	Wood: Replace Pneumatic Conveyor	employee	New	632.87	10	\$10.43	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Process	Metal: New Arc Furnace	employee	New	559.76	10	\$58.88	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Process	Paper: Premium Control Large Material	employee	New	85.19	10	\$42.76	0%	0%	\$0.07	0.00	1,017.58	7th Power Plan
Transportation Equipment Mfg	Process	Paper: Efficient Pulp Screen	employee	New	68.32	10	\$14.08	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Process	Kraft: Effluent Treatment System	employee	New	68.32	10	\$5.77	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Motors	Kraft: Efficient Agitator	employee	New	1,076.45	10	\$103.96	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Process	Mech Pulp: Premium Process	employee	New	0.76	5	\$0.10	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Motors	Mech Pulp: Refiner Plate Improvement	employee	New	9.29	1	\$0.40	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Cooling	Transformer - High Efficiency	employee	New	33.27	10	\$25.50	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Heating	Transformer - High Efficiency	employee	New	67.17	10	\$25.50	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Ventilation	Transformer - High Efficiency	employee	New	2.67	10	\$25.50	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Interior Lighting	Transformer - High Efficiency	employee	New	10.89	10	\$25.50	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Exterior Lighting	Transformer - High Efficiency	employee	New	2.34	10	\$25.50	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Motors	Transformer - High Efficiency	employee	New	47.92	10	\$25.50	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Process	Transformer - High Efficiency	employee	New	34.12	10	\$25.50	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Miscellaneous	Transformer - High Efficiency	employee	New	11.97	10	\$25.50	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Cooling	Strategic Energy Management	employee	New	94.30	3	\$156.63	0%	5%	\$0.08	0.00	0.00	AEG Research
Transportation Equipment Mfg	Heating	Strategic Energy Management	employee	New	192.98	3	\$156.63	0%	5%	\$0.08	0.00	0.00	AEG Research
Transportation Equipment Mfg	Ventilation	Strategic Energy Management	employee	New	7.70	3	\$156.63	0%	5%	\$0.08	0.00	1.28	AEG Research

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Transportation Equipment Mfg	Interior Lighting	Strategic Energy Management	employee	New	30.42	3	\$156.63	0%	5%	\$0.08	0.00	2.64	AEG Research
Transportation Equipment Mfg	Exterior Lighting	Strategic Energy Management	employee	New	6.77	3	\$156.63	0%	5%	\$0.08	0.00	0.82	AEG Research
Transportation Equipment Mfg	Motors	Strategic Energy Management	employee	New	138.44	3	\$156.63	0%	5%	\$0.08	0.00	4.97	AEG Research
Transportation Equipment Mfg	Process	Strategic Energy Management	employee	New	98.56	3	\$156.63	0%	5%	\$0.08	0.00	1.11	AEG Research
Transportation Equipment Mfg	Miscellaneous	Strategic Energy Management	employee	New	34.58	3	\$156.63	0%	5%	\$0.08	0.00	71.47	AEG Research
Transportation Equipment Mfg	Interior Lighting	Commissioning	employee	New	35.09	3	\$162.53	5%	39%	\$0.14	0.00	12.11	AEG Research
Transportation Equipment Mfg	Exterior Lighting	Commissioning	employee	New	7.81	3	\$162.53	5%	39%	\$0.14	0.00	7.46	AEG Research
Transportation Equipment Mfg	Motors	Commissioning	employee	New	159.69	3	\$162.53	5%	39%	\$0.14	0.01	0.00	AEG Research
Transportation Equipment Mfg	Process	Commissioning	employee	New	113.69	3	\$162.53	5%	39%	\$0.14	0.01	0.00	AEG Research
Transportation Equipment Mfg	Miscellaneous	Commissioning	employee	New	39.89	3	\$162.53	5%	39%	\$0.14	0.00	0.00	AEG Research
Transportation Equipment Mfg	Interior Lighting	Retrocommissioning	employee	New	35.23	3	\$103.18	0%	0%	\$0.09	0.00	0.00	AEG Research
Transportation Equipment Mfg	Exterior Lighting	Retrocommissioning	employee	New	7.81	3	\$103.18	0%	0%	\$0.09	0.00	0.00	AEG Research
Transportation Equipment Mfg	Motors	Retrocommissioning	employee	New	159.73	3	\$103.18	0%	0%	\$0.09	0.00	6.03	AEG Research
Transportation Equipment Mfg	Process	Retrocommissioning	employee	New	113.72	3	\$103.18	0%	0%	\$0.09	0.00	1.34	AEG Research
Transportation Equipment Mfg	Miscellaneous	Retrocommissioning	employee	New	39.90	3	\$103.18	0%	0%	\$0.09	0.00	86.38	AEG Research
Transportation Equipment Mfg	Motors	Municipal Sewage Treatment	employee	New	11.56	12	\$6.39	0%	0%	\$0.07	0.00	14.64	7th Power Plan
Transportation Equipment Mfg	Motors	Municipal Water Supply Treatment	employee	New	0.00	12	\$0.00	0%	0%	\$0.00	0.00	9.02	7th Power Plan
Wastewater	Cooling	Insulation - Ceiling	sqft	Existing	0.13	45	\$1.28	15%	25%	\$0.14	0.07	0.00	Building Energy Simulation Tool
Wastewater	Heating	Insulation - Ceiling	sqft	Existing	0.52	45	\$1.28	15%	25%	\$0.14	0.31	0.52	Building Energy Simulation Tool

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Wastewater	Ventilation	Insulation - Ceiling	sqft	Existing	0.02	45	\$1.28	15%	25%	\$0.14	0.05	27.89	Building Energy Simulation Tool
Wastewater	Cooling	Insulation - Ducting	sqft	Existing	0.05	20	\$0.84	15%	25%	\$1.01	0.03	3.80	Building Energy Simulation Tool
Wastewater	Heating	Insulation - Ducting	sqft	Existing	0.02	20	\$0.84	15%	25%	\$1.01	0.01	1.01	Building Energy Simulation Tool
Wastewater	Ventilation	Insulation - Ducting	sqft	Existing	0.00	20	\$0.84	15%	25%	\$1.01	0.00	8.41	Building Energy Simulation Tool
Wastewater	Cooling	Insulation - Wall Cavity	sqft	Existing	0.00	45	\$0.15	45%	50%	\$0.02	0.00	3.18	Building Energy Simulation Tool
Wastewater	Heating	Insulation - Wall Cavity	sqft	Existing	0.76	45	\$0.15	45%	50%	\$0.02	0.24	0.00	Building Energy Simulation Tool
Wastewater	Ventilation	Insulation - Wall Cavity	sqft	Existing	0.02	45	\$0.15	45%	50%	\$0.02	0.03	0.00	Building Energy Simulation Tool
Wastewater	Cooling	HVAC - Duct Repair and Sealing	sqft	Existing	0.02	18	\$0.00	15%	25%	\$0.00	0.01	0.00	Building Energy Simulation Tool
Wastewater	Heating	HVAC - Duct Repair and Sealing	sqft	Existing	0.05	18	\$0.00	15%	25%	\$0.00	0.03	0.00	Building Energy Simulation Tool
Wastewater	Ventilation	HVAC - Duct Repair and Sealing	sqft	Existing	0.00	18	\$0.00	15%	25%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Wastewater	Cooling	Chiller - Chilled Water Reset	sqft	Existing	0.04	10	\$0.01	15%	45%	\$0.03	0.03	0.00	AEG-BEST
Wastewater	Cooling	Chiller - Chilled Water Variable-Flow System	sqft	Existing	0.24	15	\$0.50	15%	60%	\$0.21	0.23	0.00	AEG-BEST
Wastewater	Cooling	Chiller - Variable Speed Fans	sqft	Existing	0.09	15	\$0.03	15%	75%	\$0.04	0.11	0.00	New Jersey TRM
Wastewater	Cooling	HVAC - Economizer	sqft	Existing	0.17	10	\$0.25	18%	30%	\$0.18	0.12	0.00	AEG-BEST
Wastewater	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.25	15%	35%	\$10.33	0.01	0.00	7th Power Plan
Wastewater	Cooling	Destratification Fans (HVLS)	sqft	Existing	0.16	15	\$0.63	15%	50%	\$0.04	0.33	0.00	AEG Research
Wastewater	Heating	Destratification Fans (HVLS)	sqft	Existing	1.38	15	\$0.63	15%	50%	\$0.04	3.11	137.74	AEG Research
Wastewater	Cooling	RTU - Maintenance	sqft	Existing	0.08	3	\$0.07	15%	75%	\$0.26	0.23	0.00	AEG Research
Wastewater	Cooling	Thermostat - WiFi/Interactive	sqft	Existing	0.29	5	\$0.66	5%	15%	\$0.09	0.16	0.00	7th Power Plan
Wastewater	Heating	Thermostat - WiFi/Interactive	sqft	Existing	1.21	5	\$0.66	5%	15%	\$0.09	0.73	0.00	7th Power Plan
Wastewater	Ventilation	Thermostat - WiFi/Interactive	sqft	Existing	0.04	5	\$0.66	5%	15%	\$0.09	0.11	0.00	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Wastewater	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.20	15	\$0.35	7%	33%	\$0.14	1.28	0.00	7th Power Plan
Wastewater	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.28	15	\$0.58	7%	33%	\$0.17	1.70	0.00	7th Power Plan
Wastewater	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	Existing	0.02	15	\$0.00	1%	2%	\$0.01	0.01	0.00	7th Power Plan
Wastewater	Interior Lighting	Interior Lighting - Timeclocks and Timers	sqft	Existing	0.00	8	\$0.00	7%	7%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Wastewater	Interior Lighting	Interior Lighting - Skylights	sqft	Existing	0.00	15	\$1.01	15%	23%	\$0.00	0.00	0.00	AEG Research
Wastewater	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	sqft	Existing	0.03	16	\$1.81	5%	40%	\$3.95	0.19	0.00	7th Power Plan
Wastewater	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	Existing	0.04	11	\$0.00	15%	50%	\$0.01	0.22	0.00	Illinois TRM
Wastewater	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	sqft	Existing	0.05	8	\$0.03	15%	25%	\$0.08	0.26	0.00	7th Power Plan
Wastewater	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	Existing	0.03	8	\$0.02	33%	60%	\$0.08	0.36	0.00	Pacific Gas and Electric Research
Wastewater	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	Existing	0.03	7	\$1.19	15%	30%	\$4.39	0.23	0.00	AEG Research
Wastewater	Process	Process - Conductivity Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Wastewater	Process	Process - Timers and Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.01	N/A
Wastewater	Motors	Process - Timers and Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.03	N/A
Wastewater	Process	Refrigeration - Floating Head Pressure	employee	Existing	0.00	15	\$157.38	20%	50%	\$0.00	0.00	0.01	RTF Workbook
Wastewater	Process	Refrigeration - System Optimization	employee	Existing	0.00	15	\$110.83	20%	50%	\$0.00	0.00	0.06	AEG Research
Wastewater	Motors	Pumping System - Equipment Upgrade	employee	Existing	3,613.93	10	\$533.13	9%	38%	\$0.05	15.02	0.01	7th Power Plan
Wastewater	Motors	Pumping System - System Optimization	employee	Existing	2,660.34	12	\$812.49	9%	38%	\$0.04	10.71	0.90	UNIDO Study on Industrial Energy Efficiency
Wastewater	Motors	Pumping System - Variable Speed Drive	employee	Existing	2,625.47	10	\$845.30	9%	38%	\$0.04	10.52	0.14	UNIDO Study on Industrial Energy Efficiency
Wastewater	Motors	Fan System - Equipment Upgrade	employee	Existing	5,065.50	10	\$495.03	9%	38%	\$0.04	20.77	0.06	UNIDO Study on Industrial Energy Efficiency

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Wastewater	Motors	Fan System - Flow Optimization	employee	Existing	5,892.37	10	\$819.05	9%	38%	\$0.02	24.02	0.07	UNIDO Study on Industrial Energy Efficiency
Wastewater	Motors	Fan System - Variable Speed Drive	employee	Existing	8,494.21	10	\$4,121.39	9%	38%	\$0.06	33.84	0.02	UNIDO Study on Industrial Energy Efficiency
Wastewater	Motors	Compressed Air - Equipment Upgrade	employee	Existing	345.77	10	\$25.16	17%	50%	\$0.04	1.70	1.08	7th Power Plan
Wastewater	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	Existing	0.00	15	\$0.00	16%	38%	\$0.00	0.00	0.16	Michigan Energy Measures Database
Wastewater	Motors	Compressed Air - Refrigerated Cycling Dryers	employee	Existing	0.00	10	\$0.00	16%	30%	\$0.00	0.00	0.08	Michigan Energy Measures Database
Wastewater	Motors	Compressed Air - System Controls	employee	Existing	74.09	10	\$17.99	9%	38%	\$0.03	0.31	0.00	UNIDO Study on Industrial Energy Efficiency
Wastewater	Motors	Compressed Air - Leak Management Program	employee	Existing	197.31	10	\$18.08	18%	75%	\$0.04	1.66	0.00	7th Power Plan
Wastewater	Motors	Compressed Air - Variable Speed Drive	employee	Existing	136.86	15	\$110.29	26%	45%	\$0.08	0.37	0.00	UNIDO Study on Industrial Energy Efficiency
Wastewater	Motors	Compressed Air - Low Pressure-Drop Filters	employee	Existing	4.56	10	\$1.70	17%	50%	\$0.05	0.02	0.00	Illinois TRM
Wastewater	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	Existing	28.03	10	\$5.51	17%	50%	\$0.03	0.14	0.00	UNIDO Study on Industrial Energy Efficiency
Wastewater	Motors	Compressed Air - Outside Air Intake	employee	Existing	0.00	20	\$0.00	17%	50%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Wastewater	Motors	Compressed Air - Receiver Capacity Addition	employee	Existing	27.68	15	\$15.17	17%	50%	\$0.06	0.13	0.00	UNIDO Study on Industrial Energy Efficiency
Wastewater	Motors	Material Handling - Variable Speed Drive	employee	Existing	764.57	10	\$281.87	25%	45%	\$0.05	2.14	0.11	7th Power Plan
Wastewater	Motors	Motors - Green Rewind (<100 HP)	employee	Existing	119.06	10	\$52.84	10%	50%	\$0.06	3.33	0.49	7th Power Plan
Wastewater	Motors	Motors - Green Rewind (100 HP+)	employee	Existing	66.97	10	\$18.75	6%	25%	\$0.04	0.89	0.08	7th Power Plan
Wastewater	Motors	Switch from Belt Drive to Direct Drive	employee	Existing	1,022.95	12	\$231.94	16%	25%	\$0.03	6.88	0.04	2015-mdu-irp-report---volume-iii.pdf
Wastewater	Motors	Motors - Synchronous Belts	employee	Existing	268.86	10	\$69.78	16%	36%	\$0.03	3.88	0.02	7th Power Plan
Wastewater	Miscellaneous	Agriculture - Engine Block Timer	employee	Existing	1,317.29	3	\$16.25	0%	0%	\$0.00	0.00	0.00	Vermont TRM
Wastewater	Motors	Agriculture - Live Stock Waterer	employee	Existing	8,384.25	10	\$4,695.17	0%	0%	\$0.07	0.00	0.00	Ontario Power TRM

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Wastewater	Process	Dairy - Milk Precoolers	employee	Existing	0.00	15	\$500.81	0%	0%	\$0.00	0.00	0.35	Ontario Power TRM
Wastewater	Process	Clean Room: Change Filter Strategy	employee	Existing	0.00	15	\$6.37	0%	0%	\$0.00	0.00	0.05	7th Power Plan
Wastewater	Process	Clean Room: Chiller Optimize	employee	Existing	0.00	15	\$29.66	0%	0%	\$0.00	0.00	0.01	7th Power Plan
Wastewater	Process	Clean Room: Clean Room HVAC	employee	Existing	0.00	15	\$35.80	0%	0%	\$0.00	0.00	0.05	7th Power Plan
Wastewater	Process	Elec Chip Fab: Solidstate Chiller	employee	Existing	0.00	15	\$112.44	0%	0%	\$0.00	0.00	0.01	7th Power Plan
Wastewater	Process	Elec Chip Fab: Eliminate Exhaust	employee	Existing	0.00	15	\$22.93	0%	0%	\$0.00	0.00	0.05	7th Power Plan
Wastewater	Process	Elec Chip Fab: Exhaust Injector	employee	Existing	0.00	15	\$110.63	0%	0%	\$0.00	0.00	0.37	7th Power Plan
Wastewater	Process	Elec Chip Fab: Reduce Gas Pressure	employee	Existing	0.00	15	\$2.22	0%	0%	\$0.00	0.00	0.18	7th Power Plan
Wastewater	Motors	Panel: Hydraulic Press	employee	Existing	1,157.97	10	\$281.70	0%	0%	\$0.03	0.00	0.20	7th Power Plan
Wastewater	Motors	Wood: Replace Pneumatic Conveyor	employee	Existing	1,279.69	10	\$21.10	0%	0%	\$0.00	0.00	0.03	7th Power Plan
Wastewater	Process	Metal: New Arc Furnace	employee	Existing	0.00	10	\$102.07	0%	0%	\$0.00	0.00	0.53	7th Power Plan
Wastewater	Process	Paper: Premium Control Large Material	employee	Existing	684.82	10	\$342.59	0%	0%	\$0.07	0.00	4.66	7th Power Plan
Wastewater	Process	Paper: Efficient Pulp Screen	employee	Existing	548.52	10	\$112.85	0%	0%	\$0.03	0.00	0.40	7th Power Plan
Wastewater	Process	Kraft: Effluent Treatment System	employee	Existing	548.52	10	\$46.27	0%	0%	\$0.01	0.00	0.26	7th Power Plan
Wastewater	Motors	Kraft: Efficient Agitator	employee	Existing	2,200.23	10	\$210.21	0%	0%	\$0.01	0.00	1.15	7th Power Plan
Wastewater	Process	Mech Pulp: Premium Process	employee	Existing	6.14	5	\$0.79	0%	0%	\$0.03	0.00	0.19	7th Power Plan
Wastewater	Motors	Mech Pulp: Refiner Plate Improvement	employee	Existing	17.61	1	\$0.80	0%	0%	\$0.04	0.00	2.34	7th Power Plan
Wastewater	Cooling	Transformer - High Efficiency	employee	Existing	74.20	10	\$165.41	15%	15%	\$0.02	0.00	3.20	7th Power Plan
Wastewater	Heating	Transformer - High Efficiency	employee	Existing	139.41	10	\$165.41	15%	15%	\$0.02	0.00	0.01	7th Power Plan
Wastewater	Ventilation	Transformer - High Efficiency	employee	Existing	7.62	10	\$165.41	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Wastewater	Interior Lighting	Transformer - High Efficiency	employee	Existing	30.17	10	\$165.41	15%	15%	\$0.02	0.00	0.00	7th Power Plan

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Wastewater	Exterior Lighting	Transformer - High Efficiency	employee	Existing	6.52	10	\$165.41	15%	15%	\$0.02	0.00	0.45	7th Power Plan
Wastewater	Motors	Transformer - High Efficiency	employee	Existing	961.76	10	\$165.41	15%	15%	\$0.02	0.00	0.45	7th Power Plan
Wastewater	Process	Transformer - High Efficiency	employee	Existing	54.85	10	\$165.41	15%	15%	\$0.02	0.00	0.58	7th Power Plan
Wastewater	Miscellaneous	Transformer - High Efficiency	employee	Existing	49.86	10	\$165.41	15%	15%	\$0.02	0.00	0.82	7th Power Plan
Wastewater	Cooling	Strategic Energy Management	employee	Existing	204.21	3	\$1,015.89	0%	5%	\$0.08	0.02	0.54	AEG Research
Wastewater	Heating	Strategic Energy Management	employee	Existing	395.76	3	\$1,015.89	0%	5%	\$0.08	0.05	0.00	AEG Research
Wastewater	Ventilation	Strategic Energy Management	employee	Existing	21.82	3	\$1,015.89	0%	5%	\$0.08	0.01	0.00	AEG Research
Wastewater	Interior Lighting	Strategic Energy Management	employee	Existing	85.86	3	\$1,015.89	0%	5%	\$0.08	0.05	0.00	AEG Research
Wastewater	Exterior Lighting	Strategic Energy Management	employee	Existing	18.67	3	\$1,015.89	0%	5%	\$0.08	0.01	0.29	AEG Research
Wastewater	Motors	Strategic Energy Management	employee	Existing	2,751.55	3	\$1,015.89	0%	5%	\$0.08	1.79	0.46	AEG Research
Wastewater	Process	Strategic Energy Management	employee	Existing	156.88	3	\$1,015.89	0%	5%	\$0.08	0.11	2.92	AEG Research
Wastewater	Miscellaneous	Strategic Energy Management	employee	Existing	142.46	3	\$1,015.89	0%	5%	\$0.08	0.12	2.10	AEG Research
Wastewater	Interior Lighting	Commissioning	employee	Existing	98.96	3	\$1,821.36	0%	0%	\$0.15	0.00	2.08	AEG Research
Wastewater	Exterior Lighting	Commissioning	employee	Existing	21.52	3	\$1,821.36	0%	0%	\$0.15	0.00	0.74	AEG Research
Wastewater	Motors	Commissioning	employee	Existing	3,170.97	3	\$1,821.36	0%	0%	\$0.15	0.00	0.88	AEG Research
Wastewater	Process	Commissioning	employee	Existing	180.78	3	\$1,821.36	0%	0%	\$0.15	0.00	1.30	AEG Research
Wastewater	Miscellaneous	Commissioning	employee	Existing	164.14	3	\$1,821.36	0%	0%	\$0.15	0.00	6.11	AEG Research
Wastewater	Interior Lighting	Retrocommissioning	employee	Existing	100.57	3	\$1,156.24	5%	39%	\$0.10	0.37	0.00	AEG Research
Wastewater	Exterior Lighting	Retrocommissioning	employee	Existing	21.73	3	\$1,156.24	5%	39%	\$0.10	0.08	0.00	AEG Research
Wastewater	Motors	Retrocommissioning	employee	Existing	3,205.87	3	\$1,156.24	5%	39%	\$0.10	14.27	1.17	AEG Research
Wastewater	Process	Retrocommissioning	employee	Existing	182.84	3	\$1,156.24	5%	39%	\$0.10	0.85	5.94	AEG Research
Wastewater	Miscellaneous	Retrocommissioning	employee	Existing	166.19	3	\$1,156.24	5%	39%	\$0.10	0.98	1.44	AEG Research

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Wastewater	Motors	Municipal Sewage Treatment	employee	Existing	467.90	12	\$268.02	15%	35%	\$0.07	1.31	0.08	7th Power Plan
Wastewater	Motors	Municipal Water Supply Treatment	employee	Existing	0.00	12	\$0.00	0%	0%	\$0.00	0.00	0.51	7th Power Plan
Wastewater	Cooling	Insulation - Ceiling	sqft	New	0.11	45	\$1.28	15%	25%	\$0.15	0.02	0.00	Building Energy Simulation Tool
Wastewater	Heating	Insulation - Ceiling	sqft	New	0.51	45	\$1.28	15%	25%	\$0.15	0.09	0.51	Building Energy Simulation Tool
Wastewater	Ventilation	Insulation - Ceiling	sqft	New	0.01	45	\$1.28	15%	25%	\$0.15	0.01	8.89	Building Energy Simulation Tool
Wastewater	Cooling	Insulation - Ducting	sqft	New	0.04	20	\$0.84	15%	25%	\$1.09	0.01	1.29	Building Energy Simulation Tool
Wastewater	Heating	Insulation - Ducting	sqft	New	0.02	20	\$0.84	15%	25%	\$1.09	0.00	0.35	Building Energy Simulation Tool
Wastewater	Ventilation	Insulation - Ducting	sqft	New	0.00	20	\$0.84	15%	25%	\$1.09	0.00	2.64	Building Energy Simulation Tool
Wastewater	Cooling	Insulation - Wall Cavity	sqft	New	0.00	45	\$0.15	45%	50%	\$0.02	0.00	1.51	Building Energy Simulation Tool
Wastewater	Heating	Insulation - Wall Cavity	sqft	New	0.71	45	\$0.15	45%	50%	\$0.02	0.06	0.00	Building Energy Simulation Tool
Wastewater	Ventilation	Insulation - Wall Cavity	sqft	New	0.01	45	\$0.15	45%	50%	\$0.02	0.01	0.00	Building Energy Simulation Tool
Wastewater	Cooling	HVAC - Duct Repair and Sealing	sqft	New	0.01	18	\$0.00	15%	25%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Wastewater	Heating	HVAC - Duct Repair and Sealing	sqft	New	0.05	18	\$0.00	15%	25%	\$0.00	0.01	0.00	Building Energy Simulation Tool
Wastewater	Ventilation	HVAC - Duct Repair and Sealing	sqft	New	0.00	18	\$0.00	15%	25%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Wastewater	Cooling	Chiller - Chilled Water Reset	sqft	New	0.04	10	\$0.01	15%	45%	\$0.03	0.00	0.00	AEG-BEST
Wastewater	Cooling	Chiller - Chilled Water Variable-Flow System	sqft	New	0.20	15	\$0.50	15%	60%	\$0.25	0.04	0.00	AEG-BEST
Wastewater	Cooling	Chiller - Variable Speed Fans	sqft	New	0.07	15	\$0.03	15%	75%	\$0.04	0.02	0.00	New Jersey TRM
Wastewater	Cooling	HVAC - Economizer	sqft	New	0.16	10	\$0.25	18%	30%	\$0.19	0.02	0.00	AEG-BEST
Wastewater	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.25	15%	35%	\$12.05	0.00	0.00	7th Power Plan
Wastewater	Cooling	Destratification Fans (HVLS)	sqft	New	0.15	15	\$0.63	15%	50%	\$0.05	0.05	0.00	AEG Research

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Wastewater	Heating	Destratification Fans (HVLS)	sqft	New	1.30	15	\$0.63	15%	50%	\$0.05	0.46	0.00	AEG Research
Wastewater	Cooling	RTU - Maintenance	sqft	New	0.08	3	\$0.07	15%	75%	\$0.27	0.01	37.66	AEG Research
Wastewater	Cooling	Thermostat - WiFi/Interactive	sqft	New	0.27	5	\$0.66	5%	15%	\$0.09	0.01	0.00	7th Power Plan
Wastewater	Heating	Thermostat - WiFi/Interactive	sqft	New	1.20	5	\$0.66	5%	15%	\$0.09	0.03	0.00	7th Power Plan
Wastewater	Ventilation	Thermostat - WiFi/Interactive	sqft	New	0.02	5	\$0.66	5%	15%	\$0.09	0.00	0.00	7th Power Plan
Wastewater	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.18	15	\$0.35	22%	41%	\$0.14	0.38	0.00	7th Power Plan
Wastewater	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.25	15	\$0.58	22%	41%	\$0.17	0.52	0.00	7th Power Plan
Wastewater	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	New	0.02	15	\$0.00	1%	2%	\$0.01	0.00	0.00	7th Power Plan
Wastewater	Interior Lighting	Interior Lighting - Timeclocks and Timers	sqft	New	0.00	8	\$0.00	7%	7%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Wastewater	Interior Lighting	Interior Lighting - Skylights	sqft	New	0.00	15	\$1.01	18%	24%	\$0.00	0.00	0.00	AEG Research
Wastewater	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	sqft	New	0.03	16	\$1.81	5%	40%	\$3.94	0.04	0.00	7th Power Plan
Wastewater	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	New	0.03	11	\$0.00	15%	50%	\$0.01	0.03	0.00	Illinois TRM
Wastewater	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	sqft	New	0.04	8	\$0.03	15%	25%	\$0.08	0.03	0.00	7th Power Plan
Wastewater	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	New	0.02	8	\$0.02	44%	60%	\$0.08	0.03	0.00	Pacific Gas and Electric Research
Wastewater	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	New	0.03	7	\$1.19	15%	30%	\$4.35	0.03	0.00	AEG Research
Wastewater	Process	Process - Conductivity Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Wastewater	Process	Process - Timers and Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.04	N/A
Wastewater	Motors	Process - Timers and Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.08	N/A
Wastewater	Process	Refrigeration - Floating Head Pressure	employee	New	0.00	15	\$111.23	20%	50%	\$0.00	0.00	0.03	RTF Workbook

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Wastewater	Process	Refrigeration - System Optimization	employee	New	0.00	15	\$38.89	20%	50%	\$0.00	0.00	0.10	AEG Research
Wastewater	Motors	Pumping System - Equipment Upgrade	employee	New	3,676.25	10	\$533.13	9%	38%	\$0.05	2.28	0.02	7th Power Plan
Wastewater	Motors	Pumping System - System Optimization	employee	New	2,731.26	12	\$812.49	9%	38%	\$0.04	2.26	0.72	UNIDO Study on Industrial Energy Efficiency
Wastewater	Motors	Pumping System - Variable Speed Drive	employee	New	2,711.59	10	\$845.30	9%	38%	\$0.04	2.01	0.43	UNIDO Study on Industrial Energy Efficiency
Wastewater	Motors	Fan System - Equipment Upgrade	employee	New	5,072.91	10	\$495.03	9%	38%	\$0.04	3.74	0.09	UNIDO Study on Industrial Energy Efficiency
Wastewater	Motors	Fan System - Flow Optimization	employee	New	5,943.56	10	\$819.05	9%	38%	\$0.02	4.39	0.00	UNIDO Study on Industrial Energy Efficiency
Wastewater	Motors	Fan System - Variable Speed Drive	employee	New	8,829.64	10	\$4,121.39	9%	38%	\$0.06	6.56	0.00	UNIDO Study on Industrial Energy Efficiency
Wastewater	Motors	Compressed Air - Equipment Upgrade	employee	New	345.77	10	\$25.16	17%	50%	\$0.04	0.25	0.00	7th Power Plan
Wastewater	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	New	0.00	15	\$0.00	16%	38%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Wastewater	Motors	Compressed Air - Refrigerated Cycling Dryers	employee	New	0.00	10	\$0.00	16%	30%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Wastewater	Motors	Compressed Air - System Controls	employee	New	76.34	10	\$17.99	9%	38%	\$0.03	0.05	0.77	UNIDO Study on Industrial Energy Efficiency
Wastewater	Motors	Compressed Air - Leak Management Program	employee	New	197.45	10	\$18.08	18%	75%	\$0.04	0.24	0.17	7th Power Plan
Wastewater	Motors	Compressed Air - Variable Speed Drive	employee	New	142.00	15	\$110.29	26%	45%	\$0.08	0.07	5.69	UNIDO Study on Industrial Energy Efficiency
Wastewater	Motors	Compressed Air - Low Pressure-Drop Filters	employee	New	4.73	10	\$1.70	17%	50%	\$0.05	0.00	3.39	Illinois TRM
Wastewater	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	New	28.77	10	\$5.51	17%	50%	\$0.03	0.02	0.73	UNIDO Study on Industrial Energy Efficiency
Wastewater	Motors	Compressed Air - Outside Air Intake	employee	New	0.00	20	\$0.00	17%	50%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Wastewater	Motors	Compressed Air - Receiver Capacity Addition	employee	New	28.57	15	\$15.17	17%	50%	\$0.06	0.03	0.00	UNIDO Study on Industrial Energy Efficiency
Wastewater	Motors	Material Handling - Variable Speed Drive	employee	New	792.68	10	\$281.87	25%	45%	\$0.05	0.41	0.02	7th Power Plan
Wastewater	Motors	Motors - Green Rewind (<100 HP)	employee	New	123.61	10	\$52.84	10%	50%	\$0.06	0.64	0.11	7th Power Plan

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Wastewater	Motors	Motors - Green Rewind (100 HP+)	employee	New	69.15	10	\$18.75	6%	25%	\$0.04	0.17	0.01	7th Power Plan
Wastewater	Motors	Switch from Belt Drive to Direct Drive	employee	New	1,047.72	12	\$231.94	16%	25%	\$0.03	1.45	0.01	2015-mdu-irp-report---volume-iii.pdf
Wastewater	Motors	Motors - Synchronous Belts	employee	New	277.07	10	\$69.78	16%	36%	\$0.03	0.60	0.00	7th Power Plan
Wastewater	Miscellaneous	Agriculture - Engine Block Timer	employee	New	1,317.29	3	\$16.25	0%	0%	\$0.00	0.00	0.00	Vermont TRM
Wastewater	Motors	Agriculture - Live Stock Waterer	employee	New	8,826.41	10	\$4,695.17	0%	0%	\$0.07	0.00	0.00	Ontario Power TRM
Wastewater	Process	Dairy - Milk Precoolers	employee	New	0.00	15	\$500.81	0%	0%	\$0.00	0.00	0.07	Ontario Power TRM
Wastewater	Process	Clean Room: Change Filter Strategy	employee	New	0.00	15	\$6.37	0%	0%	\$0.00	0.00	0.01	7th Power Plan
Wastewater	Process	Clean Room: Chiller Optimize	employee	New	0.00	15	\$29.66	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Wastewater	Process	Clean Room: Clean Room HVAC	employee	New	0.00	15	\$35.80	0%	0%	\$0.00	0.00	0.01	7th Power Plan
Wastewater	Process	Elec Chip Fab: Solidstate Chiller	employee	New	0.00	15	\$112.44	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Wastewater	Process	Elec Chip Fab: Eliminate Exhaust	employee	New	0.00	15	\$22.93	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Wastewater	Process	Elec Chip Fab: Exhaust Injector	employee	New	0.00	15	\$110.63	0%	0%	\$0.00	0.00	0.04	7th Power Plan
Wastewater	Process	Elec Chip Fab: Reduce Gas Pressure	employee	New	0.00	15	\$2.22	0%	0%	\$0.00	0.00	0.02	7th Power Plan
Wastewater	Motors	Panel: Hydraulic Press	employee	New	1,193.51	10	\$281.70	0%	0%	\$0.03	0.00	0.02	7th Power Plan
Wastewater	Motors	Wood: Replace Pneumatic Conveyor	employee	New	1,279.69	10	\$21.10	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Wastewater	Process	Metal: New Arc Furnace	employee	New	0.00	10	\$102.07	0%	0%	\$0.00	0.00	0.06	7th Power Plan
Wastewater	Process	Paper: Premium Control Large Material	employee	New	684.82	10	\$342.59	0%	0%	\$0.07	0.00	0.52	7th Power Plan
Wastewater	Process	Paper: Efficient Pulp Screen	employee	New	548.52	10	\$112.85	0%	0%	\$0.03	0.00	0.01	7th Power Plan
Wastewater	Process	Kraft: Effluent Treatment System	employee	New	548.52	10	\$46.27	0%	0%	\$0.01	0.00	0.01	7th Power Plan
Wastewater	Motors	Kraft: Efficient Agitator	employee	New	2,203.45	10	\$210.21	0%	0%	\$0.01	0.00	0.03	7th Power Plan
Wastewater	Process	Mech Pulp: Premium Process	employee	New	6.14	5	\$0.79	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Wastewater	Motors	Mech Pulp: Refiner Plate Improvement	employee	New	18.54	1	\$0.80	0%	0%	\$0.04	0.00	0.59	7th Power Plan

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Wastewater	Cooling	Transformer - High Efficiency	employee	New	67.88	10	\$163.67	15%	15%	\$0.02	0.00	0.81	7th Power Plan
Wastewater	Heating	Transformer - High Efficiency	employee	New	138.05	10	\$163.67	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Wastewater	Ventilation	Transformer - High Efficiency	employee	New	5.30	10	\$163.67	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Wastewater	Interior Lighting	Transformer - High Efficiency	employee	New	26.97	10	\$163.67	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Wastewater	Exterior Lighting	Transformer - High Efficiency	employee	New	5.95	10	\$163.67	15%	15%	\$0.02	0.00	0.05	7th Power Plan
Wastewater	Motors	Transformer - High Efficiency	employee	New	1,012.48	10	\$163.67	15%	15%	\$0.02	0.00	0.05	7th Power Plan
Wastewater	Process	Transformer - High Efficiency	employee	New	54.85	10	\$163.67	15%	15%	\$0.02	0.00	0.05	7th Power Plan
Wastewater	Miscellaneous	Transformer - High Efficiency	employee	New	47.23	10	\$163.67	15%	15%	\$0.02	0.00	0.04	7th Power Plan
Wastewater	Cooling	Strategic Energy Management	employee	New	192.58	3	\$1,005.21	0%	5%	\$0.08	0.00	0.04	AEG Research
Wastewater	Heating	Strategic Energy Management	employee	New	396.61	3	\$1,005.21	0%	5%	\$0.08	0.00	0.00	AEG Research
Wastewater	Ventilation	Strategic Energy Management	employee	New	15.27	3	\$1,005.21	0%	5%	\$0.08	0.00	0.00	AEG Research
Wastewater	Interior Lighting	Strategic Energy Management	employee	New	77.65	3	\$1,005.21	0%	5%	\$0.08	0.00	0.00	AEG Research
Wastewater	Exterior Lighting	Strategic Energy Management	employee	New	17.18	3	\$1,005.21	0%	5%	\$0.08	0.00	0.04	AEG Research
Wastewater	Motors	Strategic Energy Management	employee	New	2,924.94	3	\$1,005.21	0%	5%	\$0.08	0.04	0.07	AEG Research
Wastewater	Process	Strategic Energy Management	employee	New	158.46	3	\$1,005.21	0%	5%	\$0.08	0.00	0.32	AEG Research
Wastewater	Miscellaneous	Strategic Energy Management	employee	New	136.43	3	\$1,005.21	0%	5%	\$0.08	0.00	0.34	AEG Research
Wastewater	Interior Lighting	Commissioning	employee	New	89.57	3	\$1,825.87	5%	39%	\$0.15	0.01	0.31	AEG Research
Wastewater	Exterior Lighting	Commissioning	employee	New	19.81	3	\$1,825.87	5%	39%	\$0.15	0.00	0.11	AEG Research
Wastewater	Motors	Commissioning	employee	New	3,374.13	3	\$1,825.87	5%	39%	\$0.15	0.29	0.13	AEG Research
Wastewater	Process	Commissioning	employee	New	182.80	3	\$1,825.87	5%	39%	\$0.15	0.02	0.19	AEG Research

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Wastewater	Miscellaneous	Commissioning	employee	New	157.38	3	\$1,825.87	5%	39%	\$0.15	0.02	0.67	AEG Research
Wastewater	Interior Lighting	Retrocommissioning	employee	New	89.91	3	\$1,159.10	0%	0%	\$0.10	0.00	0.00	AEG Research
Wastewater	Exterior Lighting	Retrocommissioning	employee	New	19.82	3	\$1,159.10	0%	0%	\$0.10	0.00	0.00	AEG Research
Wastewater	Motors	Retrocommissioning	employee	New	3,374.93	3	\$1,159.10	0%	0%	\$0.10	0.00	0.13	AEG Research
Wastewater	Process	Retrocommissioning	employee	New	182.84	3	\$1,159.10	0%	0%	\$0.10	0.00	0.65	AEG Research
Wastewater	Miscellaneous	Retrocommissioning	employee	New	157.42	3	\$1,159.10	0%	0%	\$0.10	0.00	0.20	AEG Research
Wastewater	Motors	Municipal Sewage Treatment	employee	New	485.56	12	\$268.02	15%	35%	\$0.07	0.28	0.01	7th Power Plan
Wastewater	Motors	Municipal Water Supply Treatment	employee	New	0.00	12	\$0.00	0%	0%	\$0.00	0.00	0.06	7th Power Plan
Water	Cooling	Insulation - Ceiling	sqft	Existing	0.13	45	\$1.28	15%	25%	\$0.14	0.12	0.22	Building Energy Simulation Tool
Water	Heating	Insulation - Ceiling	sqft	Existing	0.52	45	\$1.28	15%	25%	\$0.14	0.52	0.99	Building Energy Simulation Tool
Water	Ventilation	Insulation - Ceiling	sqft	Existing	0.02	45	\$1.28	15%	25%	\$0.14	0.08	0.16	Building Energy Simulation Tool
Water	Cooling	Insulation - Ducting	sqft	Existing	0.05	20	\$0.84	15%	25%	\$1.01	0.04	0.08	Building Energy Simulation Tool
Water	Heating	Insulation - Ducting	sqft	Existing	0.02	20	\$0.84	15%	25%	\$1.01	0.02	0.04	Building Energy Simulation Tool
Water	Ventilation	Insulation - Ducting	sqft	Existing	0.00	20	\$0.84	15%	25%	\$1.01	0.00	0.01	Building Energy Simulation Tool
Water	Cooling	Insulation - Wall Cavity	sqft	Existing	0.00	45	\$0.15	45%	50%	\$0.02	0.00	0.00	Building Energy Simulation Tool
Water	Heating	Insulation - Wall Cavity	sqft	Existing	0.76	45	\$0.15	45%	50%	\$0.02	0.39	0.71	Building Energy Simulation Tool
Water	Ventilation	Insulation - Wall Cavity	sqft	Existing	0.02	45	\$0.15	45%	50%	\$0.02	0.05	0.11	Building Energy Simulation Tool
Water	Cooling	HVAC - Duct Repair and Sealing	sqft	Existing	0.02	18	\$0.00	15%	25%	\$0.00	0.02	0.03	Building Energy Simulation Tool
Water	Heating	HVAC - Duct Repair and Sealing	sqft	Existing	0.05	18	\$0.00	15%	25%	\$0.00	0.06	0.10	Building Energy Simulation Tool
Water	Ventilation	HVAC - Duct Repair and Sealing	sqft	Existing	0.00	18	\$0.00	15%	25%	\$0.00	0.01	0.02	Building Energy Simulation Tool
Water	Cooling	Chiller - Chilled Water Reset	sqft	Existing	0.04	10	\$0.01	15%	45%	\$0.03	0.05	0.09	AEG-BEST

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Water	Cooling	Chiller - Chilled Water Variable-Flow System	sqft	Existing	0.24	15	\$0.50	15%	60%	\$0.21	0.37	0.75	AEG-BEST
Water	Cooling	Chiller - Variable Speed Fans	sqft	Existing	0.09	15	\$0.03	15%	75%	\$0.04	0.19	0.37	New Jersey TRM
Water	Cooling	HVAC - Economizer	sqft	Existing	0.33	10	\$0.25	18%	30%	\$0.09	0.20	0.39	AEG-BEST
Water	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.25	15%	35%	\$10.33	0.02	0.06	7th Power Plan
Water	Cooling	Destratification Fans (HVLS)	sqft	Existing	0.16	15	\$0.63	15%	50%	\$0.04	0.54	1.06	AEG Research
Water	Heating	Destratification Fans (HVLS)	sqft	Existing	1.38	15	\$0.63	15%	50%	\$0.04	5.13	9.37	AEG Research
Water	Cooling	RTU - Maintenance	sqft	Existing	0.08	3	\$0.07	15%	75%	\$0.26	0.39	0.80	AEG Research
Water	Cooling	Thermostat - WiFi/Interactive	sqft	Existing	0.29	5	\$0.66	5%	15%	\$0.09	0.27	0.52	7th Power Plan
Water	Heating	Thermostat - WiFi/Interactive	sqft	Existing	1.21	5	\$0.66	5%	15%	\$0.09	1.21	2.32	7th Power Plan
Water	Ventilation	Thermostat - WiFi/Interactive	sqft	Existing	0.04	5	\$0.66	5%	15%	\$0.09	0.18	0.39	7th Power Plan
Water	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.38	15	\$0.35	7%	33%	\$0.07	2.11	3.42	7th Power Plan
Water	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.52	15	\$0.58	7%	33%	\$0.09	2.81	4.68	7th Power Plan
Water	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	Existing	0.02	15	\$0.00	1%	2%	\$0.01	0.01	0.02	7th Power Plan
Water	Interior Lighting	Interior Lighting - Timers and Timers	sqft	Existing	0.00	8	\$0.00	7%	7%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Water	Interior Lighting	Interior Lighting - Skylights	sqft	Existing	0.00	15	\$1.01	15%	23%	\$0.00	0.00	0.00	AEG Research
Water	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	sqft	Existing	0.03	16	\$1.81	5%	40%	\$3.95	0.31	0.65	7th Power Plan
Water	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	Existing	0.04	11	\$0.00	15%	50%	\$0.01	0.36	0.66	Illinois TRM
Water	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	sqft	Existing	0.05	8	\$0.03	15%	25%	\$0.08	0.43	0.84	7th Power Plan
Water	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	Existing	0.03	8	\$0.02	33%	60%	\$0.08	0.60	1.21	Pacific Gas and Electric Research
Water	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	Existing	0.03	7	\$1.19	15%	30%	\$4.38	0.37	0.80	AEG Research

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Water	Process	Process - Conductivity Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Water	Process	Process - Timers and Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Water	Motors	Process - Timers and Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Water	Process	Refrigeration - Floating Head Pressure	employee	Existing	0.00	15	\$67.44	20%	50%	\$0.00	0.00	0.42	RTF Workbook
Water	Process	Refrigeration - System Optimization	employee	Existing	0.00	15	\$47.49	20%	50%	\$0.00	0.00	0.67	AEG Research
Water	Motors	Pumping System - Equipment Upgrade	employee	Existing	5,791.22	10	\$825.34	9%	38%	\$0.05	93.99	2.77	7th Power Plan
Water	Motors	Pumping System - System Optimization	employee	Existing	4,115.25	12	\$1,257.82	9%	38%	\$0.04	64.12	1.99	UNIDO Study on Industrial Energy Efficiency
Water	Motors	Pumping System - Variable Speed Drive	employee	Existing	3,969.25	10	\$1,308.60	9%	38%	\$0.04	61.00	1.97	UNIDO Study on Industrial Energy Efficiency
Water	Motors	Fan System - Equipment Upgrade	employee	Existing	0.00	10	\$9.93	9%	38%	\$0.00	0.00	0.98	UNIDO Study on Industrial Energy Efficiency
Water	Motors	Fan System - Flow Optimization	employee	Existing	0.00	10	\$16.42	9%	38%	\$0.00	0.00	1.16	UNIDO Study on Industrial Energy Efficiency
Water	Motors	Fan System - Variable Speed Drive	employee	Existing	0.00	10	\$82.64	9%	38%	\$0.00	0.00	1.71	UNIDO Study on Industrial Energy Efficiency
Water	Motors	Compressed Air - Equipment Upgrade	employee	Existing	148.18	10	\$10.78	17%	50%	\$0.04	2.81	4.05	7th Power Plan
Water	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	Existing	0.00	15	\$0.00	16%	38%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Water	Motors	Compressed Air - Refrigerated Cycling Dryers	employee	Existing	0.00	10	\$0.00	16%	30%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Water	Motors	Compressed Air - System Controls	employee	Existing	31.01	10	\$7.71	9%	38%	\$0.03	0.49	0.77	UNIDO Study on Industrial Energy Efficiency
Water	Motors	Compressed Air - Leak Management Program	employee	Existing	84.55	10	\$7.75	18%	75%	\$0.04	2.75	3.94	7th Power Plan
Water	Motors	Compressed Air - Variable Speed Drive	employee	Existing	56.03	15	\$47.26	26%	45%	\$0.08	0.58	0.95	UNIDO Study on Industrial Energy Efficiency
Water	Motors	Compressed Air - Low Pressure-Drop Filters	employee	Existing	1.87	10	\$0.73	17%	50%	\$0.05	0.03	0.06	Illinois TRM
Water	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	Existing	12.00	10	\$2.36	17%	50%	\$0.03	0.22	0.34	UNIDO Study on Industrial Energy Efficiency

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Water	Motors	Compressed Air - Outside Air Intake	employee	Existing	0.00	20	\$0.00	17%	50%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Water	Motors	Compressed Air - Receiver Capacity Addition	employee	Existing	11.58	15	\$6.50	17%	50%	\$0.06	0.21	0.33	UNIDO Study on Industrial Energy Efficiency
Water	Motors	Material Handling - Variable Speed Drive	employee	Existing	208.39	10	\$80.47	25%	45%	\$0.05	2.22	3.21	7th Power Plan
Water	Motors	Motors - Green Rewind (<100 HP)	employee	Existing	60.99	10	\$28.30	10%	50%	\$0.06	5.19	0.74	7th Power Plan
Water	Motors	Motors - Green Rewind (100 HP+)	employee	Existing	35.04	10	\$10.05	6%	25%	\$0.04	1.44	0.20	7th Power Plan
Water	Motors	Switch from Belt Drive to Direct Drive	employee	Existing	547.55	12	\$124.24	16%	25%	\$0.03	11.40	1.50	2015-mdu-irp-report---volume-iii.pdf
Water	Motors	Motors - Synchronous Belts	employee	Existing	140.64	10	\$37.38	16%	36%	\$0.03	6.22	0.86	7th Power Plan
Water	Miscellaneous	Agriculture - Engine Block Timer	employee	Existing	564.51	3	\$6.96	0%	0%	\$0.00	0.00	0.00	Vermont TRM
Water	Motors	Agriculture - Live Stock Waterer	employee	Existing	12,769.96	10	\$7,268.58	0%	0%	\$0.07	0.00	0.00	Ontario Power TRM
Water	Process	Dairy - Milk Precoolers	employee	Existing	0.00	15	\$214.62	0%	0%	\$0.00	0.00	0.00	Ontario Power TRM
Water	Process	Clean Room: Change Filter Strategy	employee	Existing	0.00	15	\$2.73	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Water	Process	Clean Room: Chiller Optimize	employee	Existing	0.00	15	\$12.71	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Water	Process	Clean Room: Clean Room HVAC	employee	Existing	0.00	15	\$15.34	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Water	Process	Elec Chip Fab: Solidstate Chiller	employee	Existing	0.00	15	\$48.18	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Water	Process	Elec Chip Fab: Eliminate Exhaust	employee	Existing	0.00	15	\$9.83	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Water	Process	Elec Chip Fab: Exhaust Injector	employee	Existing	0.00	15	\$47.41	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Water	Process	Elec Chip Fab: Reduce Gas Pressure	employee	Existing	0.00	15	\$0.95	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Water	Motors	Panel: Hydraulic Press	employee	Existing	322.92	10	\$80.42	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Water	Motors	Wood: Replace Pneumatic Conveyor	employee	Existing	365.33	10	\$6.02	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Water	Process	Metal: New Arc Furnace	employee	Existing	0.00	10	\$43.74	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Water	Process	Paper: Premium Control Large Material	employee	Existing	293.47	10	\$146.81	0%	0%	\$0.07	0.00	0.00	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Water	Process	Paper: Efficient Pulp Screen	employee	Existing	235.06	10	\$48.36	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Water	Process	Kraft: Effluent Treatment System	employee	Existing	235.06	10	\$19.83	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Water	Motors	Kraft: Efficient Agitator	employee	Existing	628.13	10	\$60.01	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Water	Process	Mech Pulp: Premium Process	employee	Existing	2.63	5	\$0.34	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Water	Motors	Mech Pulp: Refiner Plate Improvement	employee	Existing	4.95	1	\$0.23	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Water	Cooling	Transformer - High Efficiency	employee	Existing	31.56	10	\$70.88	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Water	Heating	Transformer - High Efficiency	employee	Existing	59.74	10	\$70.88	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Water	Ventilation	Transformer - High Efficiency	employee	Existing	3.27	10	\$70.88	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Water	Interior Lighting	Transformer - High Efficiency	employee	Existing	12.98	10	\$70.88	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Water	Exterior Lighting	Transformer - High Efficiency	employee	Existing	2.81	10	\$70.88	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Water	Motors	Transformer - High Efficiency	employee	Existing	405.49	10	\$70.88	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Water	Process	Transformer - High Efficiency	employee	Existing	23.51	10	\$70.88	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Water	Miscellaneous	Transformer - High Efficiency	employee	Existing	21.37	10	\$70.88	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Water	Cooling	Strategic Energy Management	employee	Existing	87.55	3	\$435.35	0%	5%	\$0.08	0.04	0.08	AEG Research
Water	Heating	Strategic Energy Management	employee	Existing	169.59	3	\$435.35	0%	5%	\$0.08	0.09	0.17	AEG Research
Water	Ventilation	Strategic Energy Management	employee	Existing	9.37	3	\$435.35	0%	5%	\$0.08	0.02	0.05	AEG Research
Water	Interior Lighting	Strategic Energy Management	employee	Existing	36.95	3	\$435.35	0%	5%	\$0.08	0.08	0.14	AEG Research
Water	Exterior Lighting	Strategic Energy Management	employee	Existing	8.04	3	\$435.35	0%	5%	\$0.08	0.02	0.03	AEG Research
Water	Motors	Strategic Energy Management	employee	Existing	1,160.12	3	\$435.35	0%	5%	\$0.08	2.90	0.41	AEG Research
Water	Process	Strategic Energy Management	employee	Existing	67.23	3	\$435.35	0%	5%	\$0.08	0.18	0.25	AEG Research

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Water	Miscellaneous	Strategic Energy Management	employee	Existing	61.05	3	\$435.35	0%	5%	\$0.08	0.20	0.13	AEG Research
Water	Interior Lighting	Commissioning	employee	Existing	42.59	3	\$780.52	0%	0%	\$0.15	0.00	0.00	AEG Research
Water	Exterior Lighting	Commissioning	employee	Existing	9.27	3	\$780.52	0%	0%	\$0.15	0.00	0.00	AEG Research
Water	Motors	Commissioning	employee	Existing	1,336.96	3	\$780.52	0%	0%	\$0.15	0.00	0.00	AEG Research
Water	Process	Commissioning	employee	Existing	77.47	3	\$780.52	0%	0%	\$0.15	0.00	0.00	AEG Research
Water	Miscellaneous	Commissioning	employee	Existing	70.34	3	\$780.52	0%	0%	\$0.15	0.00	0.00	AEG Research
Water	Interior Lighting	Retrocommissioning	employee	Existing	43.28	3	\$495.49	5%	39%	\$0.10	0.61	1.12	AEG Research
Water	Exterior Lighting	Retrocommissioning	employee	Existing	9.36	3	\$495.49	5%	39%	\$0.10	0.14	0.25	AEG Research
Water	Motors	Retrocommissioning	employee	Existing	1,351.64	3	\$495.49	5%	39%	\$0.10	23.14	3.22	AEG Research
Water	Process	Retrocommissioning	employee	Existing	78.35	3	\$495.49	5%	39%	\$0.10	1.40	1.95	AEG Research
Water	Miscellaneous	Retrocommissioning	employee	Existing	71.22	3	\$495.49	5%	39%	\$0.10	1.61	1.03	AEG Research
Water	Motors	Municipal Sewage Treatment	employee	Existing	691.96	12	\$414.91	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Water	Motors	Municipal Water Supply Treatment	employee	Existing	0.00	12	\$0.00	15%	35%	\$0.00	0.00	0.00	7th Power Plan
Water	Cooling	Insulation - Ceiling	sqft	New	0.11	45	\$1.28	15%	25%	\$0.15	0.02	0.04	Building Energy Simulation Tool
Water	Heating	Insulation - Ceiling	sqft	New	0.51	45	\$1.28	15%	25%	\$0.15	0.12	0.21	Building Energy Simulation Tool
Water	Ventilation	Insulation - Ceiling	sqft	New	0.01	45	\$1.28	15%	25%	\$0.15	0.01	0.03	Building Energy Simulation Tool
Water	Cooling	Insulation - Ducting	sqft	New	0.04	20	\$0.84	15%	25%	\$1.09	0.01	0.02	Building Energy Simulation Tool
Water	Heating	Insulation - Ducting	sqft	New	0.02	20	\$0.84	15%	25%	\$1.09	0.00	0.01	Building Energy Simulation Tool
Water	Ventilation	Insulation - Ducting	sqft	New	0.00	20	\$0.84	15%	25%	\$1.09	0.00	0.00	Building Energy Simulation Tool
Water	Cooling	Insulation - Wall Cavity	sqft	New	0.00	45	\$0.15	45%	50%	\$0.02	0.00	0.00	Building Energy Simulation Tool
Water	Heating	Insulation - Wall Cavity	sqft	New	0.71	45	\$0.15	45%	50%	\$0.02	0.08	0.14	Building Energy Simulation Tool
Water	Ventilation	Insulation - Wall Cavity	sqft	New	0.01	45	\$0.15	45%	50%	\$0.02	0.01	0.02	Building Energy Simulation Tool

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Water	Cooling	HVAC - Duct Repair and Sealing	sqft	New	0.01	18	\$0.00	15%	25%	\$0.00	0.00	0.01	Building Energy Simulation Tool
Water	Heating	HVAC - Duct Repair and Sealing	sqft	New	0.05	18	\$0.00	15%	25%	\$0.00	0.01	0.02	Building Energy Simulation Tool
Water	Ventilation	HVAC - Duct Repair and Sealing	sqft	New	0.00	18	\$0.00	15%	25%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Water	Cooling	Chiller - Chilled Water Reset	sqft	New	0.04	10	\$0.01	15%	45%	\$0.03	0.00	0.01	AEG-BEST
Water	Cooling	Chiller - Chilled Water Variable-Flow System	sqft	New	0.19	15	\$0.50	15%	60%	\$0.25	0.04	0.08	AEG-BEST
Water	Cooling	Chiller - Variable Speed Fans	sqft	New	0.07	15	\$0.03	15%	75%	\$0.04	0.02	0.04	New Jersey TRM
Water	Cooling	HVAC - Economizer	sqft	New	0.30	10	\$0.25	18%	30%	\$0.10	0.02	0.04	AEG-BEST
Water	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.25	15%	35%	\$12.02	0.00	0.01	7th Power Plan
Water	Cooling	Destratification Fans (HVLS)	sqft	New	0.14	15	\$0.63	15%	50%	\$0.05	0.06	0.11	AEG Research
Water	Heating	Destratification Fans (HVLS)	sqft	New	1.30	15	\$0.63	15%	50%	\$0.05	0.56	0.99	AEG Research
Water	Cooling	RTU - Maintenance	sqft	New	0.08	3	\$0.07	15%	75%	\$0.27	0.01	0.02	AEG Research
Water	Cooling	Thermostat - WiFi/Interactive	sqft	New	0.26	5	\$0.66	5%	15%	\$0.09	0.01	0.01	7th Power Plan
Water	Heating	Thermostat - WiFi/Interactive	sqft	New	1.21	5	\$0.66	5%	15%	\$0.09	0.03	0.06	7th Power Plan
Water	Ventilation	Thermostat - WiFi/Interactive	sqft	New	0.02	5	\$0.66	5%	15%	\$0.09	0.00	0.01	7th Power Plan
Water	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.31	15	\$0.35	22%	41%	\$0.07	0.55	0.84	7th Power Plan
Water	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.42	15	\$0.58	22%	41%	\$0.09	0.75	1.15	7th Power Plan
Water	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	New	0.02	15	\$0.00	1%	2%	\$0.01	0.00	0.00	7th Power Plan
Water	Interior Lighting	Interior Lighting - Timeclocks and Timers	sqft	New	0.00	8	\$0.00	7%	7%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Water	Interior Lighting	Interior Lighting - Skylights	sqft	New	0.00	15	\$1.01	18%	24%	\$0.00	0.00	0.00	AEG Research
Water	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	sqft	New	0.03	16	\$1.81	5%	40%	\$3.94	0.04	0.07	7th Power Plan

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Water	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	New	0.03	11	\$0.00	15%	50%	\$0.01	0.04	0.06	Illinois TRM
Water	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	sqft	New	0.04	8	\$0.03	15%	25%	\$0.08	0.04	0.06	7th Power Plan
Water	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	New	0.02	8	\$0.02	44%	60%	\$0.08	0.03	0.05	Pacific Gas and Electric Research
Water	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	New	0.02	7	\$1.19	15%	30%	\$4.39	0.03	0.05	AEG Research
Water	Process	Process - Conductivity Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Water	Process	Process - Timers and Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Water	Motors	Process - Timers and Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Water	Process	Refrigeration - Floating Head Pressure	employee	New	0.00	15	\$47.66	20%	50%	\$0.00	0.00	0.05	RTF Workbook
Water	Process	Refrigeration - System Optimization	employee	New	0.00	15	\$16.67	20%	50%	\$0.00	0.00	0.09	AEG Research
Water	Motors	Pumping System - Equipment Upgrade	employee	New	5,800.67	10	\$825.34	9%	38%	\$0.05	9.90	0.28	7th Power Plan
Water	Motors	Pumping System - System Optimization	employee	New	4,252.86	12	\$1,257.82	9%	38%	\$0.04	10.66	0.31	UNIDO Study on Industrial Energy Efficiency
Water	Motors	Pumping System - Variable Speed Drive	employee	New	4,174.95	10	\$1,308.60	9%	38%	\$0.04	9.50	0.28	UNIDO Study on Industrial Energy Efficiency
Water	Motors	Fan System - Equipment Upgrade	employee	New	0.00	10	\$9.93	9%	38%	\$0.00	0.00	0.14	UNIDO Study on Industrial Energy Efficiency
Water	Motors	Fan System - Flow Optimization	employee	New	0.00	10	\$16.42	9%	38%	\$0.00	0.00	0.16	UNIDO Study on Industrial Energy Efficiency
Water	Motors	Fan System - Variable Speed Drive	employee	New	0.00	10	\$82.64	9%	38%	\$0.00	0.00	0.24	UNIDO Study on Industrial Energy Efficiency
Water	Motors	Compressed Air - Equipment Upgrade	employee	New	148.18	10	\$10.78	17%	50%	\$0.04	0.29	0.41	7th Power Plan
Water	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	New	0.00	15	\$0.00	16%	38%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Water	Motors	Compressed Air - Refrigerated Cycling Dryers	employee	New	0.00	10	\$0.00	16%	30%	\$0.00	0.00	0.00	Michigan Energy Measures Database

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Water	Motors	Compressed Air - System Controls	employee	New	32.53	10	\$7.71	9%	38%	\$0.03	0.06	0.08	UNIDO Study on Industrial Energy Efficiency
Water	Motors	Compressed Air - Leak Management Program	employee	New	84.62	10	\$7.75	18%	75%	\$0.04	0.29	0.40	7th Power Plan
Water	Motors	Compressed Air - Variable Speed Drive	employee	New	59.88	15	\$47.26	26%	45%	\$0.08	0.09	0.12	UNIDO Study on Industrial Energy Efficiency
Water	Motors	Compressed Air - Low Pressure-Drop Filters	employee	New	2.00	10	\$0.73	17%	50%	\$0.05	0.00	0.01	Illinois TRM
Water	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	New	12.40	10	\$2.36	17%	50%	\$0.03	0.02	0.03	UNIDO Study on Industrial Energy Efficiency
Water	Motors	Compressed Air - Outside Air Intake	employee	New	0.00	20	\$0.00	17%	50%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Water	Motors	Compressed Air - Receiver Capacity Addition	employee	New	12.17	15	\$6.50	17%	50%	\$0.06	0.03	0.04	UNIDO Study on Industrial Energy Efficiency
Water	Motors	Material Handling - Variable Speed Drive	employee	New	222.58	10	\$80.47	25%	45%	\$0.05	0.36	0.46	7th Power Plan
Water	Motors	Motors - Green Rewind (<100 HP)	employee	New	65.19	10	\$28.30	10%	50%	\$0.06	0.84	0.11	7th Power Plan
Water	Motors	Motors - Green Rewind (100 HP+)	employee	New	36.84	10	\$10.05	6%	25%	\$0.04	0.22	0.03	7th Power Plan
Water	Motors	Switch from Belt Drive to Direct Drive	employee	New	564.34	12	\$124.24	16%	25%	\$0.03	1.89	0.23	2015-mdu-irp-report---volume-iii.pdf
Water	Motors	Motors - Synchronous Belts	employee	New	147.58	10	\$37.38	16%	36%	\$0.03	0.71	0.09	7th Power Plan
Water	Miscellaneous	Agriculture - Engine Block Timer	employee	New	564.51	3	\$6.96	0%	0%	\$0.00	0.00	0.00	Vermont TRM
Water	Motors	Agriculture - Live Stock Waterer	employee	New	13,667.71	10	\$7,268.58	0%	0%	\$0.07	0.00	0.00	Ontario Power TRM
Water	Process	Dairy - Milk Precoolers	employee	New	0.00	15	\$214.62	0%	0%	\$0.00	0.00	0.00	Ontario Power TRM
Water	Process	Clean Room: Change Filter Strategy	employee	New	0.00	15	\$2.73	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Water	Process	Clean Room: Chiller Optimize	employee	New	0.00	15	\$12.71	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Water	Process	Clean Room: Clean Room HVAC	employee	New	0.00	15	\$15.34	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Water	Process	Elec Chip Fab: Solidstate Chiller	employee	New	0.00	15	\$48.18	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Water	Process	Elec Chip Fab: Eliminate Exhaust	employee	New	0.00	15	\$9.83	0%	0%	\$0.00	0.00	0.00	7th Power Plan

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Water	Process	Elec Chip Fab: Exhaust Injector	employee	New	0.00	15	\$47.41	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Water	Process	Elec Chip Fab: Reduce Gas Pressure	employee	New	0.00	15	\$0.95	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Water	Motors	Panel: Hydraulic Press	employee	New	338.78	10	\$80.42	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Water	Motors	Wood: Replace Pneumatic Conveyor	employee	New	365.33	10	\$6.02	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Water	Process	Metal: New Arc Furnace	employee	New	0.00	10	\$43.74	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Water	Process	Paper: Premium Control Large Material	employee	New	293.47	10	\$146.81	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Water	Process	Paper: Efficient Pulp Screen	employee	New	235.06	10	\$48.36	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Water	Process	Kraft: Effluent Treatment System	employee	New	235.06	10	\$19.83	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Water	Motors	Kraft: Efficient Agitator	employee	New	629.15	10	\$60.01	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Water	Process	Mech Pulp: Premium Process	employee	New	2.63	5	\$0.34	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Water	Motors	Mech Pulp: Refiner Plate Improvement	employee	New	5.29	1	\$0.23	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Water	Cooling	Transformer - High Efficiency	employee	New	28.44	10	\$70.14	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Water	Heating	Transformer - High Efficiency	employee	New	59.49	10	\$70.14	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Water	Ventilation	Transformer - High Efficiency	employee	New	1.99	10	\$70.14	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Water	Interior Lighting	Transformer - High Efficiency	employee	New	10.39	10	\$70.14	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Water	Exterior Lighting	Transformer - High Efficiency	employee	New	2.23	10	\$70.14	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Water	Motors	Transformer - High Efficiency	employee	New	434.00	10	\$70.14	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Water	Process	Transformer - High Efficiency	employee	New	23.51	10	\$70.14	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Water	Miscellaneous	Transformer - High Efficiency	employee	New	20.24	10	\$70.14	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Water	Cooling	Strategic Energy Management	employee	New	81.15	3	\$430.77	0%	5%	\$0.08	0.00	0.00	AEG Research
Water	Heating	Strategic Energy Management	employee	New	170.95	3	\$430.77	0%	5%	\$0.08	0.00	0.00	AEG Research

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Water	Ventilation	Strategic Energy Management	employee	New	5.74	3	\$430.77	0%	5%	\$0.08	0.00	0.00	AEG Research
Water	Interior Lighting	Strategic Energy Management	employee	New	29.92	3	\$430.77	0%	5%	\$0.08	0.00	0.00	AEG Research
Water	Exterior Lighting	Strategic Energy Management	employee	New	6.43	3	\$430.77	0%	5%	\$0.08	0.00	0.00	AEG Research
Water	Motors	Strategic Energy Management	employee	New	1,253.77	3	\$430.77	0%	5%	\$0.08	0.04	0.01	AEG Research
Water	Process	Strategic Energy Management	employee	New	67.91	3	\$430.77	0%	5%	\$0.08	0.00	0.00	AEG Research
Water	Miscellaneous	Strategic Energy Management	employee	New	58.46	3	\$430.77	0%	5%	\$0.08	0.00	0.00	AEG Research
Water	Interior Lighting	Commissioning	employee	New	34.51	3	\$782.45	5%	39%	\$0.15	0.01	0.01	AEG Research
Water	Exterior Lighting	Commissioning	employee	New	7.42	3	\$782.45	5%	39%	\$0.15	0.00	0.00	AEG Research
Water	Motors	Commissioning	employee	New	1,446.33	3	\$782.45	5%	39%	\$0.15	0.32	0.04	AEG Research
Water	Process	Commissioning	employee	New	78.34	3	\$782.45	5%	39%	\$0.15	0.02	0.02	AEG Research
Water	Miscellaneous	Commissioning	employee	New	67.44	3	\$782.45	5%	39%	\$0.15	0.02	0.01	AEG Research
Water	Interior Lighting	Retrocommissioning	employee	New	34.63	3	\$496.72	0%	0%	\$0.10	0.00	0.00	AEG Research
Water	Exterior Lighting	Retrocommissioning	employee	New	7.42	3	\$496.72	0%	0%	\$0.10	0.00	0.00	AEG Research
Water	Motors	Retrocommissioning	employee	New	1,446.66	3	\$496.72	0%	0%	\$0.10	0.00	0.00	AEG Research
Water	Process	Retrocommissioning	employee	New	78.35	3	\$496.72	0%	0%	\$0.10	0.00	0.00	AEG Research
Water	Miscellaneous	Retrocommissioning	employee	New	67.46	3	\$496.72	0%	0%	\$0.10	0.00	0.00	AEG Research
Water	Motors	Municipal Sewage Treatment	employee	New	739.63	12	\$414.91	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Water	Motors	Municipal Water Supply Treatment	employee	New	0.00	12	\$0.00	15%	35%	\$0.00	0.00	0.00	7th Power Plan
Chemical Mfg	Cooling	Insulation - Ceiling	sqft	Existing	0.13	45	\$1.28	15%	25%	\$0.14	0.01	0.00	Building Energy Simulation Tool
Chemical Mfg	Heating	Insulation - Ceiling	sqft	Existing	0.52	45	\$1.28	15%	25%	\$0.14	0.02	0.00	Building Energy Simulation Tool
Chemical Mfg	Ventilation	Insulation - Ceiling	sqft	Existing	0.02	45	\$1.28	15%	25%	\$0.14	0.00	0.00	Building Energy Simulation Tool
Chemical Mfg	Cooling	Insulation - Ducting	sqft	Existing	0.05	20	\$0.84	15%	25%	\$1.01	0.00	0.00	Building Energy Simulation Tool

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Chemical Mfg	Heating	Insulation - Ducting	sqft	Existing	0.02	20	\$0.84	15%	25%	\$1.01	0.00	0.10	Building Energy Simulation Tool
Chemical Mfg	Ventilation	Insulation - Ducting	sqft	Existing	0.00	20	\$0.84	15%	25%	\$1.01	0.00	0.13	Building Energy Simulation Tool
Chemical Mfg	Cooling	Insulation - Wall Cavity	sqft	Existing	0.00	45	\$0.15	45%	50%	\$0.02	0.00	0.08	Building Energy Simulation Tool
Chemical Mfg	Heating	Insulation - Wall Cavity	sqft	Existing	0.76	45	\$0.15	45%	50%	\$0.02	0.02	0.03	Building Energy Simulation Tool
Chemical Mfg	Ventilation	Insulation - Wall Cavity	sqft	Existing	0.02	45	\$0.15	45%	50%	\$0.02	0.00	0.02	Building Energy Simulation Tool
Chemical Mfg	Cooling	HVAC - Duct Repair and Sealing	sqft	Existing	0.02	18	\$0.00	15%	25%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Chemical Mfg	Heating	HVAC - Duct Repair and Sealing	sqft	Existing	0.05	18	\$0.00	15%	25%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Chemical Mfg	Ventilation	HVAC - Duct Repair and Sealing	sqft	Existing	0.00	18	\$0.00	15%	25%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Chemical Mfg	Cooling	Chiller - Chilled Water Reset	sqft	Existing	0.04	10	\$0.01	15%	45%	\$0.03	0.00	0.00	AEG-BEST
Chemical Mfg	Cooling	Chiller - Chilled Water Variable-Flow System	sqft	Existing	0.24	15	\$0.50	15%	60%	\$0.21	0.02	0.58	AEG-BEST
Chemical Mfg	Cooling	Chiller - Variable Speed Fans	sqft	Existing	0.09	15	\$0.03	15%	75%	\$0.04	0.01	0.13	New Jersey TRM
Chemical Mfg	Cooling	HVAC - Economizer	sqft	Existing	0.17	10	\$0.25	18%	30%	\$0.18	0.01	3.09	AEG-BEST
Chemical Mfg	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.25	15%	35%	\$10.33	0.00	0.61	7th Power Plan
Chemical Mfg	Cooling	Destratification Fans (HVLS)	sqft	Existing	0.16	15	\$0.63	15%	50%	\$0.04	0.02	0.04	AEG Research
Chemical Mfg	Heating	Destratification Fans (HVLS)	sqft	Existing	1.38	15	\$0.63	15%	50%	\$0.04	0.22	0.83	AEG Research
Chemical Mfg	Cooling	RTU - Maintenance	sqft	Existing	0.08	3	\$0.07	15%	75%	\$0.26	0.02	0.16	AEG Research
Chemical Mfg	Cooling	Thermostat - WiFi/Interactive	sqft	Existing	0.29	5	\$0.66	5%	15%	\$0.09	0.01	0.00	7th Power Plan
Chemical Mfg	Heating	Thermostat - WiFi/Interactive	sqft	Existing	1.21	5	\$0.66	5%	15%	\$0.09	0.05	0.00	7th Power Plan
Chemical Mfg	Ventilation	Thermostat - WiFi/Interactive	sqft	Existing	0.04	5	\$0.66	5%	15%	\$0.09	0.01	0.00	7th Power Plan
Chemical Mfg	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.20	15	\$0.35	7%	33%	\$0.14	0.06	0.00	7th Power Plan
Chemical Mfg	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.27	15	\$0.58	7%	33%	\$0.17	0.08	0.00	7th Power Plan

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Chemical Mfg	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	Existing	0.02	15	\$0.00	1%	2%	\$0.01	0.00	0.00	7th Power Plan
Chemical Mfg	Interior Lighting	Interior Lighting - Timeclocks and Timers	sqft	Existing	0.00	8	\$0.00	7%	7%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Chemical Mfg	Interior Lighting	Interior Lighting - Skylights	sqft	Existing	0.00	15	\$1.01	15%	23%	\$0.00	0.00	0.00	AEG Research
Chemical Mfg	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	sqft	Existing	0.03	16	\$1.81	5%	40%	\$3.95	0.01	0.00	7th Power Plan
Chemical Mfg	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	Existing	0.04	11	\$0.00	15%	50%	\$0.01	0.01	0.00	Illinois TRM
Chemical Mfg	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	sqft	Existing	0.05	8	\$0.03	15%	25%	\$0.08	0.01	0.00	7th Power Plan
Chemical Mfg	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	Existing	0.03	8	\$0.02	33%	60%	\$0.08	0.02	0.06	Pacific Gas and Electric Research
Chemical Mfg	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	Existing	0.03	7	\$1.19	15%	30%	\$4.38	0.01	0.07	AEG Research
Chemical Mfg	Process	Process - Conductivity Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.05	N/A
Chemical Mfg	Process	Process - Timers and Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.02	N/A
Chemical Mfg	Motors	Process - Timers and Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.01	N/A
Chemical Mfg	Process	Refrigeration - Floating Head Pressure	employee	Existing	22.33	15	\$21.76	20%	50%	\$0.11	0.05	0.00	RTF Workbook
Chemical Mfg	Process	Refrigeration - System Optimization	employee	Existing	35.85	15	\$15.32	20%	50%	\$0.05	0.09	0.00	AEG Research
Chemical Mfg	Motors	Pumping System - Equipment Upgrade	employee	Existing	236.46	10	\$35.93	9%	38%	\$0.05	0.55	0.00	7th Power Plan
Chemical Mfg	Motors	Pumping System - System Optimization	employee	Existing	173.52	12	\$54.75	9%	38%	\$0.04	0.39	0.00	UNIDO Study on Industrial Energy Efficiency
Chemical Mfg	Motors	Pumping System - Variable Speed Drive	employee	Existing	169.82	10	\$56.97	9%	38%	\$0.04	0.38	0.33	UNIDO Study on Industrial Energy Efficiency
Chemical Mfg	Motors	Fan System - Equipment Upgrade	employee	Existing	59.83	10	\$6.19	9%	38%	\$0.04	0.14	0.07	UNIDO Study on Industrial Energy Efficiency
Chemical Mfg	Motors	Fan System - Flow Optimization	employee	Existing	70.49	10	\$10.24	9%	38%	\$0.02	0.16	1.86	UNIDO Study on Industrial Energy Efficiency
Chemical Mfg	Motors	Fan System - Variable Speed Drive	employee	Existing	100.71	10	\$51.55	9%	38%	\$0.06	0.22	0.34	UNIDO Study on Industrial Energy Efficiency

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Chemical Mfg	Motors	Compressed Air - Equipment Upgrade	employee	Existing	468.77	10	\$34.11	17%	50%	\$0.04	1.29	0.02	7th Power Plan
Chemical Mfg	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	Existing	0.00	15	\$0.00	16%	38%	\$0.00	0.00	0.49	Michigan Energy Measures Database
Chemical Mfg	Motors	Compressed Air - Refrigerated Cycling Dryers	employee	Existing	0.00	10	\$0.00	16%	30%	\$0.00	0.00	0.09	Michigan Energy Measures Database
Chemical Mfg	Motors	Compressed Air - System Controls	employee	Existing	97.17	10	\$24.39	9%	38%	\$0.03	0.22	0.00	UNIDO Study on Industrial Energy Efficiency
Chemical Mfg	Motors	Compressed Air - Leak Management Program	employee	Existing	259.83	10	\$24.52	18%	75%	\$0.04	1.21	0.00	7th Power Plan
Chemical Mfg	Motors	Compressed Air - Variable Speed Drive	employee	Existing	176.90	15	\$149.53	26%	45%	\$0.08	0.27	0.00	UNIDO Study on Industrial Energy Efficiency
Chemical Mfg	Motors	Compressed Air - Low Pressure-Drop Filters	employee	Existing	5.90	10	\$2.30	17%	50%	\$0.05	0.02	0.00	Illinois TRM
Chemical Mfg	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	Existing	36.87	10	\$7.48	17%	50%	\$0.03	0.10	0.00	UNIDO Study on Industrial Energy Efficiency
Chemical Mfg	Motors	Compressed Air - Outside Air Intake	employee	Existing	0.00	20	\$0.00	17%	50%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Chemical Mfg	Motors	Compressed Air - Receiver Capacity Addition	employee	Existing	36.08	15	\$20.56	17%	50%	\$0.06	0.10	0.00	UNIDO Study on Industrial Energy Efficiency
Chemical Mfg	Motors	Material Handling - Variable Speed Drive	employee	Existing	201.76	10	\$77.53	25%	45%	\$0.05	0.31	0.00	7th Power Plan
Chemical Mfg	Motors	Motors - Green Rewind (<100 HP)	employee	Existing	7.17	10	\$3.36	10%	50%	\$0.06	0.11	0.00	7th Power Plan
Chemical Mfg	Motors	Motors - Green Rewind (100 HP+)	employee	Existing	4.09	10	\$1.19	6%	25%	\$0.04	0.03	0.00	7th Power Plan
Chemical Mfg	Motors	Switch from Belt Drive to Direct Drive	employee	Existing	63.02	12	\$14.73	16%	25%	\$0.03	0.24	0.00	2015-mdu-irp-report---volume-iii.pdf
Chemical Mfg	Motors	Motors - Synchronous Belts	employee	Existing	16.42	10	\$4.43	16%	36%	\$0.03	0.13	0.27	7th Power Plan
Chemical Mfg	Miscellaneous	Agriculture - Engine Block Timer	employee	Existing	143.34	3	\$1.77	0%	0%	\$0.00	0.00	0.36	Vermont TRM
Chemical Mfg	Motors	Agriculture - Live Stock Waterer	employee	Existing	548.00	10	\$316.41	0%	0%	\$0.07	0.00	0.22	Ontario Power TRM
Chemical Mfg	Process	Dairy - Milk Precoolers	employee	Existing	148.85	15	\$69.23	0%	0%	\$0.05	0.00	0.08	Ontario Power TRM
Chemical Mfg	Process	Clean Room: Change Filter Strategy	employee	Existing	611.45	15	\$4.51	0%	0%	\$0.00	0.00	0.05	7th Power Plan

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Chemical Mfg	Process	Clean Room: Chiller Optimize	employee	Existing	44.28	15	\$4.10	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Chemical Mfg	Process	Clean Room: Clean Room HVAC	employee	Existing	26.88	15	\$4.95	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Chemical Mfg	Process	Elec Chip Fab: Solidstate Chiller	employee	Existing	26.79	15	\$15.54	0%	0%	\$0.06	0.00	0.00	7th Power Plan
Chemical Mfg	Process	Elec Chip Fab: Eliminate Exhaust	employee	Existing	76.43	15	\$16.22	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Chemical Mfg	Process	Elec Chip Fab: Exhaust Injector	employee	Existing	152.34	15	\$78.26	0%	0%	\$0.06	0.00	1.55	7th Power Plan
Chemical Mfg	Process	Elec Chip Fab: Reduce Gas Pressure	employee	Existing	152.86	15	\$1.57	0%	0%	\$0.00	0.00	0.44	7th Power Plan
Chemical Mfg	Motors	Panel: Hydraulic Press	employee	Existing	306.44	10	\$77.49	0%	0%	\$0.03	0.00	10.65	7th Power Plan
Chemical Mfg	Motors	Wood: Replace Pneumatic Conveyor	employee	Existing	352.00	10	\$5.80	0%	0%	\$0.00	0.00	2.10	7th Power Plan
Chemical Mfg	Process	Metal: New Arc Furnace	employee	Existing	239.54	10	\$25.14	0%	0%	\$0.01	0.00	0.13	7th Power Plan
Chemical Mfg	Process	Paper: Premium Control Large Material	employee	Existing	102.56	10	\$51.59	0%	0%	\$0.07	0.00	2.84	7th Power Plan
Chemical Mfg	Process	Paper: Efficient Pulp Screen	employee	Existing	82.60	10	\$16.99	0%	0%	\$0.03	0.00	0.57	7th Power Plan
Chemical Mfg	Process	Kraft: Effluent Treatment System	employee	Existing	82.60	10	\$6.97	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Chemical Mfg	Motors	Kraft: Efficient Agitator	employee	Existing	571.47	10	\$57.82	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Chemical Mfg	Process	Mech Pulp: Premium Process	employee	Existing	0.92	5	\$0.12	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Chemical Mfg	Motors	Mech Pulp: Refiner Plate Improvement	employee	Existing	4.70	1	\$0.22	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Chemical Mfg	Cooling	Transformer - High Efficiency	employee	Existing	9.52	10	\$16.91	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Chemical Mfg	Heating	Transformer - High Efficiency	employee	Existing	17.89	10	\$16.91	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Chemical Mfg	Ventilation	Transformer - High Efficiency	employee	Existing	0.98	10	\$16.91	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Chemical Mfg	Interior Lighting	Transformer - High Efficiency	employee	Existing	2.64	10	\$16.91	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Chemical Mfg	Exterior Lighting	Transformer - High Efficiency	employee	Existing	0.57	10	\$16.91	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Chemical Mfg	Motors	Transformer - High Efficiency	employee	Existing	59.23	10	\$16.91	15%	15%	\$0.02	0.00	0.00	7th Power Plan

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Chemical Mfg	Process	Transformer - High Efficiency	employee	Existing	41.07	10	\$16.91	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Chemical Mfg	Miscellaneous	Transformer - High Efficiency	employee	Existing	5.43	10	\$16.91	15%	15%	\$0.02	0.00	0.17	7th Power Plan
Chemical Mfg	Cooling	Strategic Energy Management	employee	Existing	26.21	3	\$103.83	0%	5%	\$0.08	0.00	0.19	AEG Research
Chemical Mfg	Heating	Strategic Energy Management	employee	Existing	50.79	3	\$103.83	0%	5%	\$0.08	0.00	0.12	AEG Research
Chemical Mfg	Ventilation	Strategic Energy Management	employee	Existing	2.80	3	\$103.83	0%	5%	\$0.08	0.00	0.04	AEG Research
Chemical Mfg	Interior Lighting	Strategic Energy Management	employee	Existing	7.52	3	\$103.83	0%	5%	\$0.08	0.00	0.03	AEG Research
Chemical Mfg	Exterior Lighting	Strategic Energy Management	employee	Existing	1.64	3	\$103.83	0%	5%	\$0.08	0.00	0.00	AEG Research
Chemical Mfg	Motors	Strategic Energy Management	employee	Existing	169.46	3	\$103.83	0%	5%	\$0.08	0.06	0.00	AEG Research
Chemical Mfg	Process	Strategic Energy Management	employee	Existing	117.47	3	\$103.83	0%	5%	\$0.08	0.04	0.00	AEG Research
Chemical Mfg	Miscellaneous	Strategic Energy Management	employee	Existing	15.50	3	\$103.83	0%	5%	\$0.08	0.01	0.00	AEG Research
Chemical Mfg	Interior Lighting	Commissioning	employee	Existing	8.67	3	\$175.82	0%	0%	\$0.15	0.00	0.86	AEG Research
Chemical Mfg	Exterior Lighting	Commissioning	employee	Existing	1.89	3	\$175.82	0%	0%	\$0.15	0.00	0.22	AEG Research
Chemical Mfg	Motors	Commissioning	employee	Existing	195.29	3	\$175.82	0%	0%	\$0.15	0.00	6.15	AEG Research
Chemical Mfg	Process	Commissioning	employee	Existing	135.38	3	\$175.82	0%	0%	\$0.15	0.00	1.09	AEG Research
Chemical Mfg	Miscellaneous	Commissioning	employee	Existing	17.86	3	\$175.82	0%	0%	\$0.15	0.00	0.07	AEG Research
Chemical Mfg	Interior Lighting	Retrocommissioning	employee	Existing	8.81	3	\$111.61	5%	39%	\$0.10	0.02	1.63	AEG Research
Chemical Mfg	Exterior Lighting	Retrocommissioning	employee	Existing	1.90	3	\$111.61	5%	39%	\$0.10	0.00	0.29	AEG Research
Chemical Mfg	Motors	Retrocommissioning	employee	Existing	197.43	3	\$111.61	5%	39%	\$0.10	0.49	0.00	AEG Research
Chemical Mfg	Process	Retrocommissioning	employee	Existing	136.92	3	\$111.61	5%	39%	\$0.10	0.35	0.00	AEG Research
Chemical Mfg	Miscellaneous	Retrocommissioning	employee	Existing	18.08	3	\$111.61	5%	39%	\$0.10	0.06	0.00	AEG Research
Chemical Mfg	Motors	Municipal Sewage Treatment	employee	Existing	29.86	12	\$18.06	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Chemical Mfg	Motors	Municipal Water Supply Treatment	employee	Existing	0.00	12	\$0.00	0%	0%	\$0.00	0.00	0.00	7th Power Plan

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Chemical Mfg	Cooling	Insulation - Ceiling	sqft	New	0.12	45	\$1.28	15%	25%	\$0.15	0.00	0.00	Building Energy Simulation Tool
Chemical Mfg	Heating	Insulation - Ceiling	sqft	New	0.51	45	\$1.28	15%	25%	\$0.15	0.01	0.00	Building Energy Simulation Tool
Chemical Mfg	Ventilation	Insulation - Ceiling	sqft	New	0.01	45	\$1.28	15%	25%	\$0.15	0.00	0.00	Building Energy Simulation Tool
Chemical Mfg	Cooling	Insulation - Ducting	sqft	New	0.04	20	\$0.84	15%	25%	\$1.09	0.00	0.00	Building Energy Simulation Tool
Chemical Mfg	Heating	Insulation - Ducting	sqft	New	0.02	20	\$0.84	15%	25%	\$1.09	0.00	0.00	Building Energy Simulation Tool
Chemical Mfg	Ventilation	Insulation - Ducting	sqft	New	0.00	20	\$0.84	15%	25%	\$1.09	0.00	0.00	Building Energy Simulation Tool
Chemical Mfg	Cooling	Insulation - Wall Cavity	sqft	New	0.00	45	\$0.15	45%	50%	\$0.02	0.00	0.44	Building Energy Simulation Tool
Chemical Mfg	Heating	Insulation - Wall Cavity	sqft	New	0.71	45	\$0.15	45%	50%	\$0.02	0.01	0.59	Building Energy Simulation Tool
Chemical Mfg	Ventilation	Insulation - Wall Cavity	sqft	New	0.02	45	\$0.15	45%	50%	\$0.02	0.00	0.37	Building Energy Simulation Tool
Chemical Mfg	Cooling	HVAC - Duct Repair and Sealing	sqft	New	0.01	18	\$0.00	15%	25%	\$0.00	0.00	0.13	Building Energy Simulation Tool
Chemical Mfg	Heating	HVAC - Duct Repair and Sealing	sqft	New	0.05	18	\$0.00	15%	25%	\$0.00	0.00	0.08	Building Energy Simulation Tool
Chemical Mfg	Ventilation	HVAC - Duct Repair and Sealing	sqft	New	0.00	18	\$0.00	15%	25%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Chemical Mfg	Cooling	Chiller - Chilled Water Reset	sqft	New	0.04	10	\$0.01	15%	45%	\$0.03	0.00	0.00	AEG-BEST
Chemical Mfg	Cooling	Chiller - Chilled Water Variable-Flow System	sqft	New	0.20	15	\$0.50	15%	60%	\$0.25	0.00	0.00	AEG-BEST
Chemical Mfg	Cooling	Chiller - Variable Speed Fans	sqft	New	0.07	15	\$0.03	15%	75%	\$0.04	0.00	0.00	New Jersey TRM
Chemical Mfg	Cooling	HVAC - Economizer	sqft	New	0.16	10	\$0.25	18%	30%	\$0.19	0.00	2.56	AEG-BEST
Chemical Mfg	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.25	15%	35%	\$12.06	0.00	0.72	7th Power Plan
Chemical Mfg	Cooling	Destratification Fans (HVLS)	sqft	New	0.15	15	\$0.63	15%	50%	\$0.05	0.00	17.60	AEG Research
Chemical Mfg	Heating	Destratification Fans (HVLS)	sqft	New	1.30	15	\$0.63	15%	50%	\$0.05	0.04	3.50	AEG Research
Chemical Mfg	Cooling	RTU - Maintenance	sqft	New	0.08	3	\$0.07	15%	75%	\$0.27	0.00	0.22	AEG Research
Chemical Mfg	Cooling	Thermostat - WiFi/Interactive	sqft	New	0.27	5	\$0.66	5%	15%	\$0.09	0.00	4.70	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Chemical Mfg	Heating	Thermostat - WiFi/Interactive	sqft	New	1.20	5	\$0.66	5%	15%	\$0.09	0.00	0.94	7th Power Plan
Chemical Mfg	Ventilation	Thermostat - WiFi/Interactive	sqft	New	0.03	5	\$0.66	5%	15%	\$0.09	0.00	0.00	7th Power Plan
Chemical Mfg	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.19	15	\$0.35	22%	41%	\$0.14	0.02	0.00	7th Power Plan
Chemical Mfg	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.26	15	\$0.58	22%	41%	\$0.17	0.03	0.00	7th Power Plan
Chemical Mfg	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	New	0.02	15	\$0.00	1%	2%	\$0.01	0.00	0.00	7th Power Plan
Chemical Mfg	Interior Lighting	Interior Lighting - Timeclocks and Timers	sqft	New	0.00	8	\$0.00	7%	7%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Chemical Mfg	Interior Lighting	Interior Lighting - Skylights	sqft	New	0.00	15	\$1.01	18%	24%	\$0.00	0.00	0.00	AEG Research
Chemical Mfg	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	sqft	New	0.03	16	\$1.81	5%	40%	\$3.94	0.00	0.00	7th Power Plan
Chemical Mfg	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	New	0.03	11	\$0.00	15%	50%	\$0.01	0.00	0.00	Illinois TRM
Chemical Mfg	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	sqft	New	0.05	8	\$0.03	15%	25%	\$0.08	0.00	0.00	7th Power Plan
Chemical Mfg	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	New	0.02	8	\$0.02	44%	60%	\$0.08	0.00	0.00	Pacific Gas and Electric Research
Chemical Mfg	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	New	0.03	7	\$1.19	15%	30%	\$4.32	0.00	0.00	AEG Research
Chemical Mfg	Process	Process - Conductivity Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.26	N/A
Chemical Mfg	Process	Process - Timers and Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.31	N/A
Chemical Mfg	Motors	Process - Timers and Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.18	N/A
Chemical Mfg	Process	Refrigeration - Floating Head Pressure	employee	New	22.36	15	\$15.38	20%	50%	\$0.07	0.01	0.07	RTF Workbook
Chemical Mfg	Process	Refrigeration - System Optimization	employee	New	35.85	15	\$5.38	20%	50%	\$0.02	0.02	0.04	AEG Research
Chemical Mfg	Motors	Pumping System - Equipment Upgrade	employee	New	244.03	10	\$35.93	9%	38%	\$0.05	0.11	0.00	7th Power Plan
Chemical Mfg	Motors	Pumping System - System Optimization	employee	New	180.84	12	\$54.75	9%	38%	\$0.04	0.10	0.00	UNIDO Study on Industrial Energy Efficiency

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Chemical Mfg	Motors	Pumping System - Variable Speed Drive	employee	New	178.61	10	\$56.97	9%	38%	\$0.04	0.09	0.00	UNIDO Study on Industrial Energy Efficiency
Chemical Mfg	Motors	Fan System - Equipment Upgrade	employee	New	61.57	10	\$6.19	9%	38%	\$0.04	0.03	0.00	UNIDO Study on Industrial Energy Efficiency
Chemical Mfg	Motors	Fan System - Flow Optimization	employee	New	72.64	10	\$10.24	9%	38%	\$0.02	0.04	1.30	UNIDO Study on Industrial Energy Efficiency
Chemical Mfg	Motors	Fan System - Variable Speed Drive	employee	New	107.10	10	\$51.55	9%	38%	\$0.06	0.05	0.32	UNIDO Study on Industrial Energy Efficiency
Chemical Mfg	Motors	Compressed Air - Equipment Upgrade	employee	New	468.77	10	\$34.11	17%	50%	\$0.04	0.25	9.16	7th Power Plan
Chemical Mfg	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	New	0.00	15	\$0.00	16%	38%	\$0.00	0.00	1.53	Michigan Energy Measures Database
Chemical Mfg	Motors	Compressed Air - Refrigerated Cycling Dryers	employee	New	0.00	10	\$0.00	16%	30%	\$0.00	0.00	0.10	Michigan Energy Measures Database
Chemical Mfg	Motors	Compressed Air - System Controls	employee	New	101.62	10	\$24.39	9%	38%	\$0.03	0.05	2.43	UNIDO Study on Industrial Energy Efficiency
Chemical Mfg	Motors	Compressed Air - Leak Management Program	employee	New	263.66	10	\$24.52	18%	75%	\$0.04	0.24	0.41	7th Power Plan
Chemical Mfg	Motors	Compressed Air - Variable Speed Drive	employee	New	187.35	15	\$149.53	26%	45%	\$0.08	0.07	0.00	UNIDO Study on Industrial Energy Efficiency
Chemical Mfg	Motors	Compressed Air - Low Pressure-Drop Filters	employee	New	6.25	10	\$2.30	17%	50%	\$0.05	0.00	0.00	Illinois TRM
Chemical Mfg	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	New	38.37	10	\$7.48	17%	50%	\$0.03	0.02	0.00	UNIDO Study on Industrial Energy Efficiency
Chemical Mfg	Motors	Compressed Air - Outside Air Intake	employee	New	0.00	20	\$0.00	17%	50%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Chemical Mfg	Motors	Compressed Air - Receiver Capacity Addition	employee	New	37.92	15	\$20.56	17%	50%	\$0.06	0.02	0.00	UNIDO Study on Industrial Energy Efficiency
Chemical Mfg	Motors	Material Handling - Variable Speed Drive	employee	New	212.98	10	\$77.53	25%	45%	\$0.05	0.08	0.00	7th Power Plan
Chemical Mfg	Motors	Motors - Green Rewind (<100 HP)	employee	New	7.61	10	\$3.36	10%	50%	\$0.06	0.03	0.00	7th Power Plan
Chemical Mfg	Motors	Motors - Green Rewind (100 HP+)	employee	New	4.29	10	\$1.19	6%	25%	\$0.04	0.01	0.00	7th Power Plan
Chemical Mfg	Motors	Switch from Belt Drive to Direct Drive	employee	New	65.46	12	\$14.73	16%	25%	\$0.03	0.06	0.00	2015-mdu-irp-report---volume-iii.pdf
Chemical Mfg	Motors	Motors - Synchronous Belts	employee	New	17.22	10	\$4.43	16%	36%	\$0.03	0.03	0.00	7th Power Plan

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Chemical Mfg	Miscellaneous	Agriculture - Engine Block Timer	employee	New	143.34	3	\$1.77	0%	0%	\$0.00	0.00	0.00	Vermont TRM
Chemical Mfg	Motors	Agriculture - Live Stock Waterer	employee	New	584.05	10	\$316.41	0%	0%	\$0.07	0.00	0.02	Ontario Power TRM
Chemical Mfg	Process	Dairy - Milk Precoolers	employee	New	149.07	15	\$69.23	0%	0%	\$0.05	0.00	0.03	Ontario Power TRM
Chemical Mfg	Process	Clean Room: Change Filter Strategy	employee	New	611.45	15	\$4.51	0%	0%	\$0.00	0.00	0.02	7th Power Plan
Chemical Mfg	Process	Clean Room: Chiller Optimize	employee	New	44.28	15	\$4.10	0%	0%	\$0.01	0.00	0.01	7th Power Plan
Chemical Mfg	Process	Clean Room: Clean Room HVAC	employee	New	26.83	15	\$4.95	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Chemical Mfg	Process	Elec Chip Fab: Solidstate Chiller	employee	New	26.83	15	\$15.54	0%	0%	\$0.06	0.00	0.00	7th Power Plan
Chemical Mfg	Process	Elec Chip Fab: Eliminate Exhaust	employee	New	76.28	15	\$16.22	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Chemical Mfg	Process	Elec Chip Fab: Exhaust Injector	employee	New	152.57	15	\$78.26	0%	0%	\$0.06	0.00	0.00	7th Power Plan
Chemical Mfg	Process	Elec Chip Fab: Reduce Gas Pressure	employee	New	152.86	15	\$1.57	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Chemical Mfg	Motors	Panel: Hydraulic Press	employee	New	321.34	10	\$77.49	0%	0%	\$0.03	0.00	0.11	7th Power Plan
Chemical Mfg	Motors	Wood: Replace Pneumatic Conveyor	employee	New	352.00	10	\$5.80	0%	0%	\$0.00	0.00	0.02	7th Power Plan
Chemical Mfg	Process	Metal: New Arc Furnace	employee	New	239.07	10	\$25.14	0%	0%	\$0.01	0.00	0.52	7th Power Plan
Chemical Mfg	Process	Paper: Premium Control Large Material	employee	New	102.81	10	\$51.59	0%	0%	\$0.07	0.00	0.10	7th Power Plan
Chemical Mfg	Process	Paper: Efficient Pulp Screen	employee	New	82.44	10	\$16.99	0%	0%	\$0.03	0.00	0.01	7th Power Plan
Chemical Mfg	Process	Kraft: Effluent Treatment System	employee	New	82.44	10	\$6.97	0%	0%	\$0.01	0.00	0.14	7th Power Plan
Chemical Mfg	Motors	Kraft: Efficient Agitator	employee	New	588.15	10	\$57.82	0%	0%	\$0.01	0.00	0.03	7th Power Plan
Chemical Mfg	Process	Mech Pulp: Premium Process	employee	New	0.92	5	\$0.12	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Chemical Mfg	Motors	Mech Pulp: Refiner Plate Improvement	employee	New	5.01	1	\$0.22	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Chemical Mfg	Cooling	Transformer - High Efficiency	employee	New	8.81	10	\$16.67	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Chemical Mfg	Heating	Transformer - High Efficiency	employee	New	17.64	10	\$16.67	15%	15%	\$0.02	0.00	0.00	7th Power Plan

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Chemical Mfg	Ventilation	Transformer - High Efficiency	employee	New	0.73	10	\$16.67	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Chemical Mfg	Interior Lighting	Transformer - High Efficiency	employee	New	2.51	10	\$16.67	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Chemical Mfg	Exterior Lighting	Transformer - High Efficiency	employee	New	0.56	10	\$16.67	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Chemical Mfg	Motors	Transformer - High Efficiency	employee	New	63.12	10	\$16.67	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Chemical Mfg	Process	Transformer - High Efficiency	employee	New	41.17	10	\$16.67	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Chemical Mfg	Miscellaneous	Transformer - High Efficiency	employee	New	5.14	10	\$16.67	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Chemical Mfg	Cooling	Strategic Energy Management	employee	New	24.96	3	\$102.36	0%	5%	\$0.08	0.00	0.00	AEG Research
Chemical Mfg	Heating	Strategic Energy Management	employee	New	50.68	3	\$102.36	0%	5%	\$0.08	0.00	0.01	AEG Research
Chemical Mfg	Ventilation	Strategic Energy Management	employee	New	2.11	3	\$102.36	0%	5%	\$0.08	0.00	0.01	AEG Research
Chemical Mfg	Interior Lighting	Strategic Energy Management	employee	New	7.24	3	\$102.36	0%	5%	\$0.08	0.00	0.01	AEG Research
Chemical Mfg	Exterior Lighting	Strategic Energy Management	employee	New	1.62	3	\$102.36	0%	5%	\$0.08	0.00	0.00	AEG Research
Chemical Mfg	Motors	Strategic Energy Management	employee	New	182.36	3	\$102.36	0%	5%	\$0.08	0.00	0.00	AEG Research
Chemical Mfg	Process	Strategic Energy Management	employee	New	118.94	3	\$102.36	0%	5%	\$0.08	0.00	0.00	AEG Research
Chemical Mfg	Miscellaneous	Strategic Energy Management	employee	New	14.84	3	\$102.36	0%	5%	\$0.08	0.00	0.00	AEG Research
Chemical Mfg	Interior Lighting	Commissioning	employee	New	8.35	3	\$176.21	5%	39%	\$0.15	0.00	0.00	AEG Research
Chemical Mfg	Exterior Lighting	Commissioning	employee	New	1.87	3	\$176.21	5%	39%	\$0.15	0.00	0.00	AEG Research
Chemical Mfg	Motors	Commissioning	employee	New	210.36	3	\$176.21	5%	39%	\$0.15	0.01	0.07	AEG Research
Chemical Mfg	Process	Commissioning	employee	New	137.21	3	\$176.21	5%	39%	\$0.15	0.01	0.01	AEG Research
Chemical Mfg	Miscellaneous	Commissioning	employee	New	17.12	3	\$176.21	5%	39%	\$0.15	0.00	0.33	AEG Research
Chemical Mfg	Interior Lighting	Retrocommissioning	employee	New	8.38	3	\$111.86	0%	0%	\$0.10	0.00	0.06	AEG Research

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Chemical Mfg	Exterior Lighting	Retrocommissioning	employee	New	1.87	3	\$111.86	0%	0%	\$0.10	0.00	0.00	AEG Research
Chemical Mfg	Motors	Retrocommissioning	employee	New	210.42	3	\$111.86	0%	0%	\$0.10	0.00	0.09	AEG Research
Chemical Mfg	Process	Retrocommissioning	employee	New	137.24	3	\$111.86	0%	0%	\$0.10	0.00	0.02	AEG Research
Chemical Mfg	Miscellaneous	Retrocommissioning	employee	New	17.13	3	\$111.86	0%	0%	\$0.10	0.00	0.00	AEG Research
Chemical Mfg	Motors	Municipal Sewage Treatment	employee	New	31.72	12	\$18.06	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Chemical Mfg	Motors	Municipal Water Supply Treatment	employee	New	0.00	12	\$0.00	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Cooling	Insulation - Ceiling	sqft	Existing	0.12	45	\$1.28	15%	25%	\$0.14	0.40	0.00	Building Energy Simulation Tool
Electronic Equipment Mfg	Heating	Insulation - Ceiling	sqft	Existing	0.52	45	\$1.28	15%	25%	\$0.14	1.81	0.00	Building Energy Simulation Tool
Electronic Equipment Mfg	Ventilation	Insulation - Ceiling	sqft	Existing	0.02	45	\$1.28	15%	25%	\$0.14	0.27	0.00	Building Energy Simulation Tool
Electronic Equipment Mfg	Cooling	Insulation - Ducting	sqft	Existing	0.05	20	\$0.84	15%	25%	\$1.01	0.15	0.00	Building Energy Simulation Tool
Electronic Equipment Mfg	Heating	Insulation - Ducting	sqft	Existing	0.02	20	\$0.84	15%	25%	\$1.01	0.07	0.00	Building Energy Simulation Tool
Electronic Equipment Mfg	Ventilation	Insulation - Ducting	sqft	Existing	0.00	20	\$0.84	15%	25%	\$1.01	0.01	0.00	Building Energy Simulation Tool
Electronic Equipment Mfg	Cooling	Insulation - Wall Cavity	sqft	Existing	0.00	45	\$0.15	45%	50%	\$0.02	0.00	0.00	Building Energy Simulation Tool
Electronic Equipment Mfg	Heating	Insulation - Wall Cavity	sqft	Existing	0.76	45	\$0.15	45%	50%	\$0.02	1.37	0.00	Building Energy Simulation Tool
Electronic Equipment Mfg	Ventilation	Insulation - Wall Cavity	sqft	Existing	0.02	45	\$0.15	45%	50%	\$0.02	0.18	0.19	Building Energy Simulation Tool
Electronic Equipment Mfg	Cooling	HVAC - Duct Repair and Sealing	sqft	Existing	0.02	18	\$0.00	15%	25%	\$0.00	0.05	0.25	Building Energy Simulation Tool
Electronic Equipment Mfg	Heating	HVAC - Duct Repair and Sealing	sqft	Existing	0.05	18	\$0.00	15%	25%	\$0.00	0.19	0.15	Building Energy Simulation Tool
Electronic Equipment Mfg	Ventilation	HVAC - Duct Repair and Sealing	sqft	Existing	0.00	18	\$0.00	15%	25%	\$0.00	0.03	0.05	Building Energy Simulation Tool
Electronic Equipment Mfg	Cooling	Chiller - Chilled Water Reset	sqft	Existing	0.04	10	\$0.01	15%	45%	\$0.03	0.16	0.03	AEG-BEST
Electronic Equipment Mfg	Cooling	Chiller - Chilled Water Variable-Flow System	sqft	Existing	0.24	15	\$0.50	15%	60%	\$0.21	1.29	0.00	AEG-BEST

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Electronic Equipment Mfg	Cooling	Chiller - Variable Speed Fans	sqft	Existing	0.09	15	\$0.03	15%	75%	\$0.04	0.65	0.00	New Jersey TRM
Electronic Equipment Mfg	Cooling	HVAC - Economizer	sqft	Existing	2.09	10	\$0.25	18%	30%	\$0.02	0.73	0.00	AEG-BEST
Electronic Equipment Mfg	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.25	15%	35%	\$10.33	0.09	0.00	7th Power Plan
Electronic Equipment Mfg	Cooling	Destratification Fans (HVLS)	sqft	Existing	0.16	15	\$0.63	15%	50%	\$0.04	1.87	1.07	AEG Research
Electronic Equipment Mfg	Heating	Destratification Fans (HVLS)	sqft	Existing	1.38	15	\$0.63	15%	50%	\$0.04	17.91	0.20	AEG Research
Electronic Equipment Mfg	Cooling	RTU - Maintenance	sqft	Existing	0.08	3	\$0.07	15%	75%	\$0.26	1.35	4.86	AEG Research
Electronic Equipment Mfg	Cooling	Thermostat - WiFi/Interactive	sqft	Existing	0.29	5	\$0.66	5%	15%	\$0.09	0.93	0.96	7th Power Plan
Electronic Equipment Mfg	Heating	Thermostat - WiFi/Interactive	sqft	Existing	1.21	5	\$0.66	5%	15%	\$0.09	4.23	0.06	7th Power Plan
Electronic Equipment Mfg	Ventilation	Thermostat - WiFi/Interactive	sqft	Existing	0.04	5	\$0.66	5%	15%	\$0.09	0.62	1.30	7th Power Plan
Electronic Equipment Mfg	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	2.35	15	\$0.35	7%	33%	\$0.01	3.30	0.26	7th Power Plan
Electronic Equipment Mfg	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	3.19	15	\$0.58	7%	33%	\$0.01	4.34	0.00	7th Power Plan
Electronic Equipment Mfg	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	Existing	0.02	15	\$0.00	1%	2%	\$0.01	0.02	0.00	7th Power Plan
Electronic Equipment Mfg	Interior Lighting	Interior Lighting - Timeclocks and Timers	sqft	Existing	0.00	8	\$0.00	7%	7%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Electronic Equipment Mfg	Interior Lighting	Interior Lighting - Skylights	sqft	Existing	0.00	15	\$1.01	15%	23%	\$0.00	0.00	0.00	AEG Research
Electronic Equipment Mfg	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	sqft	Existing	0.03	16	\$1.81	5%	40%	\$3.95	0.48	0.00	7th Power Plan
Electronic Equipment Mfg	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	Existing	0.03	11	\$0.00	15%	50%	\$0.01	0.52	0.00	Illinois TRM
Electronic Equipment Mfg	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	sqft	Existing	0.05	8	\$0.03	15%	25%	\$0.08	0.66	0.00	7th Power Plan
Electronic Equipment Mfg	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	Existing	0.03	8	\$0.02	33%	60%	\$0.08	0.92	0.00	Pacific Gas and Electric Research
Electronic Equipment Mfg	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	Existing	0.03	7	\$1.19	15%	30%	\$4.39	0.57	0.00	AEG Research

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Electronic Equipment Mfg	Process	Process - Conductivity Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Process	Process - Timers and Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Motors	Process - Timers and Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.11	N/A
Electronic Equipment Mfg	Process	Refrigeration - Floating Head Pressure	employee	Existing	312.48	15	\$318.45	20%	50%	\$0.11	1.21	0.13	RTF Workbook
Electronic Equipment Mfg	Process	Refrigeration - System Optimization	employee	Existing	507.65	15	\$224.25	20%	50%	\$0.05	1.97	0.08	AEG Research
Electronic Equipment Mfg	Motors	Pumping System - Equipment Upgrade	employee	Existing	238.07	10	\$35.44	9%	38%	\$0.05	0.88	0.03	7th Power Plan
Electronic Equipment Mfg	Motors	Pumping System - System Optimization	employee	Existing	176.66	12	\$54.01	9%	38%	\$0.04	0.64	0.02	UNIDO Study on Industrial Energy Efficiency
Electronic Equipment Mfg	Motors	Pumping System - Variable Speed Drive	employee	Existing	174.53	10	\$56.19	9%	38%	\$0.04	0.63	0.00	UNIDO Study on Industrial Energy Efficiency
Electronic Equipment Mfg	Motors	Fan System - Equipment Upgrade	employee	Existing	210.73	10	\$21.39	9%	38%	\$0.04	0.76	0.00	UNIDO Study on Industrial Energy Efficiency
Electronic Equipment Mfg	Motors	Fan System - Flow Optimization	employee	Existing	248.38	10	\$35.38	9%	38%	\$0.02	0.90	0.00	UNIDO Study on Industrial Energy Efficiency
Electronic Equipment Mfg	Motors	Fan System - Variable Speed Drive	employee	Existing	361.99	10	\$178.05	9%	38%	\$0.06	1.29	0.00	UNIDO Study on Industrial Energy Efficiency
Electronic Equipment Mfg	Motors	Compressed Air - Equipment Upgrade	employee	Existing	1,263.21	10	\$91.92	17%	50%	\$0.04	5.53	0.57	7th Power Plan
Electronic Equipment Mfg	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	Existing	0.00	15	\$0.00	16%	38%	\$0.00	0.00	0.09	Michigan Energy Measures Database
Electronic Equipment Mfg	Motors	Compressed Air - Refrigerated Cycling Dryers	employee	Existing	0.00	10	\$0.00	16%	30%	\$0.00	0.00	2.65	Michigan Energy Measures Database
Electronic Equipment Mfg	Motors	Compressed Air - System Controls	employee	Existing	272.12	10	\$65.72	9%	38%	\$0.03	1.00	0.45	UNIDO Study on Industrial Energy Efficiency
Electronic Equipment Mfg	Motors	Compressed Air - Leak Management Program	employee	Existing	707.18	10	\$66.07	18%	75%	\$0.04	5.28	0.03	7th Power Plan
Electronic Equipment Mfg	Motors	Compressed Air - Variable Speed Drive	employee	Existing	494.94	15	\$402.93	26%	45%	\$0.08	1.21	0.70	UNIDO Study on Industrial Energy Efficiency
Electronic Equipment Mfg	Motors	Compressed Air - Low Pressure-Drop Filters	employee	Existing	16.50	10	\$6.21	17%	50%	\$0.05	0.07	0.12	Illinois TRM
Electronic Equipment Mfg	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	Existing	102.45	10	\$20.15	17%	50%	\$0.03	0.44	0.00	UNIDO Study on Industrial Energy Efficiency

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Electronic Equipment Mfg	Motors	Compressed Air - Outside Air Intake	employee	Existing	0.00	20	\$0.00	17%	50%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Electronic Equipment Mfg	Motors	Compressed Air - Receiver Capacity Addition	employee	Existing	101.22	15	\$55.40	17%	50%	\$0.06	0.44	0.00	UNIDO Study on Industrial Energy Efficiency
Electronic Equipment Mfg	Motors	Material Handling - Variable Speed Drive	employee	Existing	1,967.59	10	\$720.77	25%	45%	\$0.05	4.95	0.00	7th Power Plan
Electronic Equipment Mfg	Motors	Motors - Green Rewind (<100 HP)	employee	Existing	37.12	10	\$16.70	10%	50%	\$0.06	0.74	0.00	7th Power Plan
Electronic Equipment Mfg	Motors	Motors - Green Rewind (100 HP+)	employee	Existing	21.21	10	\$5.93	6%	25%	\$0.04	0.20	0.00	7th Power Plan
Electronic Equipment Mfg	Motors	Switch from Belt Drive to Direct Drive	employee	Existing	323.52	12	\$73.31	16%	25%	\$0.03	1.56	0.00	2015-mdu-irp-report---volume-iii.pdf
Electronic Equipment Mfg	Motors	Motors - Synchronous Belts	employee	Existing	85.12	10	\$22.05	16%	36%	\$0.03	0.88	0.00	7th Power Plan
Electronic Equipment Mfg	Miscellaneous	Agriculture - Engine Block Timer	employee	Existing	4,520.93	3	\$55.77	0%	0%	\$0.00	0.00	0.00	Vermont TRM
Electronic Equipment Mfg	Motors	Agriculture - Live Stock Waterer	employee	Existing	562.91	10	\$312.11	0%	0%	\$0.07	0.00	0.00	Ontario Power TRM
Electronic Equipment Mfg	Process	Dairy - Milk Precoolers	employee	Existing	2,104.97	15	\$1,013.34	0%	0%	\$0.05	0.00	0.00	Ontario Power TRM
Electronic Equipment Mfg	Process	Clean Room: Change Filter Strategy	employee	Existing	657.21	15	\$4.85	15%	75%	\$0.00	0.00	2.64	7th Power Plan
Electronic Equipment Mfg	Process	Clean Room: Chiller Optimize	employee	Existing	639.02	15	\$60.00	15%	75%	\$0.01	4.90	3.46	7th Power Plan
Electronic Equipment Mfg	Process	Clean Room: Clean Room HVAC	employee	Existing	383.82	15	\$72.43	15%	75%	\$0.02	2.93	2.20	7th Power Plan
Electronic Equipment Mfg	Process	Elec Chip Fab: Solidstate Chiller	employee	Existing	377.74	15	\$227.51	15%	75%	\$0.06	2.95	0.77	7th Power Plan
Electronic Equipment Mfg	Process	Elec Chip Fab: Eliminate Exhaust	employee	Existing	79.61	15	\$17.44	15%	75%	\$0.02	0.62	0.46	7th Power Plan
Electronic Equipment Mfg	Process	Elec Chip Fab: Exhaust Injector	employee	Existing	158.20	15	\$84.12	15%	75%	\$0.06	1.23	0.00	7th Power Plan
Electronic Equipment Mfg	Process	Elec Chip Fab: Reduce Gas Pressure	employee	Existing	162.50	15	\$1.69	15%	75%	\$0.00	1.28	0.00	7th Power Plan
Electronic Equipment Mfg	Motors	Panel: Hydraulic Press	employee	Existing	2,977.68	10	\$720.34	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Motors	Wood: Replace Pneumatic Conveyor	employee	Existing	3,272.29	10	\$53.95	0%	0%	\$0.00	0.00	0.00	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Electronic Equipment Mfg	Process	Metal: New Arc Furnace	employee	Existing	4,105.70	10	\$444.75	0%	0%	\$0.01	0.00	15.23	7th Power Plan
Electronic Equipment Mfg	Process	Paper: Premium Control Large Material	employee	Existing	998.81	10	\$525.93	0%	0%	\$0.07	0.00	6.73	7th Power Plan
Electronic Equipment Mfg	Process	Paper: Efficient Pulp Screen	employee	Existing	814.77	10	\$173.24	0%	0%	\$0.03	0.00	164.88	7th Power Plan
Electronic Equipment Mfg	Process	Kraft: Effluent Treatment System	employee	Existing	821.36	10	\$71.03	0%	0%	\$0.01	0.00	32.84	7th Power Plan
Electronic Equipment Mfg	Motors	Kraft: Efficient Agitator	employee	Existing	5,417.79	10	\$537.54	0%	0%	\$0.01	0.00	2.06	7th Power Plan
Electronic Equipment Mfg	Process	Mech Pulp: Premium Process	employee	Existing	8.98	5	\$1.22	0%	0%	\$0.03	0.00	44.00	7th Power Plan
Electronic Equipment Mfg	Motors	Mech Pulp: Refiner Plate Improvement	employee	Existing	45.47	1	\$2.05	0%	0%	\$0.04	0.00	8.88	7th Power Plan
Electronic Equipment Mfg	Cooling	Transformer - High Efficiency	employee	Existing	476.30	10	\$289.47	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Heating	Transformer - High Efficiency	employee	Existing	901.95	10	\$289.47	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Ventilation	Transformer - High Efficiency	employee	Existing	49.29	10	\$289.47	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Interior Lighting	Transformer - High Efficiency	employee	Existing	86.33	10	\$289.47	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Exterior Lighting	Transformer - High Efficiency	employee	Existing	18.65	10	\$289.47	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Motors	Transformer - High Efficiency	employee	Existing	245.62	10	\$289.47	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Process	Transformer - High Efficiency	employee	Existing	400.01	10	\$289.47	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Miscellaneous	Transformer - High Efficiency	employee	Existing	171.11	10	\$289.47	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Cooling	Strategic Energy Management	employee	Existing	1,321.17	3	\$1,777.84	0%	5%	\$0.08	0.14	0.00	AEG Research
Electronic Equipment Mfg	Heating	Strategic Energy Management	employee	Existing	2,560.45	3	\$1,777.84	0%	5%	\$0.08	0.30	0.00	AEG Research
Electronic Equipment Mfg	Ventilation	Strategic Energy Management	employee	Existing	141.16	3	\$1,777.84	0%	5%	\$0.08	0.08	0.00	AEG Research
Electronic Equipment Mfg	Interior Lighting	Strategic Energy Management	employee	Existing	245.66	3	\$1,777.84	0%	5%	\$0.08	0.12	1.52	AEG Research

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Electronic Equipment Mfg	Exterior Lighting	Strategic Energy Management	employee	Existing	53.42	3	\$1,777.84	0%	5%	\$0.08	0.03	1.82	AEG Research
Electronic Equipment Mfg	Motors	Strategic Energy Management	employee	Existing	702.66	3	\$1,777.84	0%	5%	\$0.08	0.41	1.07	AEG Research
Electronic Equipment Mfg	Process	Strategic Energy Management	employee	Existing	1,144.18	3	\$1,777.84	0%	5%	\$0.08	0.68	0.39	AEG Research
Electronic Equipment Mfg	Miscellaneous	Strategic Energy Management	employee	Existing	488.91	3	\$1,777.84	0%	5%	\$0.08	0.37	0.23	AEG Research
Electronic Equipment Mfg	Interior Lighting	Commissioning	employee	Existing	283.14	3	\$1,297.84	0%	0%	\$0.13	0.00	0.00	AEG Research
Electronic Equipment Mfg	Exterior Lighting	Commissioning	employee	Existing	61.57	3	\$1,297.84	0%	0%	\$0.13	0.00	0.00	AEG Research
Electronic Equipment Mfg	Motors	Commissioning	employee	Existing	809.76	3	\$1,297.84	0%	0%	\$0.13	0.00	0.00	AEG Research
Electronic Equipment Mfg	Process	Commissioning	employee	Existing	1,318.55	3	\$1,297.84	0%	0%	\$0.13	0.00	0.00	AEG Research
Electronic Equipment Mfg	Miscellaneous	Commissioning	employee	Existing	563.34	3	\$1,297.84	0%	0%	\$0.13	0.00	7.61	AEG Research
Electronic Equipment Mfg	Interior Lighting	Retrocommissioning	employee	Existing	287.76	3	\$823.90	5%	39%	\$0.08	0.95	2.92	AEG Research
Electronic Equipment Mfg	Exterior Lighting	Retrocommissioning	employee	Existing	62.17	3	\$823.90	5%	39%	\$0.08	0.21	84.03	AEG Research
Electronic Equipment Mfg	Motors	Retrocommissioning	employee	Existing	818.73	3	\$823.90	5%	39%	\$0.08	3.28	13.84	AEG Research
Electronic Equipment Mfg	Process	Retrocommissioning	employee	Existing	1,333.36	3	\$823.90	5%	39%	\$0.08	5.42	0.89	AEG Research
Electronic Equipment Mfg	Miscellaneous	Retrocommissioning	employee	Existing	570.37	3	\$823.90	5%	39%	\$0.08	2.98	22.29	AEG Research
Electronic Equipment Mfg	Motors	Municipal Sewage Treatment	employee	Existing	30.65	12	\$17.82	0%	0%	\$0.07	0.00	3.74	7th Power Plan
Electronic Equipment Mfg	Motors	Municipal Water Supply Treatment	employee	Existing	0.00	12	\$0.00	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Cooling	Insulation - Ceiling	sqft	New	0.11	45	\$1.28	15%	25%	\$0.15	0.11	0.00	Building Energy Simulation Tool
Electronic Equipment Mfg	Heating	Insulation - Ceiling	sqft	New	0.51	45	\$1.28	15%	25%	\$0.15	0.51	0.00	Building Energy Simulation Tool
Electronic Equipment Mfg	Ventilation	Insulation - Ceiling	sqft	New	0.01	45	\$1.28	15%	25%	\$0.15	0.06	0.00	Building Energy Simulation Tool

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Electronic Equipment Mfg	Cooling	Insulation - Ducting	sqft	New	0.04	20	\$0.84	15%	25%	\$1.09	0.04	0.00	Building Energy Simulation Tool
Electronic Equipment Mfg	Heating	Insulation - Ducting	sqft	New	0.02	20	\$0.84	15%	25%	\$1.09	0.02	0.00	Building Energy Simulation Tool
Electronic Equipment Mfg	Ventilation	Insulation - Ducting	sqft	New	0.00	20	\$0.84	15%	25%	\$1.09	0.00	0.00	Building Energy Simulation Tool
Electronic Equipment Mfg	Cooling	Insulation - Wall Cavity	sqft	New	0.00	45	\$0.15	45%	50%	\$0.02	0.00	0.00	Building Energy Simulation Tool
Electronic Equipment Mfg	Heating	Insulation - Wall Cavity	sqft	New	0.71	45	\$0.15	45%	50%	\$0.02	0.36	0.00	Building Energy Simulation Tool
Electronic Equipment Mfg	Ventilation	Insulation - Wall Cavity	sqft	New	0.01	45	\$0.15	45%	50%	\$0.02	0.04	0.00	Building Energy Simulation Tool
Electronic Equipment Mfg	Cooling	HVAC - Duct Repair and Sealing	sqft	New	0.01	18	\$0.00	15%	25%	\$0.00	0.01	0.00	Building Energy Simulation Tool
Electronic Equipment Mfg	Heating	HVAC - Duct Repair and Sealing	sqft	New	0.05	18	\$0.00	15%	25%	\$0.00	0.05	0.40	Building Energy Simulation Tool
Electronic Equipment Mfg	Ventilation	HVAC - Duct Repair and Sealing	sqft	New	0.00	18	\$0.00	15%	25%	\$0.00	0.01	0.53	Building Energy Simulation Tool
Electronic Equipment Mfg	Cooling	Chiller - Chilled Water Reset	sqft	New	0.04	10	\$0.01	15%	45%	\$0.03	0.02	0.33	AEG-BEST
Electronic Equipment Mfg	Cooling	Chiller - Chilled Water Variable-Flow System	sqft	New	0.20	15	\$0.50	15%	60%	\$0.25	0.21	0.12	AEG-BEST
Electronic Equipment Mfg	Cooling	Chiller - Variable Speed Fans	sqft	New	0.07	15	\$0.03	15%	75%	\$0.04	0.10	0.07	New Jersey TRM
Electronic Equipment Mfg	Cooling	HVAC - Economizer	sqft	New	1.88	10	\$0.25	18%	30%	\$0.02	0.10	0.00	AEG-BEST
Electronic Equipment Mfg	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.25	15%	35%	\$12.05	0.01	0.00	7th Power Plan
Electronic Equipment Mfg	Cooling	Destratification Fans (HVLS)	sqft	New	0.15	15	\$0.63	15%	50%	\$0.05	0.29	0.00	AEG Research
Electronic Equipment Mfg	Heating	Destratification Fans (HVLS)	sqft	New	1.30	15	\$0.63	15%	50%	\$0.05	2.77	0.00	AEG Research
Electronic Equipment Mfg	Cooling	RTU - Maintenance	sqft	New	0.08	3	\$0.07	15%	75%	\$0.27	0.08	2.30	AEG Research
Electronic Equipment Mfg	Cooling	Thermostat - WiFi/Interactive	sqft	New	0.27	5	\$0.66	5%	15%	\$0.09	0.03	0.63	7th Power Plan
Electronic Equipment Mfg	Heating	Thermostat - WiFi/Interactive	sqft	New	1.20	5	\$0.66	5%	15%	\$0.09	0.16	15.42	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Electronic Equipment Mfg	Ventilation	Thermostat - WiFi/Interactive	sqft	New	0.03	5	\$0.66	5%	15%	\$0.09	0.02	3.06	7th Power Plan
Electronic Equipment Mfg	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	2.11	15	\$0.35	22%	41%	\$0.01	1.00	0.19	7th Power Plan
Electronic Equipment Mfg	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	2.88	15	\$0.58	22%	41%	\$0.01	1.36	4.12	7th Power Plan
Electronic Equipment Mfg	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	New	0.02	15	\$0.00	1%	2%	\$0.01	0.00	0.83	7th Power Plan
Electronic Equipment Mfg	Interior Lighting	Interior Lighting - Timeclocks and Timers	sqft	New	0.00	8	\$0.00	7%	7%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Electronic Equipment Mfg	Interior Lighting	Interior Lighting - Skylights	sqft	New	0.00	15	\$1.01	18%	24%	\$0.00	0.00	0.00	AEG Research
Electronic Equipment Mfg	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	sqft	New	0.03	16	\$1.81	5%	40%	\$3.94	0.10	0.00	7th Power Plan
Electronic Equipment Mfg	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	New	0.03	11	\$0.00	15%	50%	\$0.01	0.08	0.00	Illinois TRM
Electronic Equipment Mfg	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	sqft	New	0.04	8	\$0.03	15%	25%	\$0.08	0.08	0.00	7th Power Plan
Electronic Equipment Mfg	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	New	0.02	8	\$0.02	44%	60%	\$0.08	0.07	0.00	Pacific Gas and Electric Research
Electronic Equipment Mfg	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	New	0.03	7	\$1.19	15%	30%	\$4.34	0.07	0.00	AEG Research
Electronic Equipment Mfg	Process	Process - Conductivity Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Process	Process - Timers and Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Motors	Process - Timers and Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Process	Refrigeration - Floating Head Pressure	employee	New	319.07	15	\$225.06	20%	50%	\$0.07	0.23	0.00	RTF Workbook
Electronic Equipment Mfg	Process	Refrigeration - System Optimization	employee	New	517.08	15	\$78.70	20%	50%	\$0.02	0.38	0.23	AEG Research
Electronic Equipment Mfg	Motors	Pumping System - Equipment Upgrade	employee	New	243.75	10	\$35.44	9%	38%	\$0.05	0.14	0.28	7th Power Plan
Electronic Equipment Mfg	Motors	Pumping System - System Optimization	employee	New	181.77	12	\$54.01	9%	38%	\$0.04	0.14	0.17	UNIDO Study on Industrial Energy Efficiency
Electronic Equipment Mfg	Motors	Pumping System - Variable Speed Drive	employee	New	180.63	10	\$56.19	9%	38%	\$0.04	0.12	0.06	UNIDO Study on Industrial Energy Efficiency

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Electronic Equipment Mfg	Motors	Fan System - Equipment Upgrade	employee	New	215.19	10	\$21.39	9%	38%	\$0.04	0.15	0.04	UNIDO Study on Industrial Energy Efficiency
Electronic Equipment Mfg	Motors	Fan System - Flow Optimization	employee	New	253.94	10	\$35.38	9%	38%	\$0.02	0.17	0.00	UNIDO Study on Industrial Energy Efficiency
Electronic Equipment Mfg	Motors	Fan System - Variable Speed Drive	employee	New	379.37	10	\$178.05	9%	38%	\$0.06	0.26	0.00	UNIDO Study on Industrial Energy Efficiency
Electronic Equipment Mfg	Motors	Compressed Air - Equipment Upgrade	employee	New	1,263.21	10	\$91.92	17%	50%	\$0.04	0.85	0.00	7th Power Plan
Electronic Equipment Mfg	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	New	0.00	15	\$0.00	16%	38%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Electronic Equipment Mfg	Motors	Compressed Air - Refrigerated Cycling Dryers	employee	New	0.00	10	\$0.00	16%	30%	\$0.00	0.00	1.18	Michigan Energy Measures Database
Electronic Equipment Mfg	Motors	Compressed Air - System Controls	employee	New	280.25	10	\$65.72	9%	38%	\$0.03	0.16	0.28	UNIDO Study on Industrial Energy Efficiency
Electronic Equipment Mfg	Motors	Compressed Air - Leak Management Program	employee	New	714.74	10	\$66.07	18%	75%	\$0.04	0.83	8.12	7th Power Plan
Electronic Equipment Mfg	Motors	Compressed Air - Variable Speed Drive	employee	New	516.91	15	\$402.93	26%	45%	\$0.08	0.24	1.37	UNIDO Study on Industrial Energy Efficiency
Electronic Equipment Mfg	Motors	Compressed Air - Low Pressure-Drop Filters	employee	New	17.23	10	\$6.21	17%	50%	\$0.05	0.01	0.09	Illinois TRM
Electronic Equipment Mfg	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	New	105.32	10	\$20.15	17%	50%	\$0.03	0.07	2.15	UNIDO Study on Industrial Energy Efficiency
Electronic Equipment Mfg	Motors	Compressed Air - Outside Air Intake	employee	New	0.00	20	\$0.00	17%	50%	\$0.00	0.00	0.37	Michigan Energy Measures Database
Electronic Equipment Mfg	Motors	Compressed Air - Receiver Capacity Addition	employee	New	104.71	15	\$55.40	17%	50%	\$0.06	0.09	0.00	UNIDO Study on Industrial Energy Efficiency
Electronic Equipment Mfg	Motors	Material Handling - Variable Speed Drive	employee	New	2,038.35	10	\$720.77	25%	45%	\$0.05	0.98	0.00	7th Power Plan
Electronic Equipment Mfg	Motors	Motors - Green Rewind (<100 HP)	employee	New	38.86	10	\$16.70	10%	50%	\$0.06	0.15	0.00	7th Power Plan
Electronic Equipment Mfg	Motors	Motors - Green Rewind (100 HP+)	employee	New	21.90	10	\$5.93	6%	25%	\$0.04	0.04	0.00	7th Power Plan
Electronic Equipment Mfg	Motors	Switch from Belt Drive to Direct Drive	employee	New	331.81	12	\$73.31	16%	25%	\$0.03	0.34	0.00	2015-mdu-irp-report---volume-iii.pdf
Electronic Equipment Mfg	Motors	Motors - Synchronous Belts	employee	New	87.84	10	\$22.05	16%	36%	\$0.03	0.14	0.00	7th Power Plan
Electronic Equipment Mfg	Miscellaneous	Agriculture - Engine Block Timer	employee	New	4,520.93	3	\$55.77	0%	0%	\$0.00	0.00	0.00	Vermont TRM

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Electronic Equipment Mfg	Motors	Agriculture - Live Stock Waterer	employee	New	591.17	10	\$312.11	0%	0%	\$0.07	0.00	0.00	Ontario Power TRM
Electronic Equipment Mfg	Process	Dairy - Milk Precoolers	employee	New	2,138.90	15	\$1,013.34	0%	0%	\$0.05	0.00	0.00	Ontario Power TRM
Electronic Equipment Mfg	Process	Clean Room: Change Filter Strategy	employee	New	657.21	15	\$4.85	15%	75%	\$0.00	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Process	Clean Room: Chiller Optimize	employee	New	642.83	15	\$60.00	15%	75%	\$0.01	1.11	0.00	7th Power Plan
Electronic Equipment Mfg	Process	Clean Room: Clean Room HVAC	employee	New	386.81	15	\$72.43	15%	75%	\$0.02	0.67	0.80	7th Power Plan
Electronic Equipment Mfg	Process	Elec Chip Fab: Solidstate Chiller	employee	New	384.38	15	\$227.51	15%	75%	\$0.06	0.57	1.05	7th Power Plan
Electronic Equipment Mfg	Process	Elec Chip Fab: Eliminate Exhaust	employee	New	80.44	15	\$17.44	15%	75%	\$0.02	0.12	0.67	7th Power Plan
Electronic Equipment Mfg	Process	Elec Chip Fab: Exhaust Injector	employee	New	160.75	15	\$84.12	15%	75%	\$0.06	0.24	0.23	7th Power Plan
Electronic Equipment Mfg	Process	Elec Chip Fab: Reduce Gas Pressure	employee	New	163.24	15	\$1.69	15%	75%	\$0.00	0.24	0.14	7th Power Plan
Electronic Equipment Mfg	Motors	Panel: Hydraulic Press	employee	New	3,060.70	10	\$720.34	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Motors	Wood: Replace Pneumatic Conveyor	employee	New	3,272.29	10	\$53.95	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Process	Metal: New Arc Furnace	employee	New	4,148.70	10	\$444.75	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Process	Paper: Premium Control Large Material	employee	New	1,021.31	10	\$525.93	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Process	Paper: Efficient Pulp Screen	employee	New	823.89	10	\$173.24	0%	0%	\$0.03	0.00	4.62	7th Power Plan
Electronic Equipment Mfg	Process	Kraft: Effluent Treatment System	employee	New	827.77	10	\$71.03	0%	0%	\$0.01	0.00	0.92	7th Power Plan
Electronic Equipment Mfg	Motors	Kraft: Efficient Agitator	employee	New	5,532.67	10	\$537.54	0%	0%	\$0.01	0.00	22.57	7th Power Plan
Electronic Equipment Mfg	Process	Mech Pulp: Premium Process	employee	New	9.16	5	\$1.22	0%	0%	\$0.03	0.00	4.49	7th Power Plan
Electronic Equipment Mfg	Motors	Mech Pulp: Refiner Plate Improvement	employee	New	47.76	1	\$2.05	0%	0%	\$0.04	0.00	0.28	7th Power Plan
Electronic Equipment Mfg	Cooling	Transformer - High Efficiency	employee	New	438.45	10	\$276.62	15%	15%	\$0.02	0.00	6.02	7th Power Plan

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Electronic Equipment Mfg	Heating	Transformer - High Efficiency	employee	New	892.46	10	\$276.62	15%	15%	\$0.02	0.00	1.21	7th Power Plan
Electronic Equipment Mfg	Ventilation	Transformer - High Efficiency	employee	New	34.79	10	\$276.62	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Interior Lighting	Transformer - High Efficiency	employee	New	78.09	10	\$276.62	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Exterior Lighting	Transformer - High Efficiency	employee	New	17.26	10	\$276.62	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Motors	Transformer - High Efficiency	employee	New	257.95	10	\$276.62	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Process	Transformer - High Efficiency	employee	New	409.02	10	\$276.62	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Miscellaneous	Transformer - High Efficiency	employee	New	162.08	10	\$276.62	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Cooling	Strategic Energy Management	employee	New	1,248.25	3	\$1,698.91	0%	5%	\$0.08	0.00	0.00	AEG Research
Electronic Equipment Mfg	Heating	Strategic Energy Management	employee	New	2,564.01	3	\$1,698.91	0%	5%	\$0.08	0.01	0.00	AEG Research
Electronic Equipment Mfg	Ventilation	Strategic Energy Management	employee	New	100.21	3	\$1,698.91	0%	5%	\$0.08	0.00	0.00	AEG Research
Electronic Equipment Mfg	Interior Lighting	Strategic Energy Management	employee	New	224.78	3	\$1,698.91	0%	5%	\$0.08	0.00	0.00	AEG Research
Electronic Equipment Mfg	Exterior Lighting	Strategic Energy Management	employee	New	49.85	3	\$1,698.91	0%	5%	\$0.08	0.00	0.00	AEG Research
Electronic Equipment Mfg	Motors	Strategic Energy Management	employee	New	745.19	3	\$1,698.91	0%	5%	\$0.08	0.01	0.46	AEG Research
Electronic Equipment Mfg	Process	Strategic Energy Management	employee	New	1,181.61	3	\$1,698.91	0%	5%	\$0.08	0.01	0.55	AEG Research
Electronic Equipment Mfg	Miscellaneous	Strategic Energy Management	employee	New	468.22	3	\$1,698.91	0%	5%	\$0.08	0.01	0.33	AEG Research
Electronic Equipment Mfg	Interior Lighting	Commissioning	employee	New	259.30	3	\$1,310.75	5%	39%	\$0.13	0.02	0.12	AEG Research
Electronic Equipment Mfg	Exterior Lighting	Commissioning	employee	New	57.51	3	\$1,310.75	5%	39%	\$0.13	0.00	0.07	AEG Research
Electronic Equipment Mfg	Motors	Commissioning	employee	New	859.63	3	\$1,310.75	5%	39%	\$0.13	0.07	0.00	AEG Research
Electronic Equipment Mfg	Process	Commissioning	employee	New	1,363.06	3	\$1,310.75	5%	39%	\$0.13	0.11	0.00	AEG Research

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Electronic Equipment Mfg	Miscellaneous	Commissioning	employee	New	540.13	3	\$1,310.75	5%	39%	\$0.13	0.05	0.00	AEG Research
Electronic Equipment Mfg	Interior Lighting	Retrocommissioning	employee	New	260.30	3	\$832.09	0%	0%	\$0.08	0.00	0.00	AEG Research
Electronic Equipment Mfg	Exterior Lighting	Retrocommissioning	employee	New	57.52	3	\$832.09	0%	0%	\$0.08	0.00	2.33	AEG Research
Electronic Equipment Mfg	Motors	Retrocommissioning	employee	New	859.83	3	\$832.09	0%	0%	\$0.08	0.00	0.41	AEG Research
Electronic Equipment Mfg	Process	Retrocommissioning	employee	New	1,363.39	3	\$832.09	0%	0%	\$0.08	0.00	11.65	AEG Research
Electronic Equipment Mfg	Miscellaneous	Retrocommissioning	employee	New	540.26	3	\$832.09	0%	0%	\$0.08	0.00	1.93	AEG Research
Electronic Equipment Mfg	Motors	Municipal Sewage Treatment	employee	New	32.08	12	\$17.82	0%	0%	\$0.07	0.00	0.12	7th Power Plan
Electronic Equipment Mfg	Motors	Municipal Water Supply Treatment	employee	New	0.00	12	\$0.00	0%	0%	\$0.00	0.00	3.09	7th Power Plan
Industrial Machinery	Cooling	Insulation - Ceiling	sqft	Existing	0.13	45	\$1.28	15%	25%	\$0.14	0.05	0.00	Building Energy Simulation Tool
Industrial Machinery	Heating	Insulation - Ceiling	sqft	Existing	0.52	45	\$1.28	15%	25%	\$0.14	0.22	0.00	Building Energy Simulation Tool
Industrial Machinery	Ventilation	Insulation - Ceiling	sqft	Existing	0.02	45	\$1.28	15%	25%	\$0.14	0.03	0.00	Building Energy Simulation Tool
Industrial Machinery	Cooling	Insulation - Ducting	sqft	Existing	0.05	20	\$0.84	15%	25%	\$1.01	0.02	0.45	Building Energy Simulation Tool
Industrial Machinery	Heating	Insulation - Ducting	sqft	Existing	0.02	20	\$0.84	15%	25%	\$1.01	0.01	0.10	Building Energy Simulation Tool
Industrial Machinery	Ventilation	Insulation - Ducting	sqft	Existing	0.00	20	\$0.84	15%	25%	\$1.01	0.00	13.45	Building Energy Simulation Tool
Industrial Machinery	Cooling	Insulation - Wall Cavity	sqft	Existing	0.00	45	\$0.15	45%	50%	\$0.02	0.00	1.16	Building Energy Simulation Tool
Industrial Machinery	Heating	Insulation - Wall Cavity	sqft	Existing	0.76	45	\$0.15	45%	50%	\$0.02	0.16	0.23	Building Energy Simulation Tool
Industrial Machinery	Ventilation	Insulation - Wall Cavity	sqft	Existing	0.02	45	\$0.15	45%	50%	\$0.02	0.02	0.00	Building Energy Simulation Tool
Industrial Machinery	Cooling	HVAC - Duct Repair and Sealing	sqft	Existing	0.02	18	\$0.00	15%	25%	\$0.00	0.01	0.00	Building Energy Simulation Tool
Industrial Machinery	Heating	HVAC - Duct Repair and Sealing	sqft	Existing	0.05	18	\$0.00	15%	25%	\$0.00	0.02	0.01	Building Energy Simulation Tool

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Industrial Machinery	Ventilation	HVAC - Duct Repair and Sealing	sqft	Existing	0.00	18	\$0.00	15%	25%	\$0.00	0.00	0.06	Building Energy Simulation Tool
Industrial Machinery	Cooling	Chiller - Chilled Water Reset	sqft	Existing	0.04	10	\$0.01	15%	45%	\$0.03	0.02	0.01	AEG-BEST
Industrial Machinery	Cooling	Chiller - Chilled Water Variable-Flow System	sqft	Existing	0.24	15	\$0.50	15%	60%	\$0.21	0.16	0.01	AEG-BEST
Industrial Machinery	Cooling	Chiller - Variable Speed Fans	sqft	Existing	0.09	15	\$0.03	15%	75%	\$0.04	0.08	0.00	New Jersey TRM
Industrial Machinery	Cooling	HVAC - Economizer	sqft	Existing	0.06	10	\$0.25	18%	30%	\$0.51	0.08	0.00	AEG-BEST
Industrial Machinery	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.25	15%	35%	\$10.33	0.01	0.00	7th Power Plan
Industrial Machinery	Cooling	Destratification Fans (HVLS)	sqft	Existing	0.16	15	\$0.63	15%	50%	\$0.04	0.23	0.04	AEG Research
Industrial Machinery	Heating	Destratification Fans (HVLS)	sqft	Existing	1.38	15	\$0.63	15%	50%	\$0.04	2.15	0.01	AEG Research
Industrial Machinery	Cooling	RTU - Maintenance	sqft	Existing	0.08	3	\$0.07	15%	75%	\$0.26	0.16	0.00	AEG Research
Industrial Machinery	Cooling	Thermostat - WiFi/Interactive	sqft	Existing	0.29	5	\$0.66	5%	15%	\$0.09	0.11	0.01	7th Power Plan
Industrial Machinery	Heating	Thermostat - WiFi/Interactive	sqft	Existing	1.21	5	\$0.66	5%	15%	\$0.09	0.51	0.00	7th Power Plan
Industrial Machinery	Ventilation	Thermostat - WiFi/Interactive	sqft	Existing	0.04	5	\$0.66	5%	15%	\$0.09	0.07	0.00	7th Power Plan
Industrial Machinery	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.07	15	\$0.35	7%	33%	\$0.40	0.58	0.03	7th Power Plan
Industrial Machinery	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.10	15	\$0.58	7%	33%	\$0.47	0.78	0.01	7th Power Plan
Industrial Machinery	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	Existing	0.02	15	\$0.00	1%	2%	\$0.01	0.00	0.01	7th Power Plan
Industrial Machinery	Interior Lighting	Interior Lighting - Timers and Timers	sqft	Existing	0.00	8	\$0.00	7%	7%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Industrial Machinery	Interior Lighting	Interior Lighting - Skylights	sqft	Existing	0.00	15	\$1.01	15%	23%	\$0.00	0.00	0.04	AEG Research
Industrial Machinery	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	sqft	Existing	0.03	16	\$1.81	5%	40%	\$3.95	0.09	0.34	7th Power Plan
Industrial Machinery	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	Existing	0.04	11	\$0.00	15%	50%	\$0.01	0.10	0.01	Illinois TRM

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Industrial Machinery	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	sqft	Existing	0.05	8	\$0.03	15%	25%	\$0.08	0.12	0.00	7th Power Plan
Industrial Machinery	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	Existing	0.03	8	\$0.02	33%	60%	\$0.08	0.16	0.02	Pacific Gas and Electric Research
Industrial Machinery	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	Existing	0.03	7	\$1.19	15%	30%	\$4.38	0.10	0.00	AEG Research
Industrial Machinery	Process	Process - Conductivity Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.47	N/A
Industrial Machinery	Process	Process - Timers and Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.64	N/A
Industrial Machinery	Motors	Process - Timers and Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Industrial Machinery	Process	Refrigeration - Floating Head Pressure	employee	Existing	6.50	15	\$6.33	20%	50%	\$0.11	0.05	0.00	RTF Workbook
Industrial Machinery	Process	Refrigeration - System Optimization	employee	Existing	10.43	15	\$4.46	20%	50%	\$0.05	0.08	0.00	AEG Research
Industrial Machinery	Motors	Pumping System - Equipment Upgrade	employee	Existing	62.92	10	\$9.51	9%	38%	\$0.05	0.45	0.05	7th Power Plan
Industrial Machinery	Motors	Pumping System - System Optimization	employee	Existing	46.56	12	\$14.50	9%	38%	\$0.04	0.32	0.05	UNIDO Study on Industrial Energy Efficiency
Industrial Machinery	Motors	Pumping System - Variable Speed Drive	employee	Existing	45.89	10	\$15.08	9%	38%	\$0.04	0.32	0.05	UNIDO Study on Industrial Energy Efficiency
Industrial Machinery	Motors	Fan System - Equipment Upgrade	employee	Existing	81.71	10	\$8.35	9%	38%	\$0.04	0.57	0.04	UNIDO Study on Industrial Energy Efficiency
Industrial Machinery	Motors	Fan System - Flow Optimization	employee	Existing	95.92	10	\$13.81	9%	38%	\$0.02	0.67	0.04	UNIDO Study on Industrial Energy Efficiency
Industrial Machinery	Motors	Fan System - Variable Speed Drive	employee	Existing	139.10	10	\$69.51	9%	38%	\$0.06	0.95	0.00	UNIDO Study on Industrial Energy Efficiency
Industrial Machinery	Motors	Compressed Air - Equipment Upgrade	employee	Existing	232.14	10	\$16.89	17%	50%	\$0.04	1.98	0.00	7th Power Plan
Industrial Machinery	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	Existing	0.00	15	\$0.00	16%	38%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Industrial Machinery	Motors	Compressed Air - Refrigerated Cycling Dryers	employee	Existing	0.00	10	\$0.00	16%	30%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Industrial Machinery	Motors	Compressed Air - System Controls	employee	Existing	49.03	10	\$12.08	9%	38%	\$0.03	0.35	0.00	UNIDO Study on Industrial Energy Efficiency
Industrial Machinery	Motors	Compressed Air - Leak Management Program	employee	Existing	129.50	10	\$12.14	18%	75%	\$0.04	1.88	3.34	7th Power Plan

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Industrial Machinery	Motors	Compressed Air - Variable Speed Drive	employee	Existing	89.59	15	\$74.05	26%	45%	\$0.08	0.42	3.24	UNIDO Study on Industrial Energy Efficiency
Industrial Machinery	Motors	Compressed Air - Low Pressure-Drop Filters	employee	Existing	2.99	10	\$1.14	17%	50%	\$0.05	0.02	2.87	Illinois TRM
Industrial Machinery	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	Existing	18.49	10	\$3.70	17%	50%	\$0.03	0.15	0.60	UNIDO Study on Industrial Energy Efficiency
Industrial Machinery	Motors	Compressed Air - Outside Air Intake	employee	Existing	0.00	20	\$0.00	17%	50%	\$0.00	0.00	0.71	Michigan Energy Measures Database
Industrial Machinery	Motors	Compressed Air - Receiver Capacity Addition	employee	Existing	18.24	15	\$10.18	17%	50%	\$0.06	0.15	1.05	UNIDO Study on Industrial Energy Efficiency
Industrial Machinery	Motors	Material Handling - Variable Speed Drive	employee	Existing	183.12	10	\$68.59	25%	45%	\$0.05	0.89	2.88	7th Power Plan
Industrial Machinery	Motors	Motors - Green Rewind (<100 HP)	employee	Existing	5.74	10	\$2.63	10%	50%	\$0.06	0.22	0.00	7th Power Plan
Industrial Machinery	Motors	Motors - Green Rewind (100 HP+)	employee	Existing	3.26	10	\$0.93	6%	25%	\$0.04	0.06	0.00	7th Power Plan
Industrial Machinery	Motors	Switch from Belt Drive to Direct Drive	employee	Existing	49.95	12	\$11.52	16%	25%	\$0.03	0.46	0.55	2015-mdu-irp-report---volume-iii.pdf
Industrial Machinery	Motors	Motors - Synchronous Belts	employee	Existing	13.11	10	\$3.47	16%	36%	\$0.03	0.26	2.80	7th Power Plan
Industrial Machinery	Miscellaneous	Agriculture - Engine Block Timer	employee	Existing	283.37	3	\$3.50	0%	0%	\$0.00	0.00	0.83	Vermont TRM
Industrial Machinery	Motors	Agriculture - Live Stock Waterer	employee	Existing	147.66	10	\$83.78	0%	0%	\$0.07	0.00	0.04	Ontario Power TRM
Industrial Machinery	Process	Dairy - Milk Precoolers	employee	Existing	43.32	15	\$20.14	0%	0%	\$0.05	0.00	0.24	Ontario Power TRM
Industrial Machinery	Process	Clean Room: Change Filter Strategy	employee	Existing	23.55	15	\$0.17	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Industrial Machinery	Process	Clean Room: Chiller Optimize	employee	Existing	12.88	15	\$1.19	0%	0%	\$0.01	0.00	0.29	7th Power Plan
Industrial Machinery	Process	Clean Room: Clean Room HVAC	employee	Existing	7.82	15	\$1.44	0%	0%	\$0.02	0.00	0.73	7th Power Plan
Industrial Machinery	Process	Elec Chip Fab: Solidstate Chiller	employee	Existing	7.80	15	\$4.52	0%	0%	\$0.06	0.00	0.66	7th Power Plan
Industrial Machinery	Process	Elec Chip Fab: Eliminate Exhaust	employee	Existing	2.94	15	\$0.62	0%	0%	\$0.02	0.00	0.18	7th Power Plan
Industrial Machinery	Process	Elec Chip Fab: Exhaust Injector	employee	Existing	5.87	15	\$3.01	0%	0%	\$0.06	0.00	1.51	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Industrial Machinery	Process	Elec Chip Fab: Reduce Gas Pressure	employee	Existing	5.89	15	\$0.06	0%	0%	\$0.00	0.00	0.64	7th Power Plan
Industrial Machinery	Motors	Panel: Hydraulic Press	employee	Existing	276.54	10	\$68.55	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Industrial Machinery	Motors	Wood: Replace Pneumatic Conveyor	employee	Existing	311.40	10	\$5.13	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Industrial Machinery	Process	Metal: New Arc Furnace	employee	Existing	199.64	10	\$20.96	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Industrial Machinery	Process	Paper: Premium Control Large Material	employee	Existing	32.58	10	\$16.38	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Industrial Machinery	Process	Paper: Efficient Pulp Screen	employee	Existing	26.23	10	\$5.40	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Industrial Machinery	Process	Kraft: Effluent Treatment System	employee	Existing	26.23	10	\$2.21	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Industrial Machinery	Motors	Kraft: Efficient Agitator	employee	Existing	512.02	10	\$51.15	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Industrial Machinery	Process	Mech Pulp: Premium Process	employee	Existing	0.29	5	\$0.04	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Industrial Machinery	Motors	Mech Pulp: Refiner Plate Improvement	employee	Existing	4.23	1	\$0.20	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Industrial Machinery	Cooling	Transformer - High Efficiency	employee	Existing	29.62	10	\$19.87	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Industrial Machinery	Heating	Transformer - High Efficiency	employee	Existing	55.65	10	\$19.87	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Industrial Machinery	Ventilation	Transformer - High Efficiency	employee	Existing	3.04	10	\$19.87	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Industrial Machinery	Interior Lighting	Transformer - High Efficiency	employee	Existing	8.41	10	\$19.87	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Industrial Machinery	Exterior Lighting	Transformer - High Efficiency	employee	Existing	1.72	10	\$19.87	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Industrial Machinery	Motors	Transformer - High Efficiency	employee	Existing	37.73	10	\$19.87	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Industrial Machinery	Process	Transformer - High Efficiency	employee	Existing	13.05	10	\$19.87	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Industrial Machinery	Miscellaneous	Transformer - High Efficiency	employee	Existing	10.73	10	\$19.87	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Industrial Machinery	Cooling	Strategic Energy Management	employee	Existing	81.52	3	\$122.03	0%	5%	\$0.08	0.02	0.00	AEG Research

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Industrial Machinery	Heating	Strategic Energy Management	employee	Existing	157.98	3	\$122.03	0%	5%	\$0.08	0.04	0.00	AEG Research
Industrial Machinery	Ventilation	Strategic Energy Management	employee	Existing	8.71	3	\$122.03	0%	5%	\$0.08	0.01	0.00	AEG Research
Industrial Machinery	Interior Lighting	Strategic Energy Management	employee	Existing	22.62	3	\$122.03	0%	5%	\$0.08	0.02	0.00	AEG Research
Industrial Machinery	Exterior Lighting	Strategic Energy Management	employee	Existing	4.92	3	\$122.03	0%	5%	\$0.08	0.00	0.00	AEG Research
Industrial Machinery	Motors	Strategic Energy Management	employee	Existing	107.95	3	\$122.03	0%	5%	\$0.08	0.12	0.00	AEG Research
Industrial Machinery	Process	Strategic Energy Management	employee	Existing	37.32	3	\$122.03	0%	5%	\$0.08	0.04	0.00	AEG Research
Industrial Machinery	Miscellaneous	Strategic Energy Management	employee	Existing	30.64	3	\$122.03	0%	5%	\$0.08	0.05	0.00	AEG Research
Industrial Machinery	Interior Lighting	Commissioning	employee	Existing	26.08	3	\$107.27	0%	0%	\$0.14	0.00	0.00	AEG Research
Industrial Machinery	Exterior Lighting	Commissioning	employee	Existing	5.67	3	\$107.27	0%	0%	\$0.14	0.00	0.00	AEG Research
Industrial Machinery	Motors	Commissioning	employee	Existing	124.40	3	\$107.27	0%	0%	\$0.14	0.00	0.00	AEG Research
Industrial Machinery	Process	Commissioning	employee	Existing	43.00	3	\$107.27	0%	0%	\$0.14	0.00	0.00	AEG Research
Industrial Machinery	Miscellaneous	Commissioning	employee	Existing	35.31	3	\$107.27	0%	0%	\$0.14	0.00	0.00	AEG Research
Industrial Machinery	Interior Lighting	Retrocommissioning	employee	Existing	26.50	3	\$68.10	5%	39%	\$0.09	0.17	0.00	AEG Research
Industrial Machinery	Exterior Lighting	Retrocommissioning	employee	Existing	5.73	3	\$68.10	5%	39%	\$0.09	0.04	0.00	AEG Research
Industrial Machinery	Motors	Retrocommissioning	employee	Existing	125.77	3	\$68.10	5%	39%	\$0.09	0.97	0.00	AEG Research
Industrial Machinery	Process	Retrocommissioning	employee	Existing	43.49	3	\$68.10	5%	39%	\$0.09	0.35	0.00	AEG Research
Industrial Machinery	Miscellaneous	Retrocommissioning	employee	Existing	35.75	3	\$68.10	5%	39%	\$0.09	0.36	0.00	AEG Research
Industrial Machinery	Motors	Municipal Sewage Treatment	employee	Existing	8.10	12	\$4.78	0%	0%	\$0.07	0.00	0.01	7th Power Plan
Industrial Machinery	Motors	Municipal Water Supply Treatment	employee	Existing	0.00	12	\$0.00	0%	0%	\$0.00	0.00	0.00	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Industrial Machinery	Cooling	Insulation - Ceiling	sqft	New	0.11	45	\$1.28	15%	25%	\$0.15	0.01	0.29	Building Energy Simulation Tool
Industrial Machinery	Heating	Insulation - Ceiling	sqft	New	0.51	45	\$1.28	15%	25%	\$0.15	0.05	0.02	Building Energy Simulation Tool
Industrial Machinery	Ventilation	Insulation - Ceiling	sqft	New	0.01	45	\$1.28	15%	25%	\$0.15	0.01	0.00	Building Energy Simulation Tool
Industrial Machinery	Cooling	Insulation - Ducting	sqft	New	0.04	20	\$0.84	15%	25%	\$1.09	0.00	0.00	Building Energy Simulation Tool
Industrial Machinery	Heating	Insulation - Ducting	sqft	New	0.02	20	\$0.84	15%	25%	\$1.09	0.00	0.00	Building Energy Simulation Tool
Industrial Machinery	Ventilation	Insulation - Ducting	sqft	New	0.00	20	\$0.84	15%	25%	\$1.09	0.00	0.00	Building Energy Simulation Tool
Industrial Machinery	Cooling	Insulation - Wall Cavity	sqft	New	0.00	45	\$0.15	45%	50%	\$0.02	0.00	0.00	Building Energy Simulation Tool
Industrial Machinery	Heating	Insulation - Wall Cavity	sqft	New	0.71	45	\$0.15	45%	50%	\$0.02	0.04	0.00	Building Energy Simulation Tool
Industrial Machinery	Ventilation	Insulation - Wall Cavity	sqft	New	0.01	45	\$0.15	45%	50%	\$0.02	0.00	0.00	Building Energy Simulation Tool
Industrial Machinery	Cooling	HVAC - Duct Repair and Sealing	sqft	New	0.01	18	\$0.00	15%	25%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Industrial Machinery	Heating	HVAC - Duct Repair and Sealing	sqft	New	0.05	18	\$0.00	15%	25%	\$0.00	0.00	2.54	Building Energy Simulation Tool
Industrial Machinery	Ventilation	HVAC - Duct Repair and Sealing	sqft	New	0.00	18	\$0.00	15%	25%	\$0.00	0.00	11.26	Building Energy Simulation Tool
Industrial Machinery	Cooling	Chiller - Chilled Water Reset	sqft	New	0.04	10	\$0.01	15%	45%	\$0.03	0.00	1.87	AEG-BEST
Industrial Machinery	Cooling	Chiller - Chilled Water Variable-Flow System	sqft	New	0.20	15	\$0.50	15%	60%	\$0.25	0.02	0.96	AEG-BEST
Industrial Machinery	Cooling	Chiller - Variable Speed Fans	sqft	New	0.07	15	\$0.03	15%	75%	\$0.04	0.01	0.47	New Jersey TRM
Industrial Machinery	Cooling	HVAC - Economizer	sqft	New	0.06	10	\$0.25	18%	30%	\$0.54	0.01	0.08	AEG-BEST
Industrial Machinery	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.25	15%	35%	\$12.03	0.00	0.02	7th Power Plan
Industrial Machinery	Cooling	Destratification Fans (HVLS)	sqft	New	0.14	15	\$0.63	15%	50%	\$0.05	0.03	8.13	AEG Research
Industrial Machinery	Heating	Destratification Fans (HVLS)	sqft	New	1.30	15	\$0.63	15%	50%	\$0.05	0.27	1.25	AEG Research

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Industrial Machinery	Cooling	RTU - Maintenance	sqft	New	0.08	3	\$0.07	15%	75%	\$0.27	0.01	0.33	AEG Research
Industrial Machinery	Cooling	Thermostat - WiFi/Interactive	sqft	New	0.26	5	\$0.66	5%	15%	\$0.09	0.00	1.15	7th Power Plan
Industrial Machinery	Heating	Thermostat - WiFi/Interactive	sqft	New	1.21	5	\$0.66	5%	15%	\$0.09	0.02	0.18	7th Power Plan
Industrial Machinery	Ventilation	Thermostat - WiFi/Interactive	sqft	New	0.02	5	\$0.66	5%	15%	\$0.09	0.00	1.04	7th Power Plan
Industrial Machinery	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.06	15	\$0.35	22%	41%	\$0.40	0.16	8.49	7th Power Plan
Industrial Machinery	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.08	15	\$0.58	22%	41%	\$0.47	0.22	4.21	7th Power Plan
Industrial Machinery	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	New	0.02	15	\$0.00	1%	2%	\$0.01	0.00	4.58	7th Power Plan
Industrial Machinery	Interior Lighting	Interior Lighting - Timeclocks and Timers	sqft	New	0.00	8	\$0.00	7%	7%	\$0.00	0.00	0.65	SCP Tool Occupancy Hour Reductions.xlsx
Industrial Machinery	Interior Lighting	Interior Lighting - Skylights	sqft	New	0.00	15	\$1.01	18%	24%	\$0.00	0.00	11.99	AEG Research
Industrial Machinery	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	sqft	New	0.03	16	\$1.81	5%	40%	\$3.94	0.01	106.92	7th Power Plan
Industrial Machinery	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	New	0.03	11	\$0.00	15%	50%	\$0.01	0.01	9.07	Illinois TRM
Industrial Machinery	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	sqft	New	0.04	8	\$0.03	15%	25%	\$0.08	0.01	5.91	7th Power Plan
Industrial Machinery	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	New	0.02	8	\$0.02	44%	60%	\$0.08	0.01	26.47	Pacific Gas and Electric Research
Industrial Machinery	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	New	0.03	7	\$1.19	15%	30%	\$4.37	0.01	4.41	AEG Research
Industrial Machinery	Process	Process - Conductivity Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	50.33	N/A
Industrial Machinery	Process	Process - Timers and Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	68.86	N/A
Industrial Machinery	Motors	Process - Timers and Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.30	N/A
Industrial Machinery	Process	Refrigeration - Floating Head Pressure	employee	New	6.51	15	\$4.47	20%	50%	\$0.07	0.01	0.00	RTF Workbook
Industrial Machinery	Process	Refrigeration - System Optimization	employee	New	10.43	15	\$1.56	20%	50%	\$0.02	0.01	0.00	AEG Research

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Industrial Machinery	Motors	Pumping System - Equipment Upgrade	employee	New	65.05	10	\$9.51	9%	38%	\$0.05	0.06	9.64	7th Power Plan
Industrial Machinery	Motors	Pumping System - System Optimization	employee	New	48.47	12	\$14.50	9%	38%	\$0.04	0.06	9.68	UNIDO Study on Industrial Energy Efficiency
Industrial Machinery	Motors	Pumping System - Variable Speed Drive	employee	New	48.13	10	\$15.08	9%	38%	\$0.04	0.05	12.45	UNIDO Study on Industrial Energy Efficiency
Industrial Machinery	Motors	Fan System - Equipment Upgrade	employee	New	83.90	10	\$8.35	9%	38%	\$0.04	0.10	17.80	UNIDO Study on Industrial Energy Efficiency
Industrial Machinery	Motors	Fan System - Flow Optimization	employee	New	98.81	10	\$13.81	9%	38%	\$0.02	0.11	11.75	UNIDO Study on Industrial Energy Efficiency
Industrial Machinery	Motors	Fan System - Variable Speed Drive	employee	New	147.53	10	\$69.51	9%	38%	\$0.06	0.17	0.00	UNIDO Study on Industrial Energy Efficiency
Industrial Machinery	Motors	Compressed Air - Equipment Upgrade	employee	New	232.14	10	\$16.89	17%	50%	\$0.04	0.24	0.00	7th Power Plan
Industrial Machinery	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	New	0.00	15	\$0.00	16%	38%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Industrial Machinery	Motors	Compressed Air - Refrigerated Cycling Dryers	employee	New	0.00	10	\$0.00	16%	30%	\$0.00	0.00	63.01	Michigan Energy Measures Database
Industrial Machinery	Motors	Compressed Air - System Controls	employee	New	51.12	10	\$12.08	9%	38%	\$0.03	0.05	101.46	UNIDO Study on Industrial Energy Efficiency
Industrial Machinery	Motors	Compressed Air - Leak Management Program	employee	New	131.26	10	\$12.14	18%	75%	\$0.04	0.24	85.09	7th Power Plan
Industrial Machinery	Motors	Compressed Air - Variable Speed Drive	employee	New	94.63	15	\$74.05	26%	45%	\$0.08	0.07	61.29	UNIDO Study on Industrial Energy Efficiency
Industrial Machinery	Motors	Compressed Air - Low Pressure-Drop Filters	employee	New	3.15	10	\$1.14	17%	50%	\$0.05	0.00	60.82	Illinois TRM
Industrial Machinery	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	New	19.23	10	\$3.70	17%	50%	\$0.03	0.02	76.01	UNIDO Study on Industrial Energy Efficiency
Industrial Machinery	Motors	Compressed Air - Outside Air Intake	employee	New	0.00	20	\$0.00	17%	50%	\$0.00	0.00	89.50	Michigan Energy Measures Database
Industrial Machinery	Motors	Compressed Air - Receiver Capacity Addition	employee	New	19.10	15	\$10.18	17%	50%	\$0.06	0.03	132.89	UNIDO Study on Industrial Energy Efficiency
Industrial Machinery	Motors	Material Handling - Variable Speed Drive	employee	New	192.40	10	\$68.59	25%	45%	\$0.05	0.15	112.90	7th Power Plan
Industrial Machinery	Motors	Motors - Green Rewind (<100 HP)	employee	New	6.08	10	\$2.63	10%	50%	\$0.06	0.04	0.00	7th Power Plan
Industrial Machinery	Motors	Motors - Green Rewind (100 HP+)	employee	New	3.42	10	\$0.93	6%	25%	\$0.04	0.01	0.00	7th Power Plan

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Industrial Machinery	Motors	Switch from Belt Drive to Direct Drive	employee	New	51.81	12	\$11.52	16%	25%	\$0.03	0.09	21.57	2015-mdi-irp-report---volume-iii.pdf
Industrial Machinery	Motors	Motors - Synchronous Belts	employee	New	13.70	10	\$3.47	16%	36%	\$0.03	0.03	110.01	7th Power Plan
Industrial Machinery	Miscellaneous	Agriculture - Engine Block Timer	employee	New	283.37	3	\$3.50	0%	0%	\$0.00	0.00	26.64	Vermont TRM
Industrial Machinery	Motors	Agriculture - Live Stock Waterer	employee	New	157.48	10	\$83.78	0%	0%	\$0.07	0.00	1.55	Ontario Power TRM
Industrial Machinery	Process	Dairy - Milk Precoolers	employee	New	43.39	15	\$20.14	0%	0%	\$0.05	0.00	9.46	Ontario Power TRM
Industrial Machinery	Process	Clean Room: Change Filter Strategy	employee	New	23.55	15	\$0.17	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Industrial Machinery	Process	Clean Room: Chiller Optimize	employee	New	12.88	15	\$1.19	0%	0%	\$0.01	0.00	9.41	7th Power Plan
Industrial Machinery	Process	Clean Room: Clean Room HVAC	employee	New	7.81	15	\$1.44	0%	0%	\$0.02	0.00	166.65	7th Power Plan
Industrial Machinery	Process	Elec Chip Fab: Solidstate Chiller	employee	New	7.81	15	\$4.52	0%	0%	\$0.06	0.00	34.18	7th Power Plan
Industrial Machinery	Process	Elec Chip Fab: Eliminate Exhaust	employee	New	2.94	15	\$0.62	0%	0%	\$0.02	0.00	9.14	7th Power Plan
Industrial Machinery	Process	Elec Chip Fab: Exhaust Injector	employee	New	5.88	15	\$3.01	0%	0%	\$0.06	0.00	69.32	7th Power Plan
Industrial Machinery	Process	Elec Chip Fab: Reduce Gas Pressure	employee	New	5.89	15	\$0.06	0%	0%	\$0.00	0.00	39.86	7th Power Plan
Industrial Machinery	Motors	Panel: Hydraulic Press	employee	New	289.09	10	\$68.55	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Industrial Machinery	Motors	Wood: Replace Pneumatic Conveyor	employee	New	311.40	10	\$5.13	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Industrial Machinery	Process	Metal: New Arc Furnace	employee	New	199.33	10	\$20.96	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Industrial Machinery	Process	Paper: Premium Control Large Material	employee	New	32.66	10	\$16.38	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Industrial Machinery	Process	Paper: Efficient Pulp Screen	employee	New	26.19	10	\$5.40	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Industrial Machinery	Process	Kraft: Effluent Treatment System	employee	New	26.19	10	\$2.21	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Industrial Machinery	Motors	Kraft: Efficient Agitator	employee	New	525.79	10	\$51.15	0%	0%	\$0.01	0.00	0.00	7th Power Plan

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Industrial Machinery	Process	Mech Pulp: Premium Process	employee	New	0.29	5	\$0.04	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Industrial Machinery	Motors	Mech Pulp: Refiner Plate Improvement	employee	New	4.51	1	\$0.20	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Industrial Machinery	Cooling	Transformer - High Efficiency	employee	New	26.84	10	\$19.11	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Industrial Machinery	Heating	Transformer - High Efficiency	employee	New	55.27	10	\$19.11	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Industrial Machinery	Ventilation	Transformer - High Efficiency	employee	New	1.99	10	\$19.11	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Industrial Machinery	Interior Lighting	Transformer - High Efficiency	employee	New	7.17	10	\$19.11	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Industrial Machinery	Exterior Lighting	Transformer - High Efficiency	employee	New	1.47	10	\$19.11	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Industrial Machinery	Motors	Transformer - High Efficiency	employee	New	40.24	10	\$19.11	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Industrial Machinery	Process	Transformer - High Efficiency	employee	New	13.08	10	\$19.11	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Industrial Machinery	Miscellaneous	Transformer - High Efficiency	employee	New	10.16	10	\$19.11	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Industrial Machinery	Cooling	Strategic Energy Management	employee	New	76.26	3	\$117.34	0%	5%	\$0.08	0.00	0.00	AEG Research
Industrial Machinery	Heating	Strategic Energy Management	employee	New	158.81	3	\$117.34	0%	5%	\$0.08	0.00	0.00	AEG Research
Industrial Machinery	Ventilation	Strategic Energy Management	employee	New	5.73	3	\$117.34	0%	5%	\$0.08	0.00	0.00	AEG Research
Industrial Machinery	Interior Lighting	Strategic Energy Management	employee	New	19.44	3	\$117.34	0%	5%	\$0.08	0.00	0.00	AEG Research
Industrial Machinery	Exterior Lighting	Strategic Energy Management	employee	New	4.25	3	\$117.34	0%	5%	\$0.08	0.00	0.00	AEG Research
Industrial Machinery	Motors	Strategic Energy Management	employee	New	116.25	3	\$117.34	0%	5%	\$0.08	0.00	0.00	AEG Research
Industrial Machinery	Process	Strategic Energy Management	employee	New	37.79	3	\$117.34	0%	5%	\$0.08	0.00	0.00	AEG Research
Industrial Machinery	Miscellaneous	Strategic Energy Management	employee	New	29.35	3	\$117.34	0%	5%	\$0.08	0.00	0.00	AEG Research
Industrial Machinery	Interior Lighting	Commissioning	employee	New	22.42	3	\$108.46	5%	39%	\$0.14	0.00	0.00	AEG Research

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Industrial Machinery	Exterior Lighting	Commissioning	employee	New	4.90	3	\$108.46	5%	39%	\$0.14	0.00	0.00	AEG Research
Industrial Machinery	Motors	Commissioning	employee	New	134.10	3	\$108.46	5%	39%	\$0.14	0.02	3.31	AEG Research
Industrial Machinery	Process	Commissioning	employee	New	43.60	3	\$108.46	5%	39%	\$0.14	0.00	6.83	AEG Research
Industrial Machinery	Miscellaneous	Commissioning	employee	New	33.86	3	\$108.46	5%	39%	\$0.14	0.00	2.12	AEG Research
Industrial Machinery	Interior Lighting	Retrocommissioning	employee	New	22.50	3	\$68.85	0%	0%	\$0.09	0.00	7.51	AEG Research
Industrial Machinery	Exterior Lighting	Retrocommissioning	employee	New	4.90	3	\$68.85	0%	0%	\$0.09	0.00	1.68	AEG Research
Industrial Machinery	Motors	Retrocommissioning	employee	New	134.13	3	\$68.85	0%	0%	\$0.09	0.00	68.08	AEG Research
Industrial Machinery	Process	Retrocommissioning	employee	New	43.61	3	\$68.85	0%	0%	\$0.09	0.00	53.79	AEG Research
Industrial Machinery	Miscellaneous	Retrocommissioning	employee	New	33.86	3	\$68.85	0%	0%	\$0.09	0.00	12.08	AEG Research
Industrial Machinery	Motors	Municipal Sewage Treatment	employee	New	8.58	12	\$4.78	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Industrial Machinery	Motors	Municipal Water Supply Treatment	employee	New	0.00	12	\$0.00	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Lumber Wood Products	Cooling	Insulation - Ceiling	sqft	Existing	0.12	45	\$1.28	15%	25%	\$0.14	0.69	10.64	Building Energy Simulation Tool
Lumber Wood Products	Heating	Insulation - Ceiling	sqft	Existing	0.52	45	\$1.28	15%	25%	\$0.14	3.10	0.00	Building Energy Simulation Tool
Lumber Wood Products	Ventilation	Insulation - Ceiling	sqft	Existing	0.02	45	\$1.28	15%	25%	\$0.14	0.45	0.00	Building Energy Simulation Tool
Lumber Wood Products	Cooling	Insulation - Ducting	sqft	Existing	0.05	20	\$0.84	15%	25%	\$1.01	0.25	2.05	Building Energy Simulation Tool
Lumber Wood Products	Heating	Insulation - Ducting	sqft	Existing	0.02	20	\$0.84	15%	25%	\$1.01	0.13	10.39	Building Energy Simulation Tool
Lumber Wood Products	Ventilation	Insulation - Ducting	sqft	Existing	0.00	20	\$0.84	15%	25%	\$1.01	0.02	3.23	Building Energy Simulation Tool
Lumber Wood Products	Cooling	Insulation - Wall Cavity	sqft	Existing	0.00	45	\$0.15	45%	50%	\$0.02	0.01	0.15	Building Energy Simulation Tool
Lumber Wood Products	Heating	Insulation - Wall Cavity	sqft	Existing	0.76	45	\$0.15	45%	50%	\$0.02	2.34	0.90	Building Energy Simulation Tool

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Lumber Wood Products	Ventilation	Insulation - Wall Cavity	sqft	Existing	0.02	45	\$0.15	45%	50%	\$0.02	0.30	0.00	Building Energy Simulation Tool
Lumber Wood Products	Cooling	HVAC - Duct Repair and Sealing	sqft	Existing	0.02	18	\$0.00	15%	25%	\$0.00	0.09	1.14	Building Energy Simulation Tool
Lumber Wood Products	Heating	HVAC - Duct Repair and Sealing	sqft	Existing	0.05	18	\$0.00	15%	25%	\$0.00	0.33	22.45	Building Energy Simulation Tool
Lumber Wood Products	Ventilation	HVAC - Duct Repair and Sealing	sqft	Existing	0.00	18	\$0.00	15%	25%	\$0.00	0.04	4.62	Building Energy Simulation Tool
Lumber Wood Products	Cooling	Chiller - Chilled Water Reset	sqft	Existing	0.04	10	\$0.01	15%	45%	\$0.03	0.28	1.23	AEG-BEST
Lumber Wood Products	Cooling	Chiller - Chilled Water Variable-Flow System	sqft	Existing	0.24	15	\$0.50	15%	60%	\$0.21	2.20	10.21	AEG-BEST
Lumber Wood Products	Cooling	Chiller - Variable Speed Fans	sqft	Existing	0.09	15	\$0.03	15%	75%	\$0.04	1.13	3.79	New Jersey TRM
Lumber Wood Products	Cooling	HVAC - Economizer	sqft	Existing	0.42	10	\$0.25	18%	30%	\$0.08	1.20	0.00	AEG-BEST
Lumber Wood Products	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.25	15%	35%	\$10.34	0.14	0.00	7th Power Plan
Lumber Wood Products	Cooling	Destratification Fans (HVLS)	sqft	Existing	0.16	15	\$0.63	15%	50%	\$0.04	3.23	0.00	AEG Research
Lumber Wood Products	Heating	Destratification Fans (HVLS)	sqft	Existing	1.38	15	\$0.63	15%	50%	\$0.04	30.59	0.00	AEG Research
Lumber Wood Products	Cooling	RTU - Maintenance	sqft	Existing	0.08	3	\$0.07	15%	75%	\$0.26	2.31	0.00	AEG Research
Lumber Wood Products	Cooling	Thermostat - WiFi/Interactive	sqft	Existing	0.29	5	\$0.66	5%	15%	\$0.09	1.58	0.00	7th Power Plan
Lumber Wood Products	Heating	Thermostat - WiFi/Interactive	sqft	Existing	1.21	5	\$0.66	5%	15%	\$0.09	7.23	0.00	7th Power Plan
Lumber Wood Products	Ventilation	Thermostat - WiFi/Interactive	sqft	Existing	0.04	5	\$0.66	5%	15%	\$0.09	1.07	0.00	7th Power Plan
Lumber Wood Products	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.48	15	\$0.35	7%	33%	\$0.06	19.80	0.00	7th Power Plan
Lumber Wood Products	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.66	15	\$0.58	7%	33%	\$0.07	26.28	0.00	7th Power Plan
Lumber Wood Products	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	Existing	0.02	15	\$0.00	1%	2%	\$0.01	0.10	0.00	7th Power Plan
Lumber Wood Products	Interior Lighting	Interior Lighting - Timerclocks and Timers	sqft	Existing	0.00	8	\$0.00	7%	7%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx

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Lumber Wood Products	Interior Lighting	Interior Lighting - Skylights	sqft	Existing	0.00	15	\$1.01	15%	23%	\$0.00	0.00	0.00	AEG Research
Lumber Wood Products	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	sqft	Existing	0.03	16	\$1.81	5%	40%	\$3.95	2.95	0.00	7th Power Plan
Lumber Wood Products	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	Existing	0.04	11	\$0.00	15%	50%	\$0.01	3.35	0.00	Illinois TRM
Lumber Wood Products	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	sqft	Existing	0.05	8	\$0.03	15%	25%	\$0.08	4.03	0.00	7th Power Plan
Lumber Wood Products	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	Existing	0.03	8	\$0.02	33%	60%	\$0.08	5.60	0.00	Pacific Gas and Electric Research
Lumber Wood Products	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	Existing	0.03	7	\$1.19	15%	30%	\$4.38	3.48	0.00	AEG Research
Lumber Wood Products	Process	Process - Conductivity Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Process	Process - Timers and Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Motors	Process - Timers and Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Process	Refrigeration - Floating Head Pressure	employee	Existing	42.82	15	\$41.66	20%	50%	\$0.11	1.62	0.00	RTF Workbook
Lumber Wood Products	Process	Refrigeration - System Optimization	employee	Existing	68.63	15	\$29.33	20%	50%	\$0.05	2.60	0.00	AEG Research
Lumber Wood Products	Motors	Pumping System - Equipment Upgrade	employee	Existing	1,648.53	10	\$262.88	9%	38%	\$0.05	57.23	0.00	7th Power Plan
Lumber Wood Products	Motors	Pumping System - System Optimization	employee	Existing	1,221.03	12	\$400.63	9%	38%	\$0.04	41.11	0.00	UNIDO Study on Industrial Energy Efficiency
Lumber Wood Products	Motors	Pumping System - Variable Speed Drive	employee	Existing	1,208.91	10	\$416.80	9%	38%	\$0.04	40.56	0.00	UNIDO Study on Industrial Energy Efficiency
Lumber Wood Products	Motors	Fan System - Equipment Upgrade	employee	Existing	671.61	10	\$73.06	9%	38%	\$0.04	22.76	0.00	UNIDO Study on Industrial Energy Efficiency
Lumber Wood Products	Motors	Fan System - Flow Optimization	employee	Existing	791.83	10	\$120.88	9%	38%	\$0.02	26.80	0.04	UNIDO Study on Industrial Energy Efficiency
Lumber Wood Products	Motors	Fan System - Variable Speed Drive	employee	Existing	1,154.77	10	\$608.24	9%	38%	\$0.06	38.28	0.08	UNIDO Study on Industrial Energy Efficiency
Lumber Wood Products	Motors	Compressed Air - Equipment Upgrade	employee	Existing	1,111.02	10	\$89.31	17%	50%	\$0.04	45.22	0.02	7th Power Plan

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Lumber Wood Products	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	Existing	0.00	15	\$0.00	16%	38%	\$0.00	0.00	0.09	Michigan Energy Measures Database
Lumber Wood Products	Motors	Compressed Air - Refrigerated Cycling Dryers	employee	Existing	0.00	10	\$0.00	16%	30%	\$0.00	0.00	0.02	Michigan Energy Measures Database
Lumber Wood Products	Motors	Compressed Air - System Controls	employee	Existing	245.85	10	\$63.86	9%	38%	\$0.03	8.48	0.80	UNIDO Study on Industrial Energy Efficiency
Lumber Wood Products	Motors	Compressed Air - Leak Management Program	employee	Existing	631.58	10	\$64.19	18%	75%	\$0.04	44.01	0.60	7th Power Plan
Lumber Wood Products	Motors	Compressed Air - Variable Speed Drive	employee	Existing	447.43	15	\$391.52	26%	45%	\$0.08	10.17	0.10	UNIDO Study on Industrial Energy Efficiency
Lumber Wood Products	Motors	Compressed Air - Low Pressure-Drop Filters	employee	Existing	14.92	10	\$6.03	17%	50%	\$0.05	0.59	0.15	Illinois TRM
Lumber Wood Products	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	Existing	92.64	10	\$19.58	17%	50%	\$0.03	3.74	0.03	UNIDO Study on Industrial Energy Efficiency
Lumber Wood Products	Motors	Compressed Air - Outside Air Intake	employee	Existing	0.00	20	\$0.00	17%	50%	\$0.00	0.00	1.38	Michigan Energy Measures Database
Lumber Wood Products	Motors	Compressed Air - Receiver Capacity Addition	employee	Existing	91.72	15	\$53.83	17%	50%	\$0.06	3.69	1.04	UNIDO Study on Industrial Energy Efficiency
Lumber Wood Products	Motors	Material Handling - Variable Speed Drive	employee	Existing	7,665.30	10	\$3,013.52	25%	45%	\$0.05	180.13	0.18	7th Power Plan
Lumber Wood Products	Motors	Motors - Green Rewind (<100 HP)	employee	Existing	103.16	10	\$49.70	10%	50%	\$0.06	24.03	0.00	7th Power Plan
Lumber Wood Products	Motors	Motors - Green Rewind (100 HP+)	employee	Existing	58.86	10	\$17.64	6%	25%	\$0.04	6.58	0.00	7th Power Plan
Lumber Wood Products	Motors	Switch from Belt Drive to Direct Drive	employee	Existing	895.87	12	\$218.18	16%	25%	\$0.03	50.39	0.00	2015-mdu-irp-report---volume-iii.pdf
Lumber Wood Products	Motors	Motors - Synchronous Belts	employee	Existing	236.23	10	\$65.64	16%	36%	\$0.03	28.52	0.00	7th Power Plan
Lumber Wood Products	Miscellaneous	Agriculture - Engine Block Timer	employee	Existing	2,476.31	3	\$30.55	0%	0%	\$0.00	0.00	0.00	Vermont TRM
Lumber Wood Products	Motors	Agriculture - Live Stock Waterer	employee	Existing	3,901.05	10	\$2,315.13	0%	0%	\$0.07	0.00	0.00	Ontario Power TRM
Lumber Wood Products	Process	Dairy - Milk Precoolers	employee	Existing	285.45	15	\$132.56	0%	0%	\$0.05	0.00	0.00	Ontario Power TRM
Lumber Wood Products	Process	Clean Room: Change Filter Strategy	employee	Existing	265.92	15	\$1.96	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Lumber Wood Products	Process	Clean Room: Chiller Optimize	employee	Existing	84.78	15	\$7.85	0%	0%	\$0.01	0.00	0.00	7th Power Plan

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Lumber Wood Products	Process	Clean Room: Clean Room HVAC	employee	Existing	51.47	15	\$9.47	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Lumber Wood Products	Process	Elec Chip Fab: Solidstate Chiller	employee	Existing	51.38	15	\$29.76	0%	0%	\$0.06	0.00	0.00	7th Power Plan
Lumber Wood Products	Process	Elec Chip Fab: Eliminate Exhaust	employee	Existing	33.24	15	\$7.06	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Lumber Wood Products	Process	Elec Chip Fab: Exhaust Injector	employee	Existing	66.36	15	\$34.04	0%	0%	\$0.06	0.00	0.00	7th Power Plan
Lumber Wood Products	Process	Elec Chip Fab: Reduce Gas Pressure	employee	Existing	66.48	15	\$0.68	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Lumber Wood Products	Motors	Panel: Hydraulic Press	employee	Existing	11,575.40	10	\$3,011.71	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Lumber Wood Products	Motors	Wood: Replace Pneumatic Conveyor	employee	Existing	13,681.38	10	\$225.55	15%	75%	\$0.00	0.00	0.00	7th Power Plan
Lumber Wood Products	Process	Metal: New Arc Furnace	employee	Existing	3,469.02	10	\$364.15	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Lumber Wood Products	Process	Paper: Premium Control Large Material	employee	Existing	373.35	10	\$187.32	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Lumber Wood Products	Process	Paper: Efficient Pulp Screen	employee	Existing	299.92	10	\$61.70	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Lumber Wood Products	Process	Kraft: Effluent Treatment System	employee	Existing	299.92	10	\$25.30	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Lumber Wood Products	Motors	Kraft: Efficient Agitator	employee	Existing	21,133.01	10	\$2,247.42	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Lumber Wood Products	Process	Mech Pulp: Premium Process	employee	Existing	3.35	5	\$0.43	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Lumber Wood Products	Motors	Mech Pulp: Refiner Plate Improvement	employee	Existing	177.63	1	\$8.57	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Lumber Wood Products	Cooling	Transformer - High Efficiency	employee	Existing	84.26	10	\$180.93	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Lumber Wood Products	Heating	Transformer - High Efficiency	employee	Existing	159.46	10	\$180.93	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Lumber Wood Products	Ventilation	Transformer - High Efficiency	employee	Existing	8.75	10	\$180.93	15%	15%	\$0.02	0.00	0.01	7th Power Plan
Lumber Wood Products	Interior Lighting	Transformer - High Efficiency	employee	Existing	54.56	10	\$180.93	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Lumber Wood Products	Exterior Lighting	Transformer - High Efficiency	employee	Existing	11.80	10	\$180.93	15%	15%	\$0.02	0.00	0.00	7th Power Plan

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Lumber Wood Products	Motors	Transformer - High Efficiency	employee	Existing	853.68	10	\$180.93	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Lumber Wood Products	Process	Transformer - High Efficiency	employee	Existing	149.52	10	\$180.93	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Lumber Wood Products	Miscellaneous	Transformer - High Efficiency	employee	Existing	93.72	10	\$180.93	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Lumber Wood Products	Cooling	Strategic Energy Management	employee	Existing	233.73	3	\$1,111.19	0%	24%	\$0.08	1.17	0.00	AEG Research
Lumber Wood Products	Heating	Strategic Energy Management	employee	Existing	452.66	3	\$1,111.19	0%	24%	\$0.08	2.45	0.00	AEG Research
Lumber Wood Products	Ventilation	Strategic Energy Management	employee	Existing	25.05	3	\$1,111.19	0%	24%	\$0.08	0.68	0.00	AEG Research
Lumber Wood Products	Interior Lighting	Strategic Energy Management	employee	Existing	155.61	3	\$1,111.19	0%	24%	\$0.08	3.45	0.00	AEG Research
Lumber Wood Products	Exterior Lighting	Strategic Energy Management	employee	Existing	33.88	3	\$1,111.19	0%	24%	\$0.08	0.77	0.00	AEG Research
Lumber Wood Products	Motors	Strategic Energy Management	employee	Existing	2,448.99	3	\$1,111.19	0%	24%	\$0.08	64.28	0.00	AEG Research
Lumber Wood Products	Process	Strategic Energy Management	employee	Existing	428.78	3	\$1,111.19	0%	24%	\$0.08	12.01	0.00	AEG Research
Lumber Wood Products	Miscellaneous	Strategic Energy Management	employee	Existing	268.58	3	\$1,111.19	0%	24%	\$0.08	9.54	0.00	AEG Research
Lumber Wood Products	Interior Lighting	Commissioning	employee	Existing	178.61	3	\$1,933.85	0%	0%	\$0.15	0.00	0.00	AEG Research
Lumber Wood Products	Exterior Lighting	Commissioning	employee	Existing	38.89	3	\$1,933.85	0%	0%	\$0.15	0.00	0.00	AEG Research
Lumber Wood Products	Motors	Commissioning	employee	Existing	2,809.42	3	\$1,933.85	0%	0%	\$0.15	0.00	0.00	AEG Research
Lumber Wood Products	Process	Commissioning	employee	Existing	491.73	3	\$1,933.85	0%	0%	\$0.15	0.00	0.00	AEG Research
Lumber Wood Products	Miscellaneous	Commissioning	employee	Existing	307.83	3	\$1,933.85	0%	0%	\$0.15	0.00	0.00	AEG Research
Lumber Wood Products	Interior Lighting	Retrocommissioning	employee	Existing	181.86	3	\$1,227.65	10%	35%	\$0.09	4.24	0.00	AEG Research
Lumber Wood Products	Exterior Lighting	Retrocommissioning	employee	Existing	39.33	3	\$1,227.65	10%	35%	\$0.09	0.94	0.02	AEG Research
Lumber Wood Products	Motors	Retrocommissioning	employee	Existing	2,845.60	3	\$1,227.65	10%	35%	\$0.09	78.24	0.02	AEG Research

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Lumber Wood Products	Process	Retrocommissioning	employee	Existing	498.41	3	\$1,227.65	10%	35%	\$0.09	14.62	0.02	AEG Research
Lumber Wood Products	Miscellaneous	Retrocommissioning	employee	Existing	312.41	3	\$1,227.65	10%	35%	\$0.09	11.61	0.01	AEG Research
Lumber Wood Products	Motors	Municipal Sewage Treatment	employee	Existing	212.28	12	\$132.16	0%	0%	\$0.07	0.00	0.01	7th Power Plan
Lumber Wood Products	Motors	Municipal Water Supply Treatment	employee	Existing	0.00	12	\$0.00	0%	0%	\$0.00	0.00	0.02	7th Power Plan
Lumber Wood Products	Cooling	Insulation - Ceiling	sqft	New	0.11	45	\$1.28	15%	25%	\$0.15	0.14	0.03	Building Energy Simulation Tool
Lumber Wood Products	Heating	Insulation - Ceiling	sqft	New	0.51	45	\$1.28	15%	25%	\$0.15	0.67	0.00	Building Energy Simulation Tool
Lumber Wood Products	Ventilation	Insulation - Ceiling	sqft	New	0.01	45	\$1.28	15%	25%	\$0.15	0.08	0.00	Building Energy Simulation Tool
Lumber Wood Products	Cooling	Insulation - Ducting	sqft	New	0.04	20	\$0.84	15%	25%	\$1.09	0.05	0.00	Building Energy Simulation Tool
Lumber Wood Products	Heating	Insulation - Ducting	sqft	New	0.02	20	\$0.84	15%	25%	\$1.09	0.03	0.03	Building Energy Simulation Tool
Lumber Wood Products	Ventilation	Insulation - Ducting	sqft	New	0.00	20	\$0.84	15%	25%	\$1.09	0.00	0.01	Building Energy Simulation Tool
Lumber Wood Products	Cooling	Insulation - Wall Cavity	sqft	New	0.00	45	\$0.15	45%	50%	\$0.02	0.00	0.00	Building Energy Simulation Tool
Lumber Wood Products	Heating	Insulation - Wall Cavity	sqft	New	0.71	45	\$0.15	45%	50%	\$0.02	0.46	0.00	Building Energy Simulation Tool
Lumber Wood Products	Ventilation	Insulation - Wall Cavity	sqft	New	0.01	45	\$0.15	45%	50%	\$0.02	0.05	0.00	Building Energy Simulation Tool
Lumber Wood Products	Cooling	HVAC - Duct Repair and Sealing	sqft	New	0.01	18	\$0.00	15%	25%	\$0.00	0.02	0.00	Building Energy Simulation Tool
Lumber Wood Products	Heating	HVAC - Duct Repair and Sealing	sqft	New	0.05	18	\$0.00	15%	25%	\$0.00	0.06	0.03	Building Energy Simulation Tool
Lumber Wood Products	Ventilation	HVAC - Duct Repair and Sealing	sqft	New	0.00	18	\$0.00	15%	25%	\$0.00	0.01	0.01	Building Energy Simulation Tool
Lumber Wood Products	Cooling	Chiller - Chilled Water Reset	sqft	New	0.03	10	\$0.01	15%	45%	\$0.03	0.02	0.00	AEG-BEST
Lumber Wood Products	Cooling	Chiller - Chilled Water Variable-Flow System	sqft	New	0.19	15	\$0.50	15%	60%	\$0.25	0.24	0.01	AEG-BEST
Lumber Wood Products	Cooling	Chiller - Variable Speed Fans	sqft	New	0.07	15	\$0.03	15%	75%	\$0.04	0.12	0.01	New Jersey TRM

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Lumber Wood Products	Cooling	HVAC - Economizer	sqft	New	0.37	10	\$0.25	18%	30%	\$0.08	0.11	0.00	AEG-BEST
Lumber Wood Products	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.25	15%	35%	\$12.02	0.02	0.00	7th Power Plan
Lumber Wood Products	Cooling	Destratification Fans (HVLS)	sqft	New	0.14	15	\$0.63	15%	50%	\$0.05	0.33	0.00	AEG Research
Lumber Wood Products	Heating	Destratification Fans (HVLS)	sqft	New	1.30	15	\$0.63	15%	50%	\$0.05	3.12	0.00	AEG Research
Lumber Wood Products	Cooling	RTU - Maintenance	sqft	New	0.08	3	\$0.07	15%	75%	\$0.27	0.06	0.00	AEG Research
Lumber Wood Products	Cooling	Thermostat - WiFi/Interactive	sqft	New	0.26	5	\$0.66	5%	15%	\$0.09	0.04	0.00	7th Power Plan
Lumber Wood Products	Heating	Thermostat - WiFi/Interactive	sqft	New	1.21	5	\$0.66	5%	15%	\$0.09	0.20	0.00	7th Power Plan
Lumber Wood Products	Ventilation	Thermostat - WiFi/Interactive	sqft	New	0.02	5	\$0.66	5%	15%	\$0.09	0.02	0.00	7th Power Plan
Lumber Wood Products	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.38	15	\$0.35	22%	41%	\$0.06	5.01	0.00	7th Power Plan
Lumber Wood Products	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.52	15	\$0.58	22%	41%	\$0.07	6.81	0.00	7th Power Plan
Lumber Wood Products	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	New	0.02	15	\$0.00	1%	2%	\$0.01	0.01	0.00	7th Power Plan
Lumber Wood Products	Interior Lighting	Interior Lighting - Timeclocks and Timers	sqft	New	0.00	8	\$0.00	7%	7%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Lumber Wood Products	Interior Lighting	Interior Lighting - Skylights	sqft	New	0.00	15	\$1.01	18%	24%	\$0.00	0.00	0.00	AEG Research
Lumber Wood Products	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	sqft	New	0.03	16	\$1.81	5%	40%	\$3.94	0.38	0.01	7th Power Plan
Lumber Wood Products	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	New	0.03	11	\$0.00	15%	50%	\$0.01	0.33	0.01	Illinois TRM
Lumber Wood Products	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	sqft	New	0.04	8	\$0.03	15%	25%	\$0.08	0.31	0.00	7th Power Plan
Lumber Wood Products	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	New	0.02	8	\$0.02	44%	60%	\$0.08	0.26	0.06	Pacific Gas and Electric Research
Lumber Wood Products	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	New	0.02	7	\$1.19	15%	30%	\$4.41	0.27	0.00	AEG Research
Lumber Wood Products	Process	Process - Conductivity Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A

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Lumber Wood Products	Process	Process - Timers and Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Motors	Process - Timers and Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Process	Refrigeration - Floating Head Pressure	employee	New	42.86	15	\$29.44	20%	50%	\$0.07	0.20	0.00	RTF Workbook
Lumber Wood Products	Process	Refrigeration - System Optimization	employee	New	68.63	15	\$10.29	20%	50%	\$0.02	0.32	0.00	AEG Research
Lumber Wood Products	Motors	Pumping System - Equipment Upgrade	employee	New	1,751.36	10	\$262.88	9%	38%	\$0.05	6.22	0.00	7th Power Plan
Lumber Wood Products	Motors	Pumping System - System Optimization	employee	New	1,306.04	12	\$400.63	9%	38%	\$0.04	6.95	0.00	UNIDO Study on Industrial Energy Efficiency
Lumber Wood Products	Motors	Pumping System - Variable Speed Drive	employee	New	1,299.97	10	\$416.80	9%	38%	\$0.04	6.29	0.00	UNIDO Study on Industrial Energy Efficiency
Lumber Wood Products	Motors	Fan System - Equipment Upgrade	employee	New	711.66	10	\$73.06	9%	38%	\$0.04	3.44	0.00	UNIDO Study on Industrial Energy Efficiency
Lumber Wood Products	Motors	Fan System - Flow Optimization	employee	New	840.04	10	\$120.88	9%	38%	\$0.02	4.06	0.00	UNIDO Study on Industrial Energy Efficiency
Lumber Wood Products	Motors	Fan System - Variable Speed Drive	employee	New	1,259.26	10	\$608.24	9%	38%	\$0.06	6.11	0.00	UNIDO Study on Industrial Energy Efficiency
Lumber Wood Products	Motors	Compressed Air - Equipment Upgrade	employee	New	1,170.11	10	\$89.31	17%	50%	\$0.04	4.84	0.00	7th Power Plan
Lumber Wood Products	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	New	0.00	15	\$0.00	16%	38%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Lumber Wood Products	Motors	Compressed Air - Refrigerated Cycling Dryers	employee	New	0.00	10	\$0.00	16%	30%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Lumber Wood Products	Motors	Compressed Air - System Controls	employee	New	263.52	10	\$63.86	9%	38%	\$0.03	0.94	0.02	UNIDO Study on Industrial Energy Efficiency
Lumber Wood Products	Motors	Compressed Air - Leak Management Program	employee	New	667.22	10	\$64.19	18%	75%	\$0.04	4.73	0.00	7th Power Plan
Lumber Wood Products	Motors	Compressed Air - Variable Speed Drive	employee	New	486.94	15	\$391.52	26%	45%	\$0.08	1.48	0.00	UNIDO Study on Industrial Energy Efficiency
Lumber Wood Products	Motors	Compressed Air - Low Pressure-Drop Filters	employee	New	16.23	10	\$6.03	17%	50%	\$0.05	0.07	0.00	Illinois TRM
Lumber Wood Products	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	New	99.07	10	\$19.58	17%	50%	\$0.03	0.41	0.00	UNIDO Study on Industrial Energy Efficiency
Lumber Wood Products	Motors	Compressed Air - Outside Air Intake	employee	New	0.00	20	\$0.00	17%	50%	\$0.00	0.00	0.00	Michigan Energy Measures Database

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Lumber Wood Products	Motors	Compressed Air - Receiver Capacity Addition	employee	New	98.61	15	\$53.83	17%	50%	\$0.06	0.52	0.00	UNIDO Study on Industrial Energy Efficiency
Lumber Wood Products	Motors	Material Handling - Variable Speed Drive	employee	New	8,260.54	10	\$3,013.52	25%	45%	\$0.05	28.08	0.00	7th Power Plan
Lumber Wood Products	Motors	Motors - Green Rewind (<100 HP)	employee	New	112.34	10	\$49.70	10%	50%	\$0.06	3.83	0.00	7th Power Plan
Lumber Wood Products	Motors	Motors - Green Rewind (100 HP+)	employee	New	63.25	10	\$17.64	6%	25%	\$0.04	1.02	0.00	7th Power Plan
Lumber Wood Products	Motors	Switch from Belt Drive to Direct Drive	employee	New	955.53	12	\$218.18	16%	25%	\$0.03	8.47	0.02	2015-mdu-irp-report---volume-iii.pdf
Lumber Wood Products	Motors	Motors - Synchronous Belts	employee	New	253.36	10	\$65.64	16%	36%	\$0.03	3.15	0.00	7th Power Plan
Lumber Wood Products	Miscellaneous	Agriculture - Engine Block Timer	employee	New	2,476.31	3	\$30.55	0%	0%	\$0.00	0.00	0.00	Vermont TRM
Lumber Wood Products	Motors	Agriculture - Live Stock Waterer	employee	New	4,262.98	10	\$2,315.13	0%	0%	\$0.07	0.00	0.00	Ontario Power TRM
Lumber Wood Products	Process	Dairy - Milk Precoolers	employee	New	285.74	15	\$132.56	0%	0%	\$0.05	0.00	0.00	Ontario Power TRM
Lumber Wood Products	Process	Clean Room: Change Filter Strategy	employee	New	265.92	15	\$1.96	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Lumber Wood Products	Process	Clean Room: Chiller Optimize	employee	New	84.78	15	\$7.85	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Lumber Wood Products	Process	Clean Room: Clean Room HVAC	employee	New	51.43	15	\$9.47	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Lumber Wood Products	Process	Elec Chip Fab: Solidstate Chiller	employee	New	51.43	15	\$29.76	0%	0%	\$0.06	0.00	0.00	7th Power Plan
Lumber Wood Products	Process	Elec Chip Fab: Eliminate Exhaust	employee	New	33.21	15	\$7.06	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Lumber Wood Products	Process	Elec Chip Fab: Exhaust Injector	employee	New	66.43	15	\$34.04	0%	0%	\$0.06	0.00	0.00	7th Power Plan
Lumber Wood Products	Process	Elec Chip Fab: Reduce Gas Pressure	employee	New	66.48	15	\$0.68	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Lumber Wood Products	Motors	Panel: Hydraulic Press	employee	New	12,402.31	10	\$3,011.71	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Lumber Wood Products	Motors	Wood: Replace Pneumatic Conveyor	employee	New	13,681.38	10	\$225.55	15%	75%	\$0.00	0.00	0.00	7th Power Plan
Lumber Wood Products	Process	Metal: New Arc Furnace	employee	New	3,466.31	10	\$364.15	0%	0%	\$0.01	0.00	0.00	7th Power Plan

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Lumber Wood Products	Process	Paper: Premium Control Large Material	employee	New	373.97	10	\$187.32	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Lumber Wood Products	Process	Paper: Efficient Pulp Screen	employee	New	299.68	10	\$61.70	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Lumber Wood Products	Process	Kraft: Effluent Treatment System	employee	New	299.68	10	\$25.30	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Lumber Wood Products	Motors	Kraft: Efficient Agitator	employee	New	22,393.13	10	\$2,247.42	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Lumber Wood Products	Process	Mech Pulp: Premium Process	employee	New	3.35	5	\$0.43	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Lumber Wood Products	Motors	Mech Pulp: Refiner Plate Improvement	employee	New	194.11	1	\$8.57	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Lumber Wood Products	Cooling	Transformer - High Efficiency	employee	New	75.47	10	\$179.25	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Lumber Wood Products	Heating	Transformer - High Efficiency	employee	New	159.00	10	\$179.25	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Lumber Wood Products	Ventilation	Transformer - High Efficiency	employee	New	5.10	10	\$179.25	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Lumber Wood Products	Interior Lighting	Transformer - High Efficiency	employee	New	42.13	10	\$179.25	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Lumber Wood Products	Exterior Lighting	Transformer - High Efficiency	employee	New	8.93	10	\$179.25	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Lumber Wood Products	Motors	Transformer - High Efficiency	employee	New	932.88	10	\$179.25	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Lumber Wood Products	Process	Transformer - High Efficiency	employee	New	149.77	10	\$179.25	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Lumber Wood Products	Miscellaneous	Transformer - High Efficiency	employee	New	88.78	10	\$179.25	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Lumber Wood Products	Cooling	Strategic Energy Management	employee	New	215.46	3	\$1,100.91	0%	24%	\$0.08	0.01	0.00	AEG Research
Lumber Wood Products	Heating	Strategic Energy Management	employee	New	456.93	3	\$1,100.91	0%	24%	\$0.08	0.03	0.00	AEG Research
Lumber Wood Products	Ventilation	Strategic Energy Management	employee	New	14.69	3	\$1,100.91	0%	24%	\$0.08	0.01	0.00	AEG Research
Lumber Wood Products	Interior Lighting	Strategic Energy Management	employee	New	121.34	3	\$1,100.91	0%	24%	\$0.08	0.04	0.00	AEG Research
Lumber Wood Products	Exterior Lighting	Strategic Energy Management	employee	New	25.80	3	\$1,100.91	0%	24%	\$0.08	0.01	0.00	AEG Research

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Lumber Wood Products	Motors	Strategic Energy Management	employee	New	2,694.99	3	\$1,100.91	0%	24%	\$0.08	0.86	0.00	AEG Research
Lumber Wood Products	Process	Strategic Energy Management	employee	New	432.66	3	\$1,100.91	0%	24%	\$0.08	0.14	0.00	AEG Research
Lumber Wood Products	Miscellaneous	Strategic Energy Management	employee	New	256.47	3	\$1,100.91	0%	24%	\$0.08	0.10	0.00	AEG Research
Lumber Wood Products	Interior Lighting	Commissioning	employee	New	139.86	3	\$1,941.95	10%	35%	\$0.15	0.05	0.00	AEG Research
Lumber Wood Products	Exterior Lighting	Commissioning	employee	New	29.74	3	\$1,941.95	10%	35%	\$0.15	0.01	0.00	AEG Research
Lumber Wood Products	Motors	Commissioning	employee	New	3,106.24	3	\$1,941.95	10%	35%	\$0.15	1.03	0.00	AEG Research
Lumber Wood Products	Process	Commissioning	employee	New	498.69	3	\$1,941.95	10%	35%	\$0.15	0.16	0.00	AEG Research
Lumber Wood Products	Miscellaneous	Commissioning	employee	New	295.60	3	\$1,941.95	10%	35%	\$0.15	0.12	0.00	AEG Research
Lumber Wood Products	Interior Lighting	Retrocommissioning	employee	New	140.43	3	\$1,232.79	0%	0%	\$0.09	0.00	0.00	AEG Research
Lumber Wood Products	Exterior Lighting	Retrocommissioning	employee	New	29.77	3	\$1,232.79	0%	0%	\$0.09	0.00	0.01	AEG Research
Lumber Wood Products	Motors	Retrocommissioning	employee	New	3,109.61	3	\$1,232.79	0%	0%	\$0.09	0.00	0.01	AEG Research
Lumber Wood Products	Process	Retrocommissioning	employee	New	499.23	3	\$1,232.79	0%	0%	\$0.09	0.00	0.01	AEG Research
Lumber Wood Products	Miscellaneous	Retrocommissioning	employee	New	295.92	3	\$1,232.79	0%	0%	\$0.09	0.00	0.00	AEG Research
Lumber Wood Products	Motors	Municipal Sewage Treatment	employee	New	231.19	12	\$132.16	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Lumber Wood Products	Motors	Municipal Water Supply Treatment	employee	New	0.00	12	\$0.00	0%	0%	\$0.00	0.00	0.01	7th Power Plan
Metal Mfg	Cooling	Insulation - Ceiling	sqft	Existing	0.13	45	\$1.28	15%	25%	\$0.14	0.10	0.00	Building Energy Simulation Tool
Metal Mfg	Heating	Insulation - Ceiling	sqft	Existing	0.52	45	\$1.28	15%	25%	\$0.14	0.47	0.00	Building Energy Simulation Tool
Metal Mfg	Ventilation	Insulation - Ceiling	sqft	Existing	0.02	45	\$1.28	15%	25%	\$0.14	0.07	0.00	Building Energy Simulation Tool
Metal Mfg	Cooling	Insulation - Ducting	sqft	Existing	0.05	20	\$0.84	15%	25%	\$1.01	0.04	0.00	Building Energy Simulation Tool

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Metal Mfg	Heating	Insulation - Ducting	sqft	Existing	0.02	20	\$0.84	15%	25%	\$1.01	0.02	0.00	Building Energy Simulation Tool
Metal Mfg	Ventilation	Insulation - Ducting	sqft	Existing	0.00	20	\$0.84	15%	25%	\$1.01	0.00	0.00	Building Energy Simulation Tool
Metal Mfg	Cooling	Insulation - Wall Cavity	sqft	Existing	0.00	45	\$0.15	45%	50%	\$0.02	0.00	0.00	Building Energy Simulation Tool
Metal Mfg	Heating	Insulation - Wall Cavity	sqft	Existing	0.76	45	\$0.15	45%	50%	\$0.02	0.35	0.00	Building Energy Simulation Tool
Metal Mfg	Ventilation	Insulation - Wall Cavity	sqft	Existing	0.02	45	\$0.15	45%	50%	\$0.02	0.05	0.01	Building Energy Simulation Tool
Metal Mfg	Cooling	HVAC - Duct Repair and Sealing	sqft	Existing	0.02	18	\$0.00	15%	25%	\$0.00	0.01	0.02	Building Energy Simulation Tool
Metal Mfg	Heating	HVAC - Duct Repair and Sealing	sqft	Existing	0.05	18	\$0.00	15%	25%	\$0.00	0.05	0.00	Building Energy Simulation Tool
Metal Mfg	Ventilation	HVAC - Duct Repair and Sealing	sqft	Existing	0.00	18	\$0.00	15%	25%	\$0.00	0.01	0.00	Building Energy Simulation Tool
Metal Mfg	Cooling	Chiller - Chilled Water Reset	sqft	Existing	0.04	10	\$0.01	15%	45%	\$0.03	0.04	0.00	AEG-BEST
Metal Mfg	Cooling	Chiller - Chilled Water Variable-Flow System	sqft	Existing	0.24	15	\$0.50	15%	60%	\$0.21	0.34	0.00	AEG-BEST
Metal Mfg	Cooling	Chiller - Variable Speed Fans	sqft	Existing	0.09	15	\$0.03	15%	75%	\$0.04	0.17	0.00	New Jersey TRM
Metal Mfg	Cooling	HVAC - Economizer	sqft	Existing	0.21	10	\$0.25	18%	30%	\$0.15	0.18	0.02	AEG-BEST
Metal Mfg	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.25	15%	35%	\$10.33	0.02	0.00	7th Power Plan
Metal Mfg	Cooling	Destratification Fans (HVLS)	sqft	Existing	0.16	15	\$0.63	15%	50%	\$0.04	0.49	0.00	AEG Research
Metal Mfg	Heating	Destratification Fans (HVLS)	sqft	Existing	1.38	15	\$0.63	15%	50%	\$0.04	4.61	0.00	AEG Research
Metal Mfg	Cooling	RTU - Maintenance	sqft	Existing	0.08	3	\$0.07	15%	75%	\$0.26	0.35	0.00	AEG Research
Metal Mfg	Cooling	Thermostat - WiFi/Interactive	sqft	Existing	0.29	5	\$0.66	5%	15%	\$0.09	0.24	0.00	7th Power Plan
Metal Mfg	Heating	Thermostat - WiFi/Interactive	sqft	Existing	1.21	5	\$0.66	5%	15%	\$0.09	1.09	0.02	7th Power Plan
Metal Mfg	Ventilation	Thermostat - WiFi/Interactive	sqft	Existing	0.04	5	\$0.66	5%	15%	\$0.09	0.16	0.01	7th Power Plan
Metal Mfg	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.24	15	\$0.35	7%	33%	\$0.12	1.85	0.01	7th Power Plan
Metal Mfg	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.33	15	\$0.58	7%	33%	\$0.14	2.46	0.00	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Metal Mfg	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	Existing	0.02	15	\$0.00	1%	2%	\$0.01	0.01	0.02	7th Power Plan
Metal Mfg	Interior Lighting	Interior Lighting - Timeclocks and Timers	sqft	Existing	0.00	8	\$0.00	7%	7%	\$0.00	0.00	0.22	SCP Tool Occupancy Hour Reductions.xlsx
Metal Mfg	Interior Lighting	Interior Lighting - Skylights	sqft	Existing	0.00	15	\$1.01	15%	23%	\$0.00	0.00	0.02	AEG Research
Metal Mfg	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	sqft	Existing	0.03	16	\$1.81	5%	40%	\$3.95	0.27	0.01	7th Power Plan
Metal Mfg	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	Existing	0.04	11	\$0.00	15%	50%	\$0.01	0.31	0.05	Illinois TRM
Metal Mfg	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	sqft	Existing	0.05	8	\$0.03	15%	25%	\$0.08	0.38	0.01	7th Power Plan
Metal Mfg	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	Existing	0.03	8	\$0.02	33%	60%	\$0.08	0.52	0.08	Pacific Gas and Electric Research
Metal Mfg	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	Existing	0.03	7	\$1.19	15%	30%	\$4.38	0.33	0.11	AEG Research
Metal Mfg	Process	Process - Conductivity Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Metal Mfg	Process	Process - Timers and Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Metal Mfg	Motors	Process - Timers and Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Metal Mfg	Process	Refrigeration - Floating Head Pressure	employee	Existing	20.39	15	\$22.09	20%	50%	\$0.11	0.25	0.02	RTF Workbook
Metal Mfg	Process	Refrigeration - System Optimization	employee	Existing	32.68	15	\$15.55	20%	50%	\$0.05	0.39	0.02	AEG Research
Metal Mfg	Motors	Pumping System - Equipment Upgrade	employee	Existing	228.74	10	\$33.52	9%	38%	\$0.05	2.85	0.02	7th Power Plan
Metal Mfg	Motors	Pumping System - System Optimization	employee	Existing	169.28	12	\$51.09	9%	38%	\$0.04	2.05	0.03	UNIDO Study on Industrial Energy Efficiency
Metal Mfg	Motors	Pumping System - Variable Speed Drive	employee	Existing	167.19	10	\$53.15	9%	38%	\$0.04	2.01	0.02	UNIDO Study on Industrial Energy Efficiency
Metal Mfg	Motors	Fan System - Equipment Upgrade	employee	Existing	60.29	10	\$6.04	9%	38%	\$0.04	0.73	0.00	UNIDO Study on Industrial Energy Efficiency
Metal Mfg	Motors	Fan System - Flow Optimization	employee	Existing	71.14	10	\$9.99	9%	38%	\$0.02	0.86	0.00	UNIDO Study on Industrial Energy Efficiency
Metal Mfg	Motors	Fan System - Variable Speed Drive	employee	Existing	103.36	10	\$50.27	9%	38%	\$0.06	1.23	0.00	UNIDO Study on Industrial Energy Efficiency

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Metal Mfg	Motors	Compressed Air - Equipment Upgrade	employee	Existing	417.01	10	\$30.34	17%	50%	\$0.04	6.11	0.06	7th Power Plan
Metal Mfg	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	Existing	0.00	15	\$0.00	16%	38%	\$0.00	0.00	0.10	Michigan Energy Measures Database
Metal Mfg	Motors	Compressed Air - Refrigerated Cycling Dryers	employee	Existing	0.00	10	\$0.00	16%	30%	\$0.00	0.00	2.83	Michigan Energy Measures Database
Metal Mfg	Motors	Compressed Air - System Controls	employee	Existing	90.80	10	\$21.70	9%	38%	\$0.03	1.13	2.01	UNIDO Study on Industrial Energy Efficiency
Metal Mfg	Motors	Compressed Air - Leak Management Program	employee	Existing	235.01	10	\$21.81	18%	75%	\$0.04	5.89	1.98	7th Power Plan
Metal Mfg	Motors	Compressed Air - Variable Speed Drive	employee	Existing	164.96	15	\$133.01	26%	45%	\$0.08	1.35	0.25	UNIDO Study on Industrial Energy Efficiency
Metal Mfg	Motors	Compressed Air - Low Pressure-Drop Filters	employee	Existing	5.50	10	\$2.05	17%	50%	\$0.05	0.08	0.29	Illinois TRM
Metal Mfg	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	Existing	34.24	10	\$6.65	17%	50%	\$0.03	0.50	0.42	UNIDO Study on Industrial Energy Efficiency
Metal Mfg	Motors	Compressed Air - Outside Air Intake	employee	Existing	0.00	20	\$0.00	17%	50%	\$0.00	0.00	1.55	Michigan Energy Measures Database
Metal Mfg	Motors	Compressed Air - Receiver Capacity Addition	employee	Existing	33.82	15	\$18.29	17%	50%	\$0.06	0.49	0.00	UNIDO Study on Industrial Energy Efficiency
Metal Mfg	Motors	Material Handling - Variable Speed Drive	employee	Existing	1,013.94	10	\$367.58	25%	45%	\$0.05	8.56	0.00	7th Power Plan
Metal Mfg	Motors	Motors - Green Rewind (<100 HP)	employee	Existing	14.63	10	\$6.51	10%	50%	\$0.06	1.22	0.29	7th Power Plan
Metal Mfg	Motors	Motors - Green Rewind (100 HP+)	employee	Existing	8.37	10	\$2.31	6%	25%	\$0.04	0.34	1.50	7th Power Plan
Metal Mfg	Motors	Switch from Belt Drive to Direct Drive	employee	Existing	127.67	12	\$28.57	16%	25%	\$0.03	2.58	0.36	2015-mdu-irp-report---volume-iii.pdf
Metal Mfg	Motors	Motors - Synchronous Belts	employee	Existing	33.58	10	\$8.60	16%	36%	\$0.03	1.46	0.02	7th Power Plan
Metal Mfg	Miscellaneous	Agriculture - Engine Block Timer	employee	Existing	426.50	3	\$5.26	0%	0%	\$0.00	0.00	0.13	Vermont TRM
Metal Mfg	Motors	Agriculture - Live Stock Waterer	employee	Existing	539.54	10	\$295.24	0%	0%	\$0.07	0.00	0.00	Ontario Power TRM
Metal Mfg	Process	Dairy - Milk Precoolers	employee	Existing	135.95	15	\$70.28	0%	0%	\$0.05	0.00	0.13	Ontario Power TRM
Metal Mfg	Process	Clean Room: Change Filter Strategy	employee	Existing	230.95	15	\$1.70	0%	0%	\$0.00	0.00	0.40	7th Power Plan

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Metal Mfg	Process	Clean Room: Chiller Optimize	employee	Existing	44.95	15	\$4.16	0%	0%	\$0.01	0.00	0.29	7th Power Plan
Metal Mfg	Process	Clean Room: Clean Room HVAC	employee	Existing	27.29	15	\$5.02	0%	0%	\$0.02	0.00	0.08	7th Power Plan
Metal Mfg	Process	Elec Chip Fab: Solidstate Chiller	employee	Existing	24.47	15	\$15.78	0%	0%	\$0.06	0.00	0.59	7th Power Plan
Metal Mfg	Process	Elec Chip Fab: Eliminate Exhaust	employee	Existing	25.93	15	\$6.13	0%	0%	\$0.02	0.00	0.34	7th Power Plan
Metal Mfg	Process	Elec Chip Fab: Exhaust Injector	employee	Existing	51.77	15	\$29.56	0%	0%	\$0.06	0.00	0.00	7th Power Plan
Metal Mfg	Process	Elec Chip Fab: Reduce Gas Pressure	employee	Existing	57.74	15	\$0.59	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Metal Mfg	Motors	Panel: Hydraulic Press	employee	Existing	1,530.86	10	\$367.36	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Metal Mfg	Motors	Wood: Replace Pneumatic Conveyor	employee	Existing	1,668.83	10	\$27.51	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Metal Mfg	Process	Metal: New Arc Furnace	employee	Existing	1,543.08	10	\$161.98	15%	75%	\$0.01	37.66	0.00	7th Power Plan
Metal Mfg	Process	Paper: Premium Control Large Material	employee	Existing	179.59	10	\$100.30	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Metal Mfg	Process	Paper: Efficient Pulp Screen	employee	Existing	144.25	10	\$33.04	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Metal Mfg	Process	Kraft: Effluent Treatment System	employee	Existing	160.59	10	\$13.54	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Metal Mfg	Motors	Kraft: Efficient Agitator	employee	Existing	2,799.56	10	\$274.14	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Metal Mfg	Process	Mech Pulp: Premium Process	employee	Existing	1.61	5	\$0.23	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Metal Mfg	Motors	Mech Pulp: Refiner Plate Improvement	employee	Existing	23.50	1	\$1.05	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Metal Mfg	Cooling	Transformer - High Efficiency	employee	Existing	36.92	10	\$42.07	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Metal Mfg	Heating	Transformer - High Efficiency	employee	Existing	69.34	10	\$42.07	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Metal Mfg	Ventilation	Transformer - High Efficiency	employee	Existing	3.80	10	\$42.07	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Metal Mfg	Interior Lighting	Transformer - High Efficiency	employee	Existing	14.69	10	\$42.07	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Metal Mfg	Exterior Lighting	Transformer - High Efficiency	employee	Existing	3.18	10	\$42.07	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Metal Mfg	Motors	Transformer - High Efficiency	employee	Existing	121.26	10	\$42.07	15%	15%	\$0.02	0.00	0.00	7th Power Plan

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Metal Mfg	Process	Transformer - High Efficiency	employee	Existing	71.92	10	\$42.07	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Metal Mfg	Miscellaneous	Transformer - High Efficiency	employee	Existing	16.14	10	\$42.07	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Metal Mfg	Cooling	Strategic Energy Management	employee	Existing	101.61	3	\$258.40	0%	5%	\$0.08	0.04	0.00	AEG Research
Metal Mfg	Heating	Strategic Energy Management	employee	Existing	196.85	3	\$258.40	0%	5%	\$0.08	0.08	0.00	AEG Research
Metal Mfg	Ventilation	Strategic Energy Management	employee	Existing	10.87	3	\$258.40	0%	5%	\$0.08	0.02	0.00	AEG Research
Metal Mfg	Interior Lighting	Strategic Energy Management	employee	Existing	41.81	3	\$258.40	0%	5%	\$0.08	0.07	0.00	AEG Research
Metal Mfg	Exterior Lighting	Strategic Energy Management	employee	Existing	9.10	3	\$258.40	0%	5%	\$0.08	0.01	0.00	AEG Research
Metal Mfg	Motors	Strategic Energy Management	employee	Existing	346.88	3	\$258.40	0%	5%	\$0.08	0.68	0.00	AEG Research
Metal Mfg	Process	Strategic Energy Management	employee	Existing	205.78	3	\$258.40	0%	5%	\$0.08	0.38	0.00	AEG Research
Metal Mfg	Miscellaneous	Strategic Energy Management	employee	Existing	46.12	3	\$258.40	0%	5%	\$0.08	0.12	0.00	AEG Research
Metal Mfg	Interior Lighting	Commissioning	employee	Existing	48.19	3	\$366.82	0%	0%	\$0.15	0.00	0.00	AEG Research
Metal Mfg	Exterior Lighting	Commissioning	employee	Existing	10.49	3	\$366.82	0%	0%	\$0.15	0.00	0.00	AEG Research
Metal Mfg	Motors	Commissioning	employee	Existing	399.75	3	\$366.82	0%	0%	\$0.15	0.00	0.00	AEG Research
Metal Mfg	Process	Commissioning	employee	Existing	237.15	3	\$366.82	0%	0%	\$0.15	0.00	0.00	AEG Research
Metal Mfg	Miscellaneous	Commissioning	employee	Existing	53.15	3	\$366.82	0%	0%	\$0.15	0.00	0.00	AEG Research
Metal Mfg	Interior Lighting	Retrocommissioning	employee	Existing	48.98	3	\$232.87	5%	39%	\$0.09	0.54	0.16	AEG Research
Metal Mfg	Exterior Lighting	Retrocommissioning	employee	Existing	10.59	3	\$232.87	5%	39%	\$0.09	0.12	0.02	AEG Research
Metal Mfg	Motors	Retrocommissioning	employee	Existing	404.19	3	\$232.87	5%	39%	\$0.09	5.43	0.00	AEG Research
Metal Mfg	Process	Retrocommissioning	employee	Existing	239.74	3	\$232.87	5%	39%	\$0.09	3.05	0.00	AEG Research
Metal Mfg	Miscellaneous	Retrocommissioning	employee	Existing	53.81	3	\$232.87	5%	39%	\$0.09	0.94	0.00	AEG Research
Metal Mfg	Motors	Municipal Sewage Treatment	employee	Existing	29.32	12	\$16.85	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Metal Mfg	Motors	Municipal Water Supply Treatment	employee	Existing	0.00	12	\$0.00	0%	0%	\$0.00	0.00	0.00	7th Power Plan

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Metal Mfg	Cooling	Insulation - Ceiling	sqft	New	0.11	45	\$1.28	15%	25%	\$0.15	0.02	0.00	Building Energy Simulation Tool
Metal Mfg	Heating	Insulation - Ceiling	sqft	New	0.51	45	\$1.28	15%	25%	\$0.15	0.11	0.03	Building Energy Simulation Tool
Metal Mfg	Ventilation	Insulation - Ceiling	sqft	New	0.01	45	\$1.28	15%	25%	\$0.15	0.01	0.01	Building Energy Simulation Tool
Metal Mfg	Cooling	Insulation - Ducting	sqft	New	0.04	20	\$0.84	15%	25%	\$1.09	0.01	1.25	Building Energy Simulation Tool
Metal Mfg	Heating	Insulation - Ducting	sqft	New	0.02	20	\$0.84	15%	25%	\$1.09	0.00	0.17	Building Energy Simulation Tool
Metal Mfg	Ventilation	Insulation - Ducting	sqft	New	0.00	20	\$0.84	15%	25%	\$1.09	0.00	0.03	Building Energy Simulation Tool
Metal Mfg	Cooling	Insulation - Wall Cavity	sqft	New	0.00	45	\$0.15	45%	50%	\$0.02	0.00	0.00	Building Energy Simulation Tool
Metal Mfg	Heating	Insulation - Wall Cavity	sqft	New	0.71	45	\$0.15	45%	50%	\$0.02	0.07	0.00	Building Energy Simulation Tool
Metal Mfg	Ventilation	Insulation - Wall Cavity	sqft	New	0.01	45	\$0.15	45%	50%	\$0.02	0.01	0.00	Building Energy Simulation Tool
Metal Mfg	Cooling	HVAC - Duct Repair and Sealing	sqft	New	0.01	18	\$0.00	15%	25%	\$0.00	0.00	0.01	Building Energy Simulation Tool
Metal Mfg	Heating	HVAC - Duct Repair and Sealing	sqft	New	0.05	18	\$0.00	15%	25%	\$0.00	0.01	0.00	Building Energy Simulation Tool
Metal Mfg	Ventilation	HVAC - Duct Repair and Sealing	sqft	New	0.00	18	\$0.00	15%	25%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Metal Mfg	Cooling	Chiller - Chilled Water Reset	sqft	New	0.04	10	\$0.01	15%	45%	\$0.03	0.00	0.00	AEG-BEST
Metal Mfg	Cooling	Chiller - Chilled Water Variable-Flow System	sqft	New	0.19	15	\$0.50	15%	60%	\$0.25	0.04	0.00	AEG-BEST
Metal Mfg	Cooling	Chiller - Variable Speed Fans	sqft	New	0.07	15	\$0.03	15%	75%	\$0.04	0.02	0.00	New Jersey TRM
Metal Mfg	Cooling	HVAC - Economizer	sqft	New	0.19	10	\$0.25	18%	30%	\$0.16	0.02	0.00	AEG-BEST
Metal Mfg	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.25	15%	35%	\$12.03	0.00	0.00	7th Power Plan
Metal Mfg	Cooling	Destratification Fans (HVLS)	sqft	New	0.14	15	\$0.63	15%	50%	\$0.05	0.05	0.00	AEG Research
Metal Mfg	Heating	Destratification Fans (HVLS)	sqft	New	1.30	15	\$0.63	15%	50%	\$0.05	0.52	0.00	AEG Research
Metal Mfg	Cooling	RTU - Maintenance	sqft	New	0.08	3	\$0.07	15%	75%	\$0.27	0.01	0.00	AEG Research
Metal Mfg	Cooling	Thermostat - WiFi/Interactive	sqft	New	0.26	5	\$0.66	5%	15%	\$0.09	0.01	0.00	7th Power Plan

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Metal Mfg	Heating	Thermostat - WiFi/Interactive	sqft	New	1.21	5	\$0.66	5%	15%	\$0.09	0.03	0.00	7th Power Plan
Metal Mfg	Ventilation	Thermostat - WiFi/Interactive	sqft	New	0.02	5	\$0.66	5%	15%	\$0.09	0.00	0.00	7th Power Plan
Metal Mfg	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.20	15	\$0.35	22%	41%	\$0.12	0.49	0.00	7th Power Plan
Metal Mfg	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.27	15	\$0.58	22%	41%	\$0.14	0.67	0.00	7th Power Plan
Metal Mfg	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	New	0.02	15	\$0.00	1%	2%	\$0.01	0.00	0.00	7th Power Plan
Metal Mfg	Interior Lighting	Interior Lighting - Timeclocks and Timers	sqft	New	0.00	8	\$0.00	7%	7%	\$0.00	0.00	0.04	SCP Tool Occupancy Hour Reductions.xlsx
Metal Mfg	Interior Lighting	Interior Lighting - Skylights	sqft	New	0.00	15	\$1.01	18%	24%	\$0.00	0.00	0.00	AEG Research
Metal Mfg	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	sqft	New	0.03	16	\$1.81	5%	40%	\$3.94	0.04	0.00	7th Power Plan
Metal Mfg	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	New	0.03	11	\$0.00	15%	50%	\$0.01	0.03	0.00	Illinois TRM
Metal Mfg	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	sqft	New	0.04	8	\$0.03	15%	25%	\$0.08	0.03	0.00	7th Power Plan
Metal Mfg	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	New	0.02	8	\$0.02	44%	60%	\$0.08	0.03	0.03	Pacific Gas and Electric Research
Metal Mfg	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	New	0.03	7	\$1.19	15%	30%	\$4.39	0.03	0.04	AEG Research
Metal Mfg	Process	Process - Conductivity Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Metal Mfg	Process	Process - Timers and Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Metal Mfg	Motors	Process - Timers and Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Metal Mfg	Process	Refrigeration - Floating Head Pressure	employee	New	21.61	15	\$15.61	20%	50%	\$0.07	0.04	0.00	RTF Workbook
Metal Mfg	Process	Refrigeration - System Optimization	employee	New	36.39	15	\$5.46	20%	50%	\$0.02	0.07	0.00	AEG Research
Metal Mfg	Motors	Pumping System - Equipment Upgrade	employee	New	232.78	10	\$33.52	9%	38%	\$0.05	0.32	0.00	7th Power Plan
Metal Mfg	Motors	Pumping System - System Optimization	employee	New	173.50	12	\$51.09	9%	38%	\$0.04	0.35	0.00	UNIDO Study on Industrial Energy Efficiency

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Metal Mfg	Motors	Pumping System - Variable Speed Drive	employee	New	172.49	10	\$53.15	9%	38%	\$0.04	0.31	0.00	UNIDO Study on Industrial Energy Efficiency
Metal Mfg	Motors	Fan System - Equipment Upgrade	employee	New	61.25	10	\$6.04	9%	38%	\$0.04	0.11	0.00	UNIDO Study on Industrial Energy Efficiency
Metal Mfg	Motors	Fan System - Flow Optimization	employee	New	72.33	10	\$9.99	9%	38%	\$0.02	0.13	0.00	UNIDO Study on Industrial Energy Efficiency
Metal Mfg	Motors	Fan System - Variable Speed Drive	employee	New	108.21	10	\$50.27	9%	38%	\$0.06	0.20	0.00	UNIDO Study on Industrial Energy Efficiency
Metal Mfg	Motors	Compressed Air - Equipment Upgrade	employee	New	417.01	10	\$30.34	17%	50%	\$0.04	0.67	0.01	7th Power Plan
Metal Mfg	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	New	0.00	15	\$0.00	16%	38%	\$0.00	0.00	0.02	Michigan Energy Measures Database
Metal Mfg	Motors	Compressed Air - Refrigerated Cycling Dryers	employee	New	0.00	10	\$0.00	16%	30%	\$0.00	0.00	0.54	Michigan Energy Measures Database
Metal Mfg	Motors	Compressed Air - System Controls	employee	New	93.26	10	\$21.70	9%	38%	\$0.03	0.13	0.51	UNIDO Study on Industrial Energy Efficiency
Metal Mfg	Motors	Compressed Air - Leak Management Program	employee	New	236.91	10	\$21.81	18%	75%	\$0.04	0.65	0.44	7th Power Plan
Metal Mfg	Motors	Compressed Air - Variable Speed Drive	employee	New	172.16	15	\$133.01	26%	45%	\$0.08	0.20	0.05	UNIDO Study on Industrial Energy Efficiency
Metal Mfg	Motors	Compressed Air - Low Pressure-Drop Filters	employee	New	5.74	10	\$2.05	17%	50%	\$0.05	0.01	0.06	Illinois TRM
Metal Mfg	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	New	35.07	10	\$6.65	17%	50%	\$0.03	0.06	0.10	UNIDO Study on Industrial Energy Efficiency
Metal Mfg	Motors	Compressed Air - Outside Air Intake	employee	New	0.00	20	\$0.00	17%	50%	\$0.00	0.00	0.30	Michigan Energy Measures Database
Metal Mfg	Motors	Compressed Air - Receiver Capacity Addition	employee	New	34.87	15	\$18.29	17%	50%	\$0.06	0.07	0.00	UNIDO Study on Industrial Energy Efficiency
Metal Mfg	Motors	Material Handling - Variable Speed Drive	employee	New	1,048.33	10	\$367.58	25%	45%	\$0.05	1.33	0.00	7th Power Plan
Metal Mfg	Motors	Motors - Green Rewind (<100 HP)	employee	New	15.30	10	\$6.51	10%	50%	\$0.06	0.19	0.06	7th Power Plan
Metal Mfg	Motors	Motors - Green Rewind (100 HP+)	employee	New	8.62	10	\$2.31	6%	25%	\$0.04	0.05	0.29	7th Power Plan
Metal Mfg	Motors	Switch from Belt Drive to Direct Drive	employee	New	130.42	12	\$28.57	16%	25%	\$0.03	0.43	0.08	2015-mdu-irp-report---volume-iii.pdf
Metal Mfg	Motors	Motors - Synchronous Belts	employee	New	34.54	10	\$8.60	16%	36%	\$0.03	0.17	0.00	7th Power Plan

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Metal Mfg	Miscellaneous	Agriculture - Engine Block Timer	employee	New	426.50	3	\$5.26	0%	0%	\$0.00	0.00	0.02	Vermont TRM
Metal Mfg	Motors	Agriculture - Live Stock Waterer	employee	New	565.59	10	\$295.24	0%	0%	\$0.07	0.00	0.00	Ontario Power TRM
Metal Mfg	Process	Dairy - Milk Precoolers	employee	New	144.06	15	\$70.28	0%	0%	\$0.05	0.00	0.03	Ontario Power TRM
Metal Mfg	Process	Clean Room: Change Filter Strategy	employee	New	230.95	15	\$1.70	0%	0%	\$0.00	0.00	0.09	7th Power Plan
Metal Mfg	Process	Clean Room: Chiller Optimize	employee	New	44.95	15	\$4.16	0%	0%	\$0.01	0.00	0.06	7th Power Plan
Metal Mfg	Process	Clean Room: Clean Room HVAC	employee	New	27.27	15	\$5.02	0%	0%	\$0.02	0.00	0.02	7th Power Plan
Metal Mfg	Process	Elec Chip Fab: Solidstate Chiller	employee	New	25.93	15	\$15.78	0%	0%	\$0.06	0.00	0.15	7th Power Plan
Metal Mfg	Process	Elec Chip Fab: Eliminate Exhaust	employee	New	27.43	15	\$6.13	0%	0%	\$0.02	0.00	0.07	7th Power Plan
Metal Mfg	Process	Elec Chip Fab: Exhaust Injector	employee	New	54.86	15	\$29.56	0%	0%	\$0.06	0.00	0.00	7th Power Plan
Metal Mfg	Process	Elec Chip Fab: Reduce Gas Pressure	employee	New	57.74	15	\$0.59	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Metal Mfg	Motors	Panel: Hydraulic Press	employee	New	1,576.50	10	\$367.36	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Metal Mfg	Motors	Wood: Replace Pneumatic Conveyor	employee	New	1,668.83	10	\$27.51	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Metal Mfg	Process	Metal: New Arc Furnace	employee	New	1,541.82	10	\$161.98	15%	75%	\$0.01	3.68	0.00	7th Power Plan
Metal Mfg	Process	Paper: Premium Control Large Material	employee	New	190.41	10	\$100.30	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Metal Mfg	Process	Paper: Efficient Pulp Screen	employee	New	152.59	10	\$33.04	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Metal Mfg	Process	Kraft: Effluent Treatment System	employee	New	160.45	10	\$13.54	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Metal Mfg	Motors	Kraft: Efficient Agitator	employee	New	2,844.35	10	\$274.14	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Metal Mfg	Process	Mech Pulp: Premium Process	employee	New	1.71	5	\$0.23	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Metal Mfg	Motors	Mech Pulp: Refiner Plate Improvement	employee	New	24.63	1	\$1.05	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Metal Mfg	Cooling	Transformer - High Efficiency	employee	New	33.21	10	\$41.18	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Metal Mfg	Heating	Transformer - High Efficiency	employee	New	69.00	10	\$41.18	15%	15%	\$0.02	0.00	0.00	7th Power Plan

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Metal Mfg	Ventilation	Transformer - High Efficiency	employee	New	2.36	10	\$41.18	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Metal Mfg	Interior Lighting	Transformer - High Efficiency	employee	New	11.95	10	\$41.18	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Metal Mfg	Exterior Lighting	Transformer - High Efficiency	employee	New	2.57	10	\$41.18	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Metal Mfg	Motors	Transformer - High Efficiency	employee	New	127.11	10	\$41.18	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Metal Mfg	Process	Transformer - High Efficiency	employee	New	76.26	10	\$41.18	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Metal Mfg	Miscellaneous	Transformer - High Efficiency	employee	New	15.29	10	\$41.18	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Metal Mfg	Cooling	Strategic Energy Management	employee	New	94.42	3	\$252.92	0%	5%	\$0.08	0.00	0.00	AEG Research
Metal Mfg	Heating	Strategic Energy Management	employee	New	198.29	3	\$252.92	0%	5%	\$0.08	0.00	0.00	AEG Research
Metal Mfg	Ventilation	Strategic Energy Management	employee	New	6.79	3	\$252.92	0%	5%	\$0.08	0.00	0.00	AEG Research
Metal Mfg	Interior Lighting	Strategic Energy Management	employee	New	34.41	3	\$252.92	0%	5%	\$0.08	0.00	0.00	AEG Research
Metal Mfg	Exterior Lighting	Strategic Energy Management	employee	New	7.43	3	\$252.92	0%	5%	\$0.08	0.00	0.00	AEG Research
Metal Mfg	Motors	Strategic Energy Management	employee	New	367.21	3	\$252.92	0%	5%	\$0.08	0.01	0.00	AEG Research
Metal Mfg	Process	Strategic Energy Management	employee	New	220.30	3	\$252.92	0%	5%	\$0.08	0.01	0.00	AEG Research
Metal Mfg	Miscellaneous	Strategic Energy Management	employee	New	44.17	3	\$252.92	0%	5%	\$0.08	0.00	0.00	AEG Research
Metal Mfg	Interior Lighting	Commissioning	employee	New	39.69	3	\$369.01	5%	39%	\$0.15	0.01	0.00	AEG Research
Metal Mfg	Exterior Lighting	Commissioning	employee	New	8.57	3	\$369.01	5%	39%	\$0.15	0.00	0.00	AEG Research
Metal Mfg	Motors	Commissioning	employee	New	423.60	3	\$369.01	5%	39%	\$0.15	0.07	0.00	AEG Research
Metal Mfg	Process	Commissioning	employee	New	254.13	3	\$369.01	5%	39%	\$0.15	0.04	0.00	AEG Research
Metal Mfg	Miscellaneous	Commissioning	employee	New	50.96	3	\$369.01	5%	39%	\$0.15	0.01	0.00	AEG Research
Metal Mfg	Interior Lighting	Retrocommissioning	employee	New	39.83	3	\$234.25	0%	0%	\$0.09	0.00	0.00	AEG Research

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Metal Mfg	Exterior Lighting	Retrocommissioning	employee	New	8.57	3	\$234.25	0%	0%	\$0.09	0.00	0.00	AEG Research
Metal Mfg	Motors	Retrocommissioning	employee	New	423.70	3	\$234.25	0%	0%	\$0.09	0.00	0.00	AEG Research
Metal Mfg	Process	Retrocommissioning	employee	New	254.19	3	\$234.25	0%	0%	\$0.09	0.00	0.00	AEG Research
Metal Mfg	Miscellaneous	Retrocommissioning	employee	New	50.97	3	\$234.25	0%	0%	\$0.09	0.00	0.00	AEG Research
Metal Mfg	Motors	Municipal Sewage Treatment	employee	New	30.65	12	\$16.85	0%	0%	\$0.07	0.00	0.04	7th Power Plan
Metal Mfg	Motors	Municipal Water Supply Treatment	employee	New	0.00	12	\$0.00	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Misc. Mfg	Cooling	Insulation - Ceiling	sqft	Existing	0.13	45	\$1.28	15%	25%	\$0.14	0.21	0.03	Building Energy Simulation Tool
Misc. Mfg	Heating	Insulation - Ceiling	sqft	Existing	0.52	45	\$1.28	15%	25%	\$0.14	0.94	0.55	Building Energy Simulation Tool
Misc. Mfg	Ventilation	Insulation - Ceiling	sqft	Existing	0.02	45	\$1.28	15%	25%	\$0.14	0.14	0.40	Building Energy Simulation Tool
Misc. Mfg	Cooling	Insulation - Ducting	sqft	Existing	0.05	20	\$0.84	15%	25%	\$1.01	0.08	0.15	Building Energy Simulation Tool
Misc. Mfg	Heating	Insulation - Ducting	sqft	Existing	0.02	20	\$0.84	15%	25%	\$1.01	0.04	0.00	Building Energy Simulation Tool
Misc. Mfg	Ventilation	Insulation - Ducting	sqft	Existing	0.00	20	\$0.84	15%	25%	\$1.01	0.01	0.00	Building Energy Simulation Tool
Misc. Mfg	Cooling	Insulation - Wall Cavity	sqft	Existing	0.00	45	\$0.15	45%	50%	\$0.02	0.00	0.01	Building Energy Simulation Tool
Misc. Mfg	Heating	Insulation - Wall Cavity	sqft	Existing	0.76	45	\$0.15	45%	50%	\$0.02	0.71	0.03	Building Energy Simulation Tool
Misc. Mfg	Ventilation	Insulation - Wall Cavity	sqft	Existing	0.02	45	\$0.15	45%	50%	\$0.02	0.09	0.00	Building Energy Simulation Tool
Misc. Mfg	Cooling	HVAC - Duct Repair and Sealing	sqft	Existing	0.02	18	\$0.00	15%	25%	\$0.00	0.03	0.00	Building Energy Simulation Tool
Misc. Mfg	Heating	HVAC - Duct Repair and Sealing	sqft	Existing	0.05	18	\$0.00	15%	25%	\$0.00	0.10	0.00	Building Energy Simulation Tool
Misc. Mfg	Ventilation	HVAC - Duct Repair and Sealing	sqft	Existing	0.00	18	\$0.00	15%	25%	\$0.00	0.01	0.00	Building Energy Simulation Tool
Misc. Mfg	Cooling	Chiller - Chilled Water Reset	sqft	Existing	0.04	10	\$0.01	15%	45%	\$0.03	0.08	0.00	AEG-BEST
Misc. Mfg	Cooling	Chiller - Chilled Water Variable-Flow System	sqft	Existing	0.24	15	\$0.50	15%	60%	\$0.21	0.67	0.02	AEG-BEST

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Misc. Mfg	Cooling	Chiller - Variable Speed Fans	sqft	Existing	0.09	15	\$0.03	15%	75%	\$0.04	0.34	0.00	New Jersey TRM
Misc. Mfg	Cooling	HVAC - Economizer	sqft	Existing	0.01	10	\$0.25	18%	30%	\$2.52	0.34	0.00	AEG-BEST
Misc. Mfg	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.25	15%	35%	\$10.34	0.04	0.00	7th Power Plan
Misc. Mfg	Cooling	Destratification Fans (HVLS)	sqft	Existing	0.16	15	\$0.63	15%	50%	\$0.04	0.98	0.00	AEG Research
Misc. Mfg	Heating	Destratification Fans (HVLS)	sqft	Existing	1.38	15	\$0.63	15%	50%	\$0.04	9.26	0.00	AEG Research
Misc. Mfg	Cooling	RTU - Maintenance	sqft	Existing	0.08	3	\$0.07	15%	75%	\$0.26	0.71	0.02	AEG Research
Misc. Mfg	Cooling	Thermostat - WiFi/Interactive	sqft	Existing	0.29	5	\$0.66	5%	15%	\$0.09	0.48	0.01	7th Power Plan
Misc. Mfg	Heating	Thermostat - WiFi/Interactive	sqft	Existing	1.21	5	\$0.66	5%	15%	\$0.09	2.19	0.01	7th Power Plan
Misc. Mfg	Ventilation	Thermostat - WiFi/Interactive	sqft	Existing	0.04	5	\$0.66	5%	15%	\$0.09	0.32	0.00	7th Power Plan
Misc. Mfg	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.01	15	\$0.35	7%	33%	\$1.98	2.71	0.02	7th Power Plan
Misc. Mfg	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.02	15	\$0.58	7%	33%	\$2.33	3.60	0.19	7th Power Plan
Misc. Mfg	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	Existing	0.02	15	\$0.00	1%	2%	\$0.01	0.01	0.01	7th Power Plan
Misc. Mfg	Interior Lighting	Interior Lighting - Timeclocks and Timers	sqft	Existing	0.00	8	\$0.00	7%	7%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Misc. Mfg	Interior Lighting	Interior Lighting - Skylights	sqft	Existing	0.00	15	\$1.01	15%	23%	\$0.00	0.00	0.01	AEG Research
Misc. Mfg	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	sqft	Existing	0.03	16	\$1.81	5%	40%	\$3.95	0.40	0.00	7th Power Plan
Misc. Mfg	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	Existing	0.04	11	\$0.00	15%	50%	\$0.01	0.46	0.14	Illinois TRM
Misc. Mfg	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	sqft	Existing	0.05	8	\$0.03	15%	25%	\$0.08	0.55	0.20	7th Power Plan
Misc. Mfg	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	Existing	0.03	8	\$0.02	33%	60%	\$0.08	0.77	0.00	Pacific Gas and Electric Research
Misc. Mfg	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	Existing	0.03	7	\$1.19	15%	30%	\$4.38	0.48	0.00	AEG Research
Misc. Mfg	Process	Process - Conductivity Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A

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Misc. Mfg	Process	Process - Timers and Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.02	N/A
Misc. Mfg	Motors	Process - Timers and Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.01	N/A
Misc. Mfg	Process	Refrigeration - Floating Head Pressure	employee	Existing	19.25	15	\$18.78	20%	50%	\$0.11	0.42	0.02	RTF Workbook
Misc. Mfg	Process	Refrigeration - System Optimization	employee	Existing	30.95	15	\$13.23	20%	50%	\$0.05	0.67	0.01	AEG Research
Misc. Mfg	Motors	Pumping System - Equipment Upgrade	employee	Existing	130.44	10	\$19.28	9%	38%	\$0.05	2.69	0.01	7th Power Plan
Misc. Mfg	Motors	Pumping System - System Optimization	employee	Existing	96.09	12	\$29.39	9%	38%	\$0.04	1.92	0.00	UNIDO Study on Industrial Energy Efficiency
Misc. Mfg	Motors	Pumping System - Variable Speed Drive	employee	Existing	94.57	10	\$30.57	9%	38%	\$0.04	1.88	0.00	UNIDO Study on Industrial Energy Efficiency
Misc. Mfg	Motors	Fan System - Equipment Upgrade	employee	Existing	47.93	10	\$4.82	9%	38%	\$0.04	0.97	0.00	UNIDO Study on Industrial Energy Efficiency
Misc. Mfg	Motors	Fan System - Flow Optimization	employee	Existing	56.45	10	\$7.98	9%	38%	\$0.02	1.14	0.01	UNIDO Study on Industrial Energy Efficiency
Misc. Mfg	Motors	Fan System - Variable Speed Drive	employee	Existing	81.45	10	\$40.14	9%	38%	\$0.06	1.61	0.02	UNIDO Study on Industrial Energy Efficiency
Misc. Mfg	Motors	Compressed Air - Equipment Upgrade	employee	Existing	166.36	10	\$12.11	17%	50%	\$0.04	4.05	0.05	7th Power Plan
Misc. Mfg	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	Existing	0.00	15	\$0.00	16%	38%	\$0.00	0.00	0.05	Michigan Energy Measures Database
Misc. Mfg	Motors	Compressed Air - Refrigerated Cycling Dryers	employee	Existing	0.00	10	\$0.00	16%	30%	\$0.00	0.00	0.04	Michigan Energy Measures Database
Misc. Mfg	Motors	Compressed Air - System Controls	employee	Existing	35.64	10	\$8.66	9%	38%	\$0.03	0.73	0.01	UNIDO Study on Industrial Energy Efficiency
Misc. Mfg	Motors	Compressed Air - Leak Management Program	employee	Existing	93.56	10	\$8.70	18%	75%	\$0.04	3.89	0.02	7th Power Plan
Misc. Mfg	Motors	Compressed Air - Variable Speed Drive	employee	Existing	64.98	15	\$53.07	26%	45%	\$0.08	0.88	0.03	UNIDO Study on Industrial Energy Efficiency
Misc. Mfg	Motors	Compressed Air - Low Pressure-Drop Filters	employee	Existing	2.17	10	\$0.82	17%	50%	\$0.05	0.05	0.10	Illinois TRM
Misc. Mfg	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	Existing	13.48	10	\$2.65	17%	50%	\$0.03	0.32	0.00	UNIDO Study on Industrial Energy Efficiency
Misc. Mfg	Motors	Compressed Air - Outside Air Intake	employee	Existing	0.00	20	\$0.00	17%	50%	\$0.00	0.00	0.00	Michigan Energy Measures Database

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Misc. Mfg	Motors	Compressed Air - Receiver Capacity Addition	employee	Existing	13.28	15	\$7.30	17%	50%	\$0.06	0.32	0.02	UNIDO Study on Industrial Energy Efficiency
Misc. Mfg	Motors	Material Handling - Variable Speed Drive	employee	Existing	219.10	10	\$81.00	25%	45%	\$0.05	3.05	0.09	7th Power Plan
Misc. Mfg	Motors	Motors - Green Rewind (<100 HP)	employee	Existing	4.99	10	\$2.25	10%	50%	\$0.06	0.69	0.03	7th Power Plan
Misc. Mfg	Motors	Motors - Green Rewind (100 HP+)	employee	Existing	2.84	10	\$0.80	6%	25%	\$0.04	0.19	0.00	7th Power Plan
Misc. Mfg	Motors	Switch from Belt Drive to Direct Drive	employee	Existing	43.58	12	\$9.88	16%	25%	\$0.03	1.46	0.01	2015-mdu-irp-report---volume-iii.pdf
Misc. Mfg	Motors	Motors - Synchronous Belts	employee	Existing	11.42	10	\$2.97	16%	36%	\$0.03	0.82	0.00	7th Power Plan
Misc. Mfg	Miscellaneous	Agriculture - Engine Block Timer	employee	Existing	361.31	3	\$4.46	0%	0%	\$0.00	0.00	0.01	Vermont TRM
Misc. Mfg	Motors	Agriculture - Live Stock Waterer	employee	Existing	305.18	10	\$169.82	0%	0%	\$0.07	0.00	0.17	Ontario Power TRM
Misc. Mfg	Process	Dairy - Milk Precoolers	employee	Existing	128.34	15	\$59.77	0%	0%	\$0.05	0.00	0.02	Ontario Power TRM
Misc. Mfg	Process	Clean Room: Change Filter Strategy	employee	Existing	39.71	15	\$0.29	0%	0%	\$0.00	0.00	0.01	7th Power Plan
Misc. Mfg	Process	Clean Room: Chiller Optimize	employee	Existing	38.23	15	\$3.54	0%	0%	\$0.01	0.00	0.06	7th Power Plan
Misc. Mfg	Process	Clean Room: Clean Room HVAC	employee	Existing	23.21	15	\$4.27	0%	0%	\$0.02	0.00	0.02	7th Power Plan
Misc. Mfg	Process	Elec Chip Fab: Solidstate Chiller	employee	Existing	23.10	15	\$13.42	0%	0%	\$0.06	0.00	0.00	7th Power Plan
Misc. Mfg	Process	Elec Chip Fab: Eliminate Exhaust	employee	Existing	4.96	15	\$1.05	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Misc. Mfg	Process	Elec Chip Fab: Exhaust Injector	employee	Existing	9.88	15	\$5.08	0%	0%	\$0.06	0.00	0.00	7th Power Plan
Misc. Mfg	Process	Elec Chip Fab: Reduce Gas Pressure	employee	Existing	9.93	15	\$0.10	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Misc. Mfg	Motors	Panel: Hydraulic Press	employee	Existing	332.83	10	\$80.95	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Misc. Mfg	Motors	Wood: Replace Pneumatic Conveyor	employee	Existing	367.75	10	\$6.06	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Misc. Mfg	Process	Metal: New Arc Furnace	employee	Existing	442.02	10	\$46.40	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Misc. Mfg	Process	Paper: Premium Control Large Material	employee	Existing	63.37	10	\$31.95	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Misc. Mfg	Process	Paper: Efficient Pulp Screen	employee	Existing	51.15	10	\$10.52	0%	0%	\$0.03	0.00	0.00	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Misc. Mfg	Process	Kraft: Effluent Treatment System	employee	Existing	51.15	10	\$4.31	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Misc. Mfg	Motors	Kraft: Efficient Agitator	employee	Existing	614.32	10	\$60.41	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Misc. Mfg	Process	Mech Pulp: Premium Process	employee	Existing	0.57	5	\$0.07	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Misc. Mfg	Motors	Mech Pulp: Refiner Plate Improvement	employee	Existing	5.09	1	\$0.23	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Misc. Mfg	Cooling	Transformer - High Efficiency	employee	Existing	44.70	10	\$28.51	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Misc. Mfg	Heating	Transformer - High Efficiency	employee	Existing	83.92	10	\$28.51	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Misc. Mfg	Ventilation	Transformer - High Efficiency	employee	Existing	4.60	10	\$28.51	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Misc. Mfg	Interior Lighting	Transformer - High Efficiency	employee	Existing	13.70	10	\$28.51	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Misc. Mfg	Exterior Lighting	Transformer - High Efficiency	employee	Existing	2.80	10	\$28.51	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Misc. Mfg	Motors	Transformer - High Efficiency	employee	Existing	41.24	10	\$28.51	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Misc. Mfg	Process	Transformer - High Efficiency	employee	Existing	25.38	10	\$28.51	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Misc. Mfg	Miscellaneous	Transformer - High Efficiency	employee	Existing	13.68	10	\$28.51	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Misc. Mfg	Cooling	Strategic Energy Management	employee	Existing	123.97	3	\$175.09	0%	5%	\$0.08	0.07	0.00	AEG Research
Misc. Mfg	Heating	Strategic Energy Management	employee	Existing	238.24	3	\$175.09	0%	5%	\$0.08	0.15	0.00	AEG Research
Misc. Mfg	Ventilation	Strategic Energy Management	employee	Existing	13.17	3	\$175.09	0%	5%	\$0.08	0.04	0.00	AEG Research
Misc. Mfg	Interior Lighting	Strategic Energy Management	employee	Existing	36.89	3	\$175.09	0%	5%	\$0.08	0.10	0.00	AEG Research
Misc. Mfg	Exterior Lighting	Strategic Energy Management	employee	Existing	8.03	3	\$175.09	0%	5%	\$0.08	0.02	0.00	AEG Research
Misc. Mfg	Motors	Strategic Energy Management	employee	Existing	117.98	3	\$175.09	0%	5%	\$0.08	0.38	0.00	AEG Research
Misc. Mfg	Process	Strategic Energy Management	employee	Existing	72.59	3	\$175.09	0%	5%	\$0.08	0.24	0.00	AEG Research

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Misc. Mfg	Miscellaneous	Strategic Energy Management	employee	Existing	39.07	3	\$175.09	0%	5%	\$0.08	0.17	0.00	AEG Research
Misc. Mfg	Interior Lighting	Commissioning	employee	Existing	42.52	3	\$144.44	0%	0%	\$0.14	0.00	0.00	AEG Research
Misc. Mfg	Exterior Lighting	Commissioning	employee	Existing	9.26	3	\$144.44	0%	0%	\$0.14	0.00	0.00	AEG Research
Misc. Mfg	Motors	Commissioning	employee	Existing	135.96	3	\$144.44	0%	0%	\$0.14	0.00	0.00	AEG Research
Misc. Mfg	Process	Commissioning	employee	Existing	83.65	3	\$144.44	0%	0%	\$0.14	0.00	0.00	AEG Research
Misc. Mfg	Miscellaneous	Commissioning	employee	Existing	45.02	3	\$144.44	0%	0%	\$0.14	0.00	0.00	AEG Research
Misc. Mfg	Interior Lighting	Retrocommissioning	employee	Existing	43.22	3	\$91.70	5%	39%	\$0.09	0.79	0.00	AEG Research
Misc. Mfg	Exterior Lighting	Retrocommissioning	employee	Existing	9.34	3	\$91.70	5%	39%	\$0.09	0.17	0.00	AEG Research
Misc. Mfg	Motors	Retrocommissioning	employee	Existing	137.46	3	\$91.70	5%	39%	\$0.09	3.05	0.00	AEG Research
Misc. Mfg	Process	Retrocommissioning	employee	Existing	84.60	3	\$91.70	5%	39%	\$0.09	1.94	0.01	AEG Research
Misc. Mfg	Miscellaneous	Retrocommissioning	employee	Existing	45.58	3	\$91.70	5%	39%	\$0.09	1.33	0.01	AEG Research
Misc. Mfg	Motors	Municipal Sewage Treatment	employee	Existing	16.64	12	\$9.69	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Misc. Mfg	Motors	Municipal Water Supply Treatment	employee	Existing	0.00	12	\$0.00	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Misc. Mfg	Cooling	Insulation - Ceiling	sqft	New	0.11	45	\$1.28	15%	25%	\$0.15	0.04	0.00	Building Energy Simulation Tool
Misc. Mfg	Heating	Insulation - Ceiling	sqft	New	0.51	45	\$1.28	15%	25%	\$0.15	0.21	0.00	Building Energy Simulation Tool
Misc. Mfg	Ventilation	Insulation - Ceiling	sqft	New	0.01	45	\$1.28	15%	25%	\$0.15	0.02	0.00	Building Energy Simulation Tool
Misc. Mfg	Cooling	Insulation - Ducting	sqft	New	0.04	20	\$0.84	15%	25%	\$1.09	0.02	0.00	Building Energy Simulation Tool
Misc. Mfg	Heating	Insulation - Ducting	sqft	New	0.02	20	\$0.84	15%	25%	\$1.09	0.01	0.00	Building Energy Simulation Tool
Misc. Mfg	Ventilation	Insulation - Ducting	sqft	New	0.00	20	\$0.84	15%	25%	\$1.09	0.00	0.00	Building Energy Simulation Tool
Misc. Mfg	Cooling	Insulation - Wall Cavity	sqft	New	0.00	45	\$0.15	45%	50%	\$0.02	0.00	0.07	Building Energy Simulation Tool
Misc. Mfg	Heating	Insulation - Wall Cavity	sqft	New	0.71	45	\$0.15	45%	50%	\$0.02	0.14	0.33	Building Energy Simulation Tool
Misc. Mfg	Ventilation	Insulation - Wall Cavity	sqft	New	0.01	45	\$0.15	45%	50%	\$0.02	0.02	0.05	Building Energy Simulation Tool

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Misc. Mfg	Cooling	HVAC - Duct Repair and Sealing	sqft	New	0.01	18	\$0.00	15%	25%	\$0.00	0.01	0.03	Building Energy Simulation Tool
Misc. Mfg	Heating	HVAC - Duct Repair and Sealing	sqft	New	0.05	18	\$0.00	15%	25%	\$0.00	0.02	0.01	Building Energy Simulation Tool
Misc. Mfg	Ventilation	HVAC - Duct Repair and Sealing	sqft	New	0.00	18	\$0.00	15%	25%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Misc. Mfg	Cooling	Chiller - Chilled Water Reset	sqft	New	0.04	10	\$0.01	15%	45%	\$0.03	0.01	0.00	AEG-BEST
Misc. Mfg	Cooling	Chiller - Chilled Water Variable-Flow System	sqft	New	0.19	15	\$0.50	15%	60%	\$0.25	0.08	0.24	AEG-BEST
Misc. Mfg	Cooling	Chiller - Variable Speed Fans	sqft	New	0.07	15	\$0.03	15%	75%	\$0.04	0.04	0.04	New Jersey TRM
Misc. Mfg	Cooling	HVAC - Economizer	sqft	New	0.01	10	\$0.25	18%	30%	\$2.71	0.03	0.01	AEG-BEST
Misc. Mfg	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.25	15%	35%	\$12.02	0.00	0.03	7th Power Plan
Misc. Mfg	Cooling	Destratification Fans (HVLS)	sqft	New	0.14	15	\$0.63	15%	50%	\$0.05	0.10	0.01	AEG Research
Misc. Mfg	Heating	Destratification Fans (HVLS)	sqft	New	1.30	15	\$0.63	15%	50%	\$0.05	0.99	0.03	AEG Research
Misc. Mfg	Cooling	RTU - Maintenance	sqft	New	0.08	3	\$0.07	15%	75%	\$0.27	0.02	0.25	AEG Research
Misc. Mfg	Cooling	Thermostat - WiFi/Interactive	sqft	New	0.26	5	\$0.66	5%	15%	\$0.09	0.01	0.12	7th Power Plan
Misc. Mfg	Heating	Thermostat - WiFi/Interactive	sqft	New	1.21	5	\$0.66	5%	15%	\$0.09	0.06	0.13	7th Power Plan
Misc. Mfg	Ventilation	Thermostat - WiFi/Interactive	sqft	New	0.02	5	\$0.66	5%	15%	\$0.09	0.01	0.02	7th Power Plan
Misc. Mfg	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.01	15	\$0.35	22%	41%	\$1.98	0.70	0.35	7th Power Plan
Misc. Mfg	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.02	15	\$0.58	22%	41%	\$2.33	0.95	3.14	7th Power Plan
Misc. Mfg	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	New	0.02	15	\$0.00	1%	2%	\$0.01	0.00	0.27	7th Power Plan
Misc. Mfg	Interior Lighting	Interior Lighting - Timeclocks and Timers	sqft	New	0.00	8	\$0.00	7%	7%	\$0.00	0.00	0.17	SCP Tool Occupancy Hour Reductions.xlsx
Misc. Mfg	Interior Lighting	Interior Lighting - Skylights	sqft	New	0.00	15	\$1.01	18%	24%	\$0.00	0.00	0.78	AEG Research
Misc. Mfg	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	sqft	New	0.03	16	\$1.81	5%	40%	\$3.94	0.05	0.13	7th Power Plan

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Misc. Mfg	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	New	0.03	11	\$0.00	15%	50%	\$0.01	0.05	1.62	Illinois TRM
Misc. Mfg	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	sqft	New	0.04	8	\$0.03	15%	25%	\$0.08	0.04	2.21	7th Power Plan
Misc. Mfg	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	New	0.02	8	\$0.02	44%	60%	\$0.08	0.04	0.01	Pacific Gas and Electric Research
Misc. Mfg	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	New	0.02	7	\$1.19	15%	30%	\$4.40	0.04	0.00	AEG Research
Misc. Mfg	Process	Process - Conductivity Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Misc. Mfg	Process	Process - Timers and Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.31	N/A
Misc. Mfg	Motors	Process - Timers and Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.31	N/A
Misc. Mfg	Process	Refrigeration - Floating Head Pressure	employee	New	19.30	15	\$13.28	20%	50%	\$0.07	0.05	0.40	RTF Workbook
Misc. Mfg	Process	Refrigeration - System Optimization	employee	New	30.95	15	\$4.64	20%	50%	\$0.02	0.09	0.57	AEG Research
Misc. Mfg	Motors	Pumping System - Equipment Upgrade	employee	New	133.42	10	\$19.28	9%	38%	\$0.05	0.28	0.38	7th Power Plan
Misc. Mfg	Motors	Pumping System - System Optimization	employee	New	99.27	12	\$29.39	9%	38%	\$0.04	0.31	0.00	UNIDO Study on Industrial Energy Efficiency
Misc. Mfg	Motors	Pumping System - Variable Speed Drive	employee	New	98.53	10	\$30.57	9%	38%	\$0.04	0.28	0.00	UNIDO Study on Industrial Energy Efficiency
Misc. Mfg	Motors	Fan System - Equipment Upgrade	employee	New	48.84	10	\$4.82	9%	38%	\$0.04	0.14	0.00	UNIDO Study on Industrial Energy Efficiency
Misc. Mfg	Motors	Fan System - Flow Optimization	employee	New	57.62	10	\$7.98	9%	38%	\$0.02	0.16	0.00	UNIDO Study on Industrial Energy Efficiency
Misc. Mfg	Motors	Fan System - Variable Speed Drive	employee	New	85.98	10	\$40.14	9%	38%	\$0.06	0.25	0.00	UNIDO Study on Industrial Energy Efficiency
Misc. Mfg	Motors	Compressed Air - Equipment Upgrade	employee	New	166.36	10	\$12.11	17%	50%	\$0.04	0.41	15.54	7th Power Plan
Misc. Mfg	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	New	0.00	15	\$0.00	16%	38%	\$0.00	0.00	11.14	Michigan Energy Measures Database
Misc. Mfg	Motors	Compressed Air - Refrigerated Cycling Dryers	employee	New	0.00	10	\$0.00	16%	30%	\$0.00	0.00	11.05	Michigan Energy Measures Database

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Misc. Mfg	Motors	Compressed Air - System Controls	employee	New	36.96	10	\$8.66	9%	38%	\$0.03	0.08	20.80	UNIDO Study on Industrial Energy Efficiency
Misc. Mfg	Motors	Compressed Air - Leak Management Program	employee	New	94.45	10	\$8.70	18%	75%	\$0.04	0.40	24.35	7th Power Plan
Misc. Mfg	Motors	Compressed Air - Variable Speed Drive	employee	New	68.36	15	\$53.07	26%	45%	\$0.08	0.12	35.96	UNIDO Study on Industrial Energy Efficiency
Misc. Mfg	Motors	Compressed Air - Low Pressure-Drop Filters	employee	New	2.28	10	\$0.82	17%	50%	\$0.05	0.01	1.70	Illinois TRM
Misc. Mfg	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	New	13.92	10	\$2.65	17%	50%	\$0.03	0.03	0.00	UNIDO Study on Industrial Energy Efficiency
Misc. Mfg	Motors	Compressed Air - Outside Air Intake	employee	New	0.00	20	\$0.00	17%	50%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Misc. Mfg	Motors	Compressed Air - Receiver Capacity Addition	employee	New	13.82	15	\$7.30	17%	50%	\$0.06	0.04	0.32	UNIDO Study on Industrial Energy Efficiency
Misc. Mfg	Motors	Material Handling - Variable Speed Drive	employee	New	229.10	10	\$81.00	25%	45%	\$0.05	0.46	1.66	7th Power Plan
Misc. Mfg	Motors	Motors - Green Rewind (<100 HP)	employee	New	5.26	10	\$2.25	10%	50%	\$0.06	0.11	0.40	7th Power Plan
Misc. Mfg	Motors	Motors - Green Rewind (100 HP+)	employee	New	2.96	10	\$0.80	6%	25%	\$0.04	0.03	0.02	7th Power Plan
Misc. Mfg	Motors	Switch from Belt Drive to Direct Drive	employee	New	44.87	12	\$9.88	16%	25%	\$0.03	0.24	0.14	2015-mdu-irp-report---volume-iii.pdf
Misc. Mfg	Motors	Motors - Synchronous Belts	employee	New	11.86	10	\$2.97	16%	36%	\$0.03	0.09	0.00	7th Power Plan
Misc. Mfg	Miscellaneous	Agriculture - Engine Block Timer	employee	New	361.31	3	\$4.46	0%	0%	\$0.00	0.00	0.14	Vermont TRM
Misc. Mfg	Motors	Agriculture - Live Stock Waterer	employee	New	323.17	10	\$169.82	0%	0%	\$0.07	0.00	2.27	Ontario Power TRM
Misc. Mfg	Process	Dairy - Milk Precoolers	employee	New	128.68	15	\$59.77	0%	0%	\$0.05	0.00	3.53	Ontario Power TRM
Misc. Mfg	Process	Clean Room: Change Filter Strategy	employee	New	39.71	15	\$0.29	0%	0%	\$0.00	0.00	0.94	7th Power Plan
Misc. Mfg	Process	Clean Room: Chiller Optimize	employee	New	38.23	15	\$3.54	0%	0%	\$0.01	0.00	7.13	7th Power Plan
Misc. Mfg	Process	Clean Room: Clean Room HVAC	employee	New	23.16	15	\$4.27	0%	0%	\$0.02	0.00	4.10	7th Power Plan
Misc. Mfg	Process	Elec Chip Fab: Solidstate Chiller	employee	New	23.16	15	\$13.42	0%	0%	\$0.06	0.00	0.00	7th Power Plan
Misc. Mfg	Process	Elec Chip Fab: Eliminate Exhaust	employee	New	4.95	15	\$1.05	0%	0%	\$0.02	0.00	0.00	7th Power Plan

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Misc. Mfg	Process	Elec Chip Fab: Exhaust Injector	employee	New	9.91	15	\$5.08	0%	0%	\$0.06	0.00	0.00	7th Power Plan
Misc. Mfg	Process	Elec Chip Fab: Reduce Gas Pressure	employee	New	9.93	15	\$0.10	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Misc. Mfg	Motors	Panel: Hydraulic Press	employee	New	344.63	10	\$80.95	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Misc. Mfg	Motors	Wood: Replace Pneumatic Conveyor	employee	New	367.75	10	\$6.06	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Misc. Mfg	Process	Metal: New Arc Furnace	employee	New	441.09	10	\$46.40	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Misc. Mfg	Process	Paper: Premium Control Large Material	employee	New	63.64	10	\$31.95	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Misc. Mfg	Process	Paper: Efficient Pulp Screen	employee	New	51.04	10	\$10.52	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Misc. Mfg	Process	Kraft: Effluent Treatment System	employee	New	51.04	10	\$4.31	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Misc. Mfg	Motors	Kraft: Efficient Agitator	employee	New	625.94	10	\$60.41	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Misc. Mfg	Process	Mech Pulp: Premium Process	employee	New	0.57	5	\$0.07	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Misc. Mfg	Motors	Mech Pulp: Refiner Plate Improvement	employee	New	5.39	1	\$0.23	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Misc. Mfg	Cooling	Transformer - High Efficiency	employee	New	39.99	10	\$27.36	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Misc. Mfg	Heating	Transformer - High Efficiency	employee	New	83.61	10	\$27.36	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Misc. Mfg	Ventilation	Transformer - High Efficiency	employee	New	2.76	10	\$27.36	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Misc. Mfg	Interior Lighting	Transformer - High Efficiency	employee	New	10.95	10	\$27.36	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Misc. Mfg	Exterior Lighting	Transformer - High Efficiency	employee	New	2.18	10	\$27.36	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Misc. Mfg	Motors	Transformer - High Efficiency	employee	New	43.67	10	\$27.36	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Misc. Mfg	Process	Transformer - High Efficiency	employee	New	25.49	10	\$27.36	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Misc. Mfg	Miscellaneous	Transformer - High Efficiency	employee	New	12.95	10	\$27.36	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Misc. Mfg	Cooling	Strategic Energy Management	employee	New	114.14	3	\$168.03	0%	5%	\$0.08	0.00	0.00	AEG Research
Misc. Mfg	Heating	Strategic Energy Management	employee	New	240.28	3	\$168.03	0%	5%	\$0.08	0.00	0.00	AEG Research

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Misc. Mfg	Ventilation	Strategic Energy Management	employee	New	7.94	3	\$168.03	0%	5%	\$0.08	0.00	0.00	AEG Research
Misc. Mfg	Interior Lighting	Strategic Energy Management	employee	New	29.48	3	\$168.03	0%	5%	\$0.08	0.00	0.00	AEG Research
Misc. Mfg	Exterior Lighting	Strategic Energy Management	employee	New	6.31	3	\$168.03	0%	5%	\$0.08	0.00	0.00	AEG Research
Misc. Mfg	Motors	Strategic Energy Management	employee	New	126.16	3	\$168.03	0%	5%	\$0.08	0.01	0.00	AEG Research
Misc. Mfg	Process	Strategic Energy Management	employee	New	73.63	3	\$168.03	0%	5%	\$0.08	0.00	0.03	AEG Research
Misc. Mfg	Miscellaneous	Strategic Energy Management	employee	New	37.42	3	\$168.03	0%	5%	\$0.08	0.00	0.06	AEG Research
Misc. Mfg	Interior Lighting	Commissioning	employee	New	34.00	3	\$146.37	5%	39%	\$0.14	0.01	0.02	AEG Research
Misc. Mfg	Exterior Lighting	Commissioning	employee	New	7.28	3	\$146.37	5%	39%	\$0.14	0.00	0.07	AEG Research
Misc. Mfg	Motors	Commissioning	employee	New	145.54	3	\$146.37	5%	39%	\$0.14	0.04	0.01	AEG Research
Misc. Mfg	Process	Commissioning	employee	New	84.94	3	\$146.37	5%	39%	\$0.14	0.02	1.92	AEG Research
Misc. Mfg	Miscellaneous	Commissioning	employee	New	43.17	3	\$146.37	5%	39%	\$0.14	0.01	0.11	AEG Research
Misc. Mfg	Interior Lighting	Retrocommissioning	employee	New	34.12	3	\$92.92	0%	0%	\$0.09	0.00	0.10	AEG Research
Misc. Mfg	Exterior Lighting	Retrocommissioning	employee	New	7.28	3	\$92.92	0%	0%	\$0.09	0.00	0.00	AEG Research
Misc. Mfg	Motors	Retrocommissioning	employee	New	145.57	3	\$92.92	0%	0%	\$0.09	0.00	0.00	AEG Research
Misc. Mfg	Process	Retrocommissioning	employee	New	84.96	3	\$92.92	0%	0%	\$0.09	0.00	0.00	AEG Research
Misc. Mfg	Miscellaneous	Retrocommissioning	employee	New	43.18	3	\$92.92	0%	0%	\$0.09	0.00	0.00	AEG Research
Misc. Mfg	Motors	Municipal Sewage Treatment	employee	New	17.55	12	\$9.69	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Misc. Mfg	Motors	Municipal Water Supply Treatment	employee	New	0.00	12	\$0.00	0%	0%	\$0.00	0.00	0.53	7th Power Plan

Idaho Industrial Measures Assumptions

Table H-12 Comparison of 7th Plan and RTF Industrial Measures in Idaho

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Agriculture	Cooling	Air-Cooled Chiller	1 kBTU/hr	Existing	21.33	20	\$26.36	3%	at stock turnover	\$0.12	10.59	10.59	Annual Energy Outlook, 2015
Agriculture	Cooling	Water-Cooled Chiller	1 kBTU/hr	Existing	31.29	25	\$12.65	3%	at stock turnover	\$0.04	15.54	15.54	Annual Energy Outlook, 2015
Agriculture	Cooling	RTU	1 kBTU/hr	Existing	3.24	15	\$6.75	11%	at stock turnover	\$0.23	8.16	8.16	Annual Energy Outlook, 2015
Agriculture	Cooling	Air-Source Heat Pump	1 kBTU/hr	Existing	6.23	15	\$21.65	3%	at stock turnover	\$0.16	2.94	2.94	Annual Energy Outlook, 2015
Agriculture	Heating	Air-Source Heat Pump	1 kBTU/hr	Existing	8.59	15	\$21.65	3%	at stock turnover	\$0.16	4.05	4.05	Annual Energy Outlook, 2015
Agriculture	Cooling	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Agriculture	Heating	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Agriculture	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	3%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Agriculture	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	15%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Agriculture	Ventilation	Ventilation	1000 CFM	Existing	2,269.39	20	\$1,219.71	100%	at stock turnover	\$0.05	74.94	74.94	AEG-BEST
Agriculture	Interior Lighting	Screw-in	lamps	Existing	37.14	8	\$4.05	100%	at stock turnover	-\$0.67	27.20	51.44	7th Power Plan
Agriculture	Interior Lighting	High-Bay Fixtures	lamps	Existing	378.07	15	\$127.03	100%	at stock turnover	\$0.04	691.91	636.98	Annual Energy Outlook, 2015
Agriculture	Interior Lighting	Linear Lighting	lamps	Existing	55.29	17	\$54.19	100%	at stock turnover	-\$1.77	132.48	126.09	7th Power Plan
Agriculture	Exterior Lighting	Screw-in	lamps	Existing	37.14	8	\$4.05	100%	at stock turnover	-\$0.19	8.32	15.74	7th Power Plan
Agriculture	Exterior Lighting	Area Lighting	lamps	Existing	593.44	15	\$45.69	100%	at stock turnover	-\$0.49	179.92	170.43	Annual Energy Outlook, 2015
Agriculture	Exterior Lighting	Linear Lighting	lamps	Existing	55.29	17	\$54.19	100%	at stock turnover	-\$0.41	35.80	34.08	7th Power Plan
Agriculture	Motors	Pumps	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Agriculture	Motors	Fans & Blowers	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Agriculture	Motors	Compressed Air	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Agriculture	Motors	Material Handling	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Agriculture	Motors	Other Motors	1 unit	Existing	0.00	10	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	N/A
Agriculture	Process	Process Heating	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Agriculture	Process	Process Cooling	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Agriculture	Process	Process Refrigeration	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Agriculture	Process	Process Electrochemical	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Agriculture	Process	Process Other	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Agriculture	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Agriculture	Cooling	Air-Cooled Chiller	1 kBTU/hr	New	18.35	20	\$26.36	3%	at stock turnover	\$0.14	7.38	7.38	Annual Energy Outlook, 2015
Agriculture	Cooling	Water-Cooled Chiller	1 kBTU/hr	New	27.23	25	\$12.65	3%	at stock turnover	\$0.04	8.77	8.77	Annual Energy Outlook, 2015
Agriculture	Cooling	RTU	1 kBTU/hr	New	3.15	15	\$6.75	11%	at stock turnover	\$0.24	5.10	5.10	Annual Energy Outlook, 2015
Agriculture	Cooling	Air-Source Heat Pump	1 kBTU/hr	New	6.06	15	\$21.65	3%	at stock turnover	\$0.17	1.89	1.89	Annual Energy Outlook, 2015
Agriculture	Heating	Air-Source Heat Pump	1 kBTU/hr	New	8.24	15	\$21.65	3%	at stock turnover	\$0.17	2.57	2.57	Annual Energy Outlook, 2015
Agriculture	Cooling	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Agriculture	Heating	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Agriculture	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	3%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Agriculture	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	15%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Agriculture	Ventilation	Ventilation	1000 CFM	New	1,964.09	20	\$1,219.71	100%	at stock turnover	\$0.06	41.27	41.27	AEG-BEST
Agriculture	Interior Lighting	Screw-in	lamps	New	37.18	8	\$4.05	100%	at stock turnover	-\$0.67	16.33	20.30	7th Power Plan
Agriculture	Interior Lighting	High-Bay Fixtures	lamps	New	378.61	15	\$127.03	100%	at stock turnover	\$0.04	449.27	419.88	Annual Energy Outlook, 2015
Agriculture	Interior Lighting	Linear Lighting	lamps	New	55.29	17	\$54.19	100%	at stock turnover	-\$1.77	75.78	72.59	7th Power Plan
Agriculture	Exterior Lighting	Screw-in	lamps	New	37.18	8	\$4.05	100%	at stock turnover	-\$0.19	5.00	6.21	7th Power Plan
Agriculture	Exterior Lighting	Area Lighting	lamps	New	593.44	15	\$45.69	100%	at stock turnover	-\$0.49	116.37	111.29	Annual Energy Outlook, 2015
Agriculture	Exterior Lighting	Linear Lighting	lamps	New	55.29	17	\$54.19	100%	at stock turnover	-\$0.41	20.48	19.62	7th Power Plan
Agriculture	Motors	Pumps	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Agriculture	Motors	Fans & Blowers	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Agriculture	Motors	Compressed Air	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Agriculture	Motors	Material Handling	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Agriculture	Motors	Other Motors	1 unit	New	0.00	10	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	N/A
Agriculture	Process	Process Heating	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Agriculture	Process	Process Cooling	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Agriculture	Process	Process Refrigeration	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Agriculture	Process	Process Electrochemical	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Agriculture	Process	Process Other	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Agriculture	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Mining and Extraction	Cooling	Air-Cooled Chiller	1 kBTU/hr	Existing	21.33	20	\$26.36	3%	at stock turnover	\$0.12	1.74	1.74	Annual Energy Outlook, 2015

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Mining and Extraction	Cooling	Water-Cooled Chiller	1 kBTU/hr	Existing	31.29	25	\$12.65	3%	at stock turnover	\$0.04	2.55	2.55	Annual Energy Outlook, 2015
Mining and Extraction	Cooling	RTU	1 kBTU/hr	Existing	3.24	15	\$6.75	11%	at stock turnover	\$0.23	1.34	1.34	Annual Energy Outlook, 2015
Mining and Extraction	Cooling	Air-Source Heat Pump	1 kBTU/hr	Existing	6.23	15	\$21.65	3%	at stock turnover	\$0.16	0.48	0.48	Annual Energy Outlook, 2015
Mining and Extraction	Heating	Air-Source Heat Pump	1 kBTU/hr	Existing	8.59	15	\$21.65	3%	at stock turnover	\$0.16	0.66	0.66	Annual Energy Outlook, 2015
Mining and Extraction	Cooling	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Mining and Extraction	Heating	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Mining and Extraction	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	3%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Mining and Extraction	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	15%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Mining and Extraction	Ventilation	Ventilation	1000 CFM	Existing	2,269.39	20	\$1,219.71	100%	at stock turnover	\$0.05	12.28	12.28	AEG-BEST
Mining and Extraction	Interior Lighting	Screw-in	lamps	Existing	36.23	8	\$4.05	100%	at stock turnover	-\$2.12	6.79	12.83	7th Power Plan
Mining and Extraction	Interior Lighting	High-Bay Fixtures	lamps	Existing	191.34	15	\$127.03	100%	at stock turnover	\$0.07	172.65	158.94	Annual Energy Outlook, 2015
Mining and Extraction	Interior Lighting	Linear Lighting	lamps	Existing	28.60	17	\$54.19	100%	at stock turnover	-\$20.48	33.06	31.46	7th Power Plan
Mining and Extraction	Exterior Lighting	Screw-in	lamps	Existing	206.91	8	\$4.05	100%	at stock turnover	-\$0.02	2.08	3.93	7th Power Plan
Mining and Extraction	Exterior Lighting	Area Lighting	lamps	Existing	2,507.81	15	\$45.69	100%	at stock turnover	-\$0.08	44.89	42.53	Annual Energy Outlook, 2015
Mining and Extraction	Exterior Lighting	Linear Lighting	lamps	Existing	196.34	17	\$54.19	100%	at stock turnover	-\$0.09	8.93	8.50	7th Power Plan
Mining and Extraction	Motors	Pumps	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Mining and Extraction	Motors	Fans & Blowers	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Mining and Extraction	Motors	Compressed Air	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Mining and Extraction	Motors	Material Handling	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Mining and Extraction	Motors	Other Motors	1 unit	Existing	0.00	10	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	N/A
Mining and Extraction	Process	Process Heating	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Mining and Extraction	Process	Process Cooling	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Mining and Extraction	Process	Process Refrigeration	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Mining and Extraction	Process	Process Electrochemical	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Mining and Extraction	Process	Process Other	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Mining and Extraction	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Mining and Extraction	Cooling	Air-Cooled Chiller	1 kBTU/hr	New	18.35	20	\$26.36	3%	at stock turnover	\$0.14	1.21	1.21	Annual Energy Outlook, 2015
Mining and Extraction	Cooling	Water-Cooled Chiller	1 kBTU/hr	New	27.23	25	\$12.65	3%	at stock turnover	\$0.04	1.44	1.44	Annual Energy Outlook, 2015
Mining and Extraction	Cooling	RTU	1 kBTU/hr	New	3.15	15	\$6.75	11%	at stock turnover	\$0.24	0.84	0.84	Annual Energy Outlook, 2015
Mining and Extraction	Cooling	Air-Source Heat Pump	1 kBTU/hr	New	6.06	15	\$21.65	3%	at stock turnover	\$0.17	0.31	0.31	Annual Energy Outlook, 2015
Mining and Extraction	Heating	Air-Source Heat Pump	1 kBTU/hr	New	8.24	15	\$21.65	3%	at stock turnover	\$0.17	0.42	0.42	Annual Energy Outlook, 2015
Mining and Extraction	Cooling	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Mining and Extraction	Heating	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Mining and Extraction	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	3%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Mining and Extraction	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	15%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Mining and Extraction	Ventilation	Ventilation	1000 CFM	New	1,964.09	20	\$1,219.71	100%	at stock turnover	\$0.06	6.76	6.76	AEG-BEST
Mining and Extraction	Interior Lighting	Screw-in	lamps	New	36.27	8	\$4.05	100%	at stock turnover	-\$2.11	4.07	5.07	7th Power Plan
Mining and Extraction	Interior Lighting	High-Bay Fixtures	lamps	New	191.61	15	\$127.03	100%	at stock turnover	\$0.07	112.10	104.77	Annual Energy Outlook, 2015

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Mining and Extraction	Interior Lighting	Linear Lighting	lamps	New	28.60	17	\$54.19	100%	at stock turnover	-\$20.48	18.91	18.11	7th Power Plan
Mining and Extraction	Exterior Lighting	Screw-in	lamps	New	207.12	8	\$4.05	100%	at stock turnover	-\$0.02	1.25	1.55	7th Power Plan
Mining and Extraction	Exterior Lighting	Area Lighting	lamps	New	2,507.81	15	\$45.69	100%	at stock turnover	-\$0.08	29.04	27.77	Annual Energy Outlook, 2015
Mining and Extraction	Exterior Lighting	Linear Lighting	lamps	New	196.34	17	\$54.19	100%	at stock turnover	-\$0.09	5.11	4.89	7th Power Plan
Mining and Extraction	Motors	Pumps	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Mining and Extraction	Motors	Fans & Blowers	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Mining and Extraction	Motors	Compressed Air	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Mining and Extraction	Motors	Material Handling	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Mining and Extraction	Motors	Other Motors	1 unit	New	0.00	10	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	N/A
Mining and Extraction	Process	Process Heating	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Mining and Extraction	Process	Process Cooling	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Mining and Extraction	Process	Process Refrigeration	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Mining and Extraction	Process	Process Electrochemical	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Mining and Extraction	Process	Process Other	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Mining and Extraction	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Food Mfg	Cooling	Air-Cooled Chiller	1 kBTU/hr	Existing	21.33	20	\$26.36	3%	at stock turnover	\$0.12	22.30	22.30	Annual Energy Outlook, 2015
Food Mfg	Cooling	Water-Cooled Chiller	1 kBTU/hr	Existing	31.29	25	\$12.65	3%	at stock turnover	\$0.04	32.71	32.71	Annual Energy Outlook, 2015
Food Mfg	Cooling	RTU	1 kBTU/hr	Existing	3.24	15	\$6.75	11%	at stock turnover	\$0.23	17.18	17.18	Annual Energy Outlook, 2015
Food Mfg	Cooling	Air-Source Heat Pump	1 kBTU/hr	Existing	6.23	15	\$21.65	3%	at stock turnover	\$0.16	6.19	6.19	Annual Energy Outlook, 2015

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Food Mfg	Heating	Air-Source Heat Pump	1 kBtu/hr	Existing	8.59	15	\$21.65	3%	at stock turnover	\$0.16	8.53	8.53	Annual Energy Outlook, 2015
Food Mfg	Cooling	Geothermal Heat Pump	1 kBtu/hr	Existing	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Food Mfg	Heating	Geothermal Heat Pump	1 kBtu/hr	Existing	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Food Mfg	Heating	Electric Furnace	1 kBtu/hr	Existing	0.00	18	\$0.00	3%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Food Mfg	Heating	Electric Room Heat	3.5 kBtu/hr	Existing	0.00	18	\$0.00	15%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Food Mfg	Ventilation	Ventilation	1000 CFM	Existing	2,269.39	20	\$1,219.71	100%	at stock turnover	\$0.05	157.77	157.77	AEG-BEST
Food Mfg	Interior Lighting	Screw-in	lamps	Existing	36.23	8	\$4.05	100%	at stock turnover	-\$1.55	57.25	108.29	7th Power Plan
Food Mfg	Interior Lighting	High-Bay Fixtures	lamps	Existing	191.34	15	\$127.03	100%	at stock turnover	\$0.07	1,456.65	1,341.01	Annual Energy Outlook, 2015
Food Mfg	Interior Lighting	Linear Lighting	lamps	Existing	28.60	17	\$54.19	100%	at stock turnover	-\$14.96	278.90	265.46	7th Power Plan
Food Mfg	Exterior Lighting	Screw-in	lamps	Existing	206.91	8	\$4.05	100%	at stock turnover	-\$0.01	17.52	33.14	7th Power Plan
Food Mfg	Exterior Lighting	Area Lighting	lamps	Existing	2,507.81	15	\$45.69	100%	at stock turnover	-\$0.06	378.78	358.80	Annual Energy Outlook, 2015
Food Mfg	Exterior Lighting	Linear Lighting	lamps	Existing	196.34	17	\$54.19	100%	at stock turnover	-\$0.06	75.37	71.74	7th Power Plan
Food Mfg	Motors	Pumps	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Food Mfg	Motors	Fans & Blowers	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Food Mfg	Motors	Compressed Air	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Food Mfg	Motors	Material Handling	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Food Mfg	Motors	Other Motors	1 unit	Existing	0.00	10	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	N/A
Food Mfg	Process	Process Heating	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Food Mfg	Process	Process Cooling	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Food Mfg	Process	Process Refrigeration	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Food Mfg	Process	Process Electrochemical	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Food Mfg	Process	Process Other	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Food Mfg	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Food Mfg	Cooling	Air-Cooled Chiller	1 kBTU/hr	New	18.35	20	\$26.36	3%	at stock turnover	\$0.14	15.54	15.54	Annual Energy Outlook, 2015
Food Mfg	Cooling	Water-Cooled Chiller	1 kBTU/hr	New	27.23	25	\$12.65	3%	at stock turnover	\$0.04	18.46	18.46	Annual Energy Outlook, 2015
Food Mfg	Cooling	RTU	1 kBTU/hr	New	3.15	15	\$6.75	11%	at stock turnover	\$0.24	10.74	10.74	Annual Energy Outlook, 2015
Food Mfg	Cooling	Air-Source Heat Pump	1 kBTU/hr	New	6.06	15	\$21.65	3%	at stock turnover	\$0.17	3.97	3.97	Annual Energy Outlook, 2015
Food Mfg	Heating	Air-Source Heat Pump	1 kBTU/hr	New	8.24	15	\$21.65	3%	at stock turnover	\$0.17	5.41	5.41	Annual Energy Outlook, 2015
Food Mfg	Cooling	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Food Mfg	Heating	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Food Mfg	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	3%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Food Mfg	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	15%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Food Mfg	Ventilation	Ventilation	1000 CFM	New	1,964.09	20	\$1,219.71	100%	at stock turnover	\$0.06	86.89	86.89	AEG-BEST
Food Mfg	Interior Lighting	Screw-in	lamps	New	36.27	8	\$4.05	100%	at stock turnover	-\$1.54	34.38	42.74	7th Power Plan
Food Mfg	Interior Lighting	High-Bay Fixtures	lamps	New	191.61	15	\$127.03	100%	at stock turnover	\$0.07	945.82	883.96	Annual Energy Outlook, 2015
Food Mfg	Interior Lighting	Linear Lighting	lamps	New	28.60	17	\$54.19	100%	at stock turnover	-\$14.96	159.54	152.81	7th Power Plan
Food Mfg	Exterior Lighting	Screw-in	lamps	New	207.12	8	\$4.05	100%	at stock turnover	-\$0.01	10.52	13.08	7th Power Plan
Food Mfg	Exterior Lighting	Area Lighting	lamps	New	2,507.81	15	\$45.69	100%	at stock turnover	-\$0.06	244.99	234.30	Annual Energy Outlook, 2015

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Food Mfg	Exterior Lighting	Linear Lighting	lamps	New	196.34	17	\$54.19	100%	at stock turnover	-\$0.06	43.12	41.30	7th Power Plan
Food Mfg	Motors	Pumps	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Food Mfg	Motors	Fans & Blowers	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Food Mfg	Motors	Compressed Air	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Food Mfg	Motors	Material Handling	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Food Mfg	Motors	Other Motors	1 unit	New	0.00	10	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	N/A
Food Mfg	Process	Process Heating	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Food Mfg	Process	Process Cooling	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Food Mfg	Process	Process Refrigeration	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Food Mfg	Process	Process Electrochemical	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Food Mfg	Process	Process Other	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Food Mfg	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Paper Mfg	Cooling	Air-Cooled Chiller	1 kBTU/hr	Existing	21.33	20	\$26.36	3%	at stock turnover	\$0.12	0.01	0.01	Annual Energy Outlook, 2015
Paper Mfg	Cooling	Water-Cooled Chiller	1 kBTU/hr	Existing	31.29	25	\$12.65	3%	at stock turnover	\$0.04	0.01	0.01	Annual Energy Outlook, 2015
Paper Mfg	Cooling	RTU	1 kBTU/hr	Existing	3.24	15	\$6.75	11%	at stock turnover	\$0.23	0.00	0.00	Annual Energy Outlook, 2015
Paper Mfg	Cooling	Air-Source Heat Pump	1 kBTU/hr	Existing	6.23	15	\$21.65	3%	at stock turnover	\$0.16	0.00	0.00	Annual Energy Outlook, 2015
Paper Mfg	Heating	Air-Source Heat Pump	1 kBTU/hr	Existing	8.59	15	\$21.65	3%	at stock turnover	\$0.16	0.00	0.00	Annual Energy Outlook, 2015
Paper Mfg	Cooling	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Paper Mfg	Heating	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Paper Mfg	Heating	Electric Furnace	1 kBtu/hr	Existing	0.00	18	\$0.00	3%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Paper Mfg	Heating	Electric Room Heat	3.5 kBtu/hr	Existing	0.00	18	\$0.00	15%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Paper Mfg	Ventilation	Ventilation	1000 CFM	Existing	2,269.39	20	\$1,219.71	100%	at stock turnover	\$0.05	0.04	0.04	AEG-BEST
Paper Mfg	Interior Lighting	Screw-in	lamps	Existing	36.23	8	\$4.05	100%	at stock turnover	-\$0.08	0.01	0.03	7th Power Plan
Paper Mfg	Interior Lighting	High-Bay Fixtures	lamps	Existing	191.34	15	\$127.03	100%	at stock turnover	\$0.07	0.38	0.35	Annual Energy Outlook, 2015
Paper Mfg	Interior Lighting	Linear Lighting	lamps	Existing	28.60	17	\$54.19	100%	at stock turnover	-\$0.82	0.07	0.07	7th Power Plan
Paper Mfg	Exterior Lighting	Screw-in	lamps	Existing	206.91	8	\$4.05	100%	at stock turnover	\$0.00	0.00	0.01	7th Power Plan
Paper Mfg	Exterior Lighting	Area Lighting	lamps	Existing	2,507.81	15	\$45.69	100%	at stock turnover	\$0.00	0.10	0.09	Annual Energy Outlook, 2015
Paper Mfg	Exterior Lighting	Linear Lighting	lamps	Existing	196.34	17	\$54.19	100%	at stock turnover	\$0.02	0.02	0.02	7th Power Plan
Paper Mfg	Motors	Pumps	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Paper Mfg	Motors	Fans & Blowers	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Paper Mfg	Motors	Compressed Air	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Paper Mfg	Motors	Material Handling	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Paper Mfg	Motors	Other Motors	1 unit	Existing	0.00	10	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	N/A
Paper Mfg	Process	Process Heating	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Paper Mfg	Process	Process Cooling	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Paper Mfg	Process	Process Refrigeration	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Paper Mfg	Process	Process Electrochemical	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Paper Mfg	Process	Process Other	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Paper Mfg	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Paper Mfg	Cooling	Air-Cooled Chiller	1 kBTU/hr	New	18.35	20	\$26.36	3%	at stock turnover	\$0.14	0.00	0.00	Annual Energy Outlook, 2015
Paper Mfg	Cooling	Water-Cooled Chiller	1 kBTU/hr	New	27.23	25	\$12.65	3%	at stock turnover	\$0.04	0.00	0.00	Annual Energy Outlook, 2015
Paper Mfg	Cooling	RTU	1 kBTU/hr	New	3.15	15	\$6.75	11%	at stock turnover	\$0.24	0.00	0.00	Annual Energy Outlook, 2015
Paper Mfg	Cooling	Air-Source Heat Pump	1 kBTU/hr	New	6.06	15	\$21.65	3%	at stock turnover	\$0.17	0.00	0.00	Annual Energy Outlook, 2015
Paper Mfg	Heating	Air-Source Heat Pump	1 kBTU/hr	New	8.24	15	\$21.65	3%	at stock turnover	\$0.17	0.00	0.00	Annual Energy Outlook, 2015
Paper Mfg	Cooling	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Paper Mfg	Heating	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Paper Mfg	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	3%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Paper Mfg	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	15%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Paper Mfg	Ventilation	Ventilation	1000 CFM	New	1,964.09	20	\$1,219.71	100%	at stock turnover	\$0.06	0.02	0.02	AEG-BEST
Paper Mfg	Interior Lighting	Screw-in	lamps	New	36.27	8	\$4.05	100%	at stock turnover	-\$0.08	0.01	0.01	7th Power Plan
Paper Mfg	Interior Lighting	High-Bay Fixtures	lamps	New	191.61	15	\$127.03	100%	at stock turnover	\$0.07	0.24	0.23	Annual Energy Outlook, 2015
Paper Mfg	Interior Lighting	Linear Lighting	lamps	New	28.60	17	\$54.19	100%	at stock turnover	-\$0.82	0.04	0.04	7th Power Plan
Paper Mfg	Exterior Lighting	Screw-in	lamps	New	207.12	8	\$4.05	100%	at stock turnover	\$0.00	0.00	0.00	7th Power Plan
Paper Mfg	Exterior Lighting	Area Lighting	lamps	New	2,507.81	15	\$45.69	100%	at stock turnover	\$0.00	0.06	0.06	Annual Energy Outlook, 2015
Paper Mfg	Exterior Lighting	Linear Lighting	lamps	New	196.34	17	\$54.19	100%	at stock turnover	\$0.02	0.01	0.01	7th Power Plan
Paper Mfg	Motors	Pumps	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Paper Mfg	Motors	Fans & Blowers	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Paper Mfg	Motors	Compressed Air	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Paper Mfg	Motors	Material Handling	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Paper Mfg	Motors	Other Motors	1 unit	New	0.00	10	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	N/A
Paper Mfg	Process	Process Heating	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Paper Mfg	Process	Process Cooling	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Paper Mfg	Process	Process Refrigeration	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Paper Mfg	Process	Process Electrochemical	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Paper Mfg	Process	Process Other	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Paper Mfg	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Petroleum Refining	Cooling	Air-Cooled Chiller	1 kBTU/hr	Existing	21.33	20	\$26.36	3%	at stock turnover	\$0.12	0.02	0.02	Annual Energy Outlook, 2015
Petroleum Refining	Cooling	Water-Cooled Chiller	1 kBTU/hr	Existing	31.29	25	\$12.65	3%	at stock turnover	\$0.04	0.03	0.03	Annual Energy Outlook, 2015
Petroleum Refining	Cooling	RTU	1 kBTU/hr	Existing	3.24	15	\$6.75	11%	at stock turnover	\$0.23	0.02	0.02	Annual Energy Outlook, 2015
Petroleum Refining	Cooling	Air-Source Heat Pump	1 kBTU/hr	Existing	6.23	15	\$21.65	3%	at stock turnover	\$0.16	0.01	0.01	Annual Energy Outlook, 2015
Petroleum Refining	Heating	Air-Source Heat Pump	1 kBTU/hr	Existing	8.59	15	\$21.65	3%	at stock turnover	\$0.16	0.01	0.01	Annual Energy Outlook, 2015
Petroleum Refining	Cooling	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Petroleum Refining	Heating	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Petroleum Refining	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	3%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Petroleum Refining	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	15%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Petroleum Refining	Ventilation	Ventilation	1000 CFM	Existing	2,269.39	20	\$1,219.71	100%	at stock turnover	\$0.05	0.15	0.15	AEG-BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Petroleum Refining	Interior Lighting	Screw-in	lamps	Existing	36.23	8	\$4.05	100%	at stock turnover	-\$0.15	0.04	0.08	7th Power Plan
Petroleum Refining	Interior Lighting	High-Bay Fixtures	lamps	Existing	191.34	15	\$127.03	100%	at stock turnover	\$0.07	1.07	0.99	Annual Energy Outlook, 2015
Petroleum Refining	Interior Lighting	Linear Lighting	lamps	Existing	28.60	17	\$54.19	100%	at stock turnover	-\$1.42	0.21	0.20	7th Power Plan
Petroleum Refining	Exterior Lighting	Screw-in	lamps	Existing	206.91	8	\$4.05	100%	at stock turnover	\$0.00	0.01	0.02	7th Power Plan
Petroleum Refining	Exterior Lighting	Area Lighting	lamps	Existing	2,507.81	15	\$45.69	100%	at stock turnover	\$0.00	0.28	0.26	Annual Energy Outlook, 2015
Petroleum Refining	Exterior Lighting	Linear Lighting	lamps	Existing	196.34	17	\$54.19	100%	at stock turnover	\$0.02	0.06	0.05	7th Power Plan
Petroleum Refining	Motors	Pumps	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Petroleum Refining	Motors	Fans & Blowers	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Petroleum Refining	Motors	Compressed Air	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Petroleum Refining	Motors	Material Handling	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Petroleum Refining	Motors	Other Motors	1 unit	Existing	0.00	10	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	N/A
Petroleum Refining	Process	Process Heating	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Petroleum Refining	Process	Process Cooling	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Petroleum Refining	Process	Process Refrigeration	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Petroleum Refining	Process	Process Electrochemical	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Petroleum Refining	Process	Process Other	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Petroleum Refining	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Petroleum Refining	Cooling	Air-Cooled Chiller	1 kBTU/hr	New	18.35	20	\$26.36	3%	at stock turnover	\$0.14	0.01	0.01	Annual Energy Outlook, 2015
Petroleum Refining	Cooling	Water-Cooled Chiller	1 kBTU/hr	New	27.23	25	\$12.65	3%	at stock turnover	\$0.04	0.02	0.02	Annual Energy Outlook, 2015

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Petroleum Refining	Cooling	RTU	1 kBTU/hr	New	3.15	15	\$6.75	11%	at stock turnover	\$0.24	0.01	0.01	Annual Energy Outlook, 2015
Petroleum Refining	Cooling	Air-Source Heat Pump	1 kBTU/hr	New	6.06	15	\$21.65	3%	at stock turnover	\$0.17	0.00	0.00	Annual Energy Outlook, 2015
Petroleum Refining	Heating	Air-Source Heat Pump	1 kBTU/hr	New	8.24	15	\$21.65	3%	at stock turnover	\$0.17	0.01	0.01	Annual Energy Outlook, 2015
Petroleum Refining	Cooling	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Petroleum Refining	Heating	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Petroleum Refining	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	3%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Petroleum Refining	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	15%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Petroleum Refining	Ventilation	Ventilation	1000 CFM	New	1,964.09	20	\$1,219.71	100%	at stock turnover	\$0.06	0.08	0.08	AEG-BEST
Petroleum Refining	Interior Lighting	Screw-in	lamps	New	36.27	8	\$4.05	100%	at stock turnover	-\$0.15	0.03	0.03	7th Power Plan
Petroleum Refining	Interior Lighting	High-Bay Fixtures	lamps	New	191.61	15	\$127.03	100%	at stock turnover	\$0.07	0.70	0.65	Annual Energy Outlook, 2015
Petroleum Refining	Interior Lighting	Linear Lighting	lamps	New	28.60	17	\$54.19	100%	at stock turnover	-\$1.42	0.12	0.11	7th Power Plan
Petroleum Refining	Exterior Lighting	Screw-in	lamps	New	207.12	8	\$4.05	100%	at stock turnover	\$0.00	0.01	0.01	7th Power Plan
Petroleum Refining	Exterior Lighting	Area Lighting	lamps	New	2,507.81	15	\$45.69	100%	at stock turnover	\$0.00	0.18	0.17	Annual Energy Outlook, 2015
Petroleum Refining	Exterior Lighting	Linear Lighting	lamps	New	196.34	17	\$54.19	100%	at stock turnover	\$0.02	0.03	0.03	7th Power Plan
Petroleum Refining	Motors	Pumps	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Petroleum Refining	Motors	Fans & Blowers	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Petroleum Refining	Motors	Compressed Air	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Petroleum Refining	Motors	Material Handling	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Petroleum Refining	Motors	Other Motors	1 unit	New	0.00	10	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Petroleum Refining	Process	Process Heating	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Petroleum Refining	Process	Process Cooling	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Petroleum Refining	Process	Process Refrigeration	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Petroleum Refining	Process	Process Electrochemical	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Petroleum Refining	Process	Process Other	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Petroleum Refining	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Cooling	Air-Cooled Chiller	1 kBTU/hr	Existing	21.33	20	\$26.36	3%	at stock turnover	\$0.12	1.31	1.31	Annual Energy Outlook, 2015
Stone Clay Glass Products	Cooling	Water-Cooled Chiller	1 kBTU/hr	Existing	31.29	25	\$12.65	3%	at stock turnover	\$0.04	1.92	1.92	Annual Energy Outlook, 2015
Stone Clay Glass Products	Cooling	RTU	1 kBTU/hr	Existing	3.24	15	\$6.75	11%	at stock turnover	\$0.23	1.01	1.01	Annual Energy Outlook, 2015
Stone Clay Glass Products	Cooling	Air-Source Heat Pump	1 kBTU/hr	Existing	6.23	15	\$21.65	3%	at stock turnover	\$0.16	0.36	0.36	Annual Energy Outlook, 2015
Stone Clay Glass Products	Heating	Air-Source Heat Pump	1 kBTU/hr	Existing	8.59	15	\$21.65	3%	at stock turnover	\$0.16	0.50	0.50	Annual Energy Outlook, 2015
Stone Clay Glass Products	Cooling	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Stone Clay Glass Products	Heating	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Stone Clay Glass Products	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	3%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Stone Clay Glass Products	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	15%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Stone Clay Glass Products	Ventilation	Ventilation	1000 CFM	Existing	2,269.39	20	\$1,219.71	100%	at stock turnover	\$0.05	9.26	9.26	AEG-BEST
Stone Clay Glass Products	Interior Lighting	Screw-in	lamps	Existing	36.23	8	\$4.05	100%	at stock turnover	-\$0.32	3.23	6.11	7th Power Plan
Stone Clay Glass Products	Interior Lighting	High-Bay Fixtures	lamps	Existing	191.34	15	\$127.03	100%	at stock turnover	\$0.07	82.18	75.66	Annual Energy Outlook, 2015
Stone Clay Glass Products	Interior Lighting	Linear Lighting	lamps	Existing	28.60	17	\$54.19	100%	at stock turnover	-\$3.09	15.73	14.98	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Stone Clay Glass Products	Exterior Lighting	Screw-in	lamps	Existing	206.91	8	\$4.05	100%	at stock turnover	\$0.00	0.99	1.87	7th Power Plan
Stone Clay Glass Products	Exterior Lighting	Area Lighting	lamps	Existing	2,507.81	15	\$45.69	100%	at stock turnover	-\$0.01	21.37	20.24	Annual Energy Outlook, 2015
Stone Clay Glass Products	Exterior Lighting	Linear Lighting	lamps	Existing	196.34	17	\$54.19	100%	at stock turnover	\$0.01	4.25	4.05	7th Power Plan
Stone Clay Glass Products	Motors	Pumps	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Motors	Fans & Blowers	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Motors	Compressed Air	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Motors	Material Handling	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Motors	Other Motors	1 unit	Existing	0.00	10	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Process	Process Heating	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Process	Process Cooling	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Process	Process Refrigeration	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Process	Process Electrochemical	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Process	Process Other	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Cooling	Air-Cooled Chiller	1 kBTU/hr	New	18.35	20	\$26.36	3%	at stock turnover	\$0.14	0.91	0.91	Annual Energy Outlook, 2015
Stone Clay Glass Products	Cooling	Water-Cooled Chiller	1 kBTU/hr	New	27.23	25	\$12.65	3%	at stock turnover	\$0.04	1.08	1.08	Annual Energy Outlook, 2015
Stone Clay Glass Products	Cooling	RTU	1 kBTU/hr	New	3.15	15	\$6.75	11%	at stock turnover	\$0.24	0.63	0.63	Annual Energy Outlook, 2015
Stone Clay Glass Products	Cooling	Air-Source Heat Pump	1 kBTU/hr	New	6.06	15	\$21.65	3%	at stock turnover	\$0.17	0.23	0.23	Annual Energy Outlook, 2015
Stone Clay Glass Products	Heating	Air-Source Heat Pump	1 kBTU/hr	New	8.24	15	\$21.65	3%	at stock turnover	\$0.17	0.32	0.32	Annual Energy Outlook, 2015

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Stone Clay Glass Products	Cooling	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Stone Clay Glass Products	Heating	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Stone Clay Glass Products	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	3%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Stone Clay Glass Products	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	15%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Stone Clay Glass Products	Ventilation	Ventilation	1000 CFM	New	1,964.09	20	\$1,219.71	100%	at stock turnover	\$0.06	5.10	5.10	AEG-BEST
Stone Clay Glass Products	Interior Lighting	Screw-in	lamps	New	36.27	8	\$4.05	100%	at stock turnover	-\$0.32	1.94	2.41	7th Power Plan
Stone Clay Glass Products	Interior Lighting	High-Bay Fixtures	lamps	New	191.61	15	\$127.03	100%	at stock turnover	\$0.07	53.36	49.87	Annual Energy Outlook, 2015
Stone Clay Glass Products	Interior Lighting	Linear Lighting	lamps	New	28.60	17	\$54.19	100%	at stock turnover	-\$3.09	9.00	8.62	7th Power Plan
Stone Clay Glass Products	Exterior Lighting	Screw-in	lamps	New	207.12	8	\$4.05	100%	at stock turnover	\$0.00	0.59	0.74	7th Power Plan
Stone Clay Glass Products	Exterior Lighting	Area Lighting	lamps	New	2,507.81	15	\$45.69	100%	at stock turnover	-\$0.01	13.82	13.22	Annual Energy Outlook, 2015
Stone Clay Glass Products	Exterior Lighting	Linear Lighting	lamps	New	196.34	17	\$54.19	100%	at stock turnover	\$0.01	2.43	2.33	7th Power Plan
Stone Clay Glass Products	Motors	Pumps	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Motors	Fans & Blowers	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Motors	Compressed Air	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Motors	Material Handling	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Motors	Other Motors	1 unit	New	0.00	10	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Process	Process Heating	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Process	Process Cooling	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Process	Process Refrigeration	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Stone Clay Glass Products	Process	Process Electrochemical	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Process	Process Other	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Cooling	Air-Cooled Chiller	1 kBTU/hr	Existing	21.33	20	\$26.36	3%	at stock turnover	\$0.12	0.83	0.83	Annual Energy Outlook, 2015
Transportation Equipment Mfg	Cooling	Water-Cooled Chiller	1 kBTU/hr	Existing	31.29	25	\$12.65	3%	at stock turnover	\$0.04	1.22	1.22	Annual Energy Outlook, 2015
Transportation Equipment Mfg	Cooling	RTU	1 kBTU/hr	Existing	3.24	15	\$6.75	11%	at stock turnover	\$0.23	0.64	0.64	Annual Energy Outlook, 2015
Transportation Equipment Mfg	Cooling	Air-Source Heat Pump	1 kBTU/hr	Existing	6.23	15	\$21.65	3%	at stock turnover	\$0.16	0.23	0.23	Annual Energy Outlook, 2015
Transportation Equipment Mfg	Heating	Air-Source Heat Pump	1 kBTU/hr	Existing	8.59	15	\$21.65	3%	at stock turnover	\$0.16	0.32	0.32	Annual Energy Outlook, 2015
Transportation Equipment Mfg	Cooling	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Transportation Equipment Mfg	Heating	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Transportation Equipment Mfg	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	3%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Transportation Equipment Mfg	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	15%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Transportation Equipment Mfg	Ventilation	Ventilation	1000 CFM	Existing	2,269.39	20	\$1,219.71	100%	at stock turnover	\$0.05	5.86	5.86	AEG-BEST
Transportation Equipment Mfg	Interior Lighting	Screw-in	lamps	Existing	36.23	8	\$4.05	100%	at stock turnover	-\$2.38	1.81	3.43	7th Power Plan
Transportation Equipment Mfg	Interior Lighting	High-Bay Fixtures	lamps	Existing	191.34	15	\$127.03	100%	at stock turnover	\$0.07	46.15	42.49	Annual Energy Outlook, 2015
Transportation Equipment Mfg	Interior Lighting	Linear Lighting	lamps	Existing	28.60	17	\$54.19	100%	at stock turnover	-\$23.08	8.84	8.41	7th Power Plan
Transportation Equipment Mfg	Exterior Lighting	Screw-in	lamps	Existing	206.91	8	\$4.05	100%	at stock turnover	-\$0.02	0.56	1.05	7th Power Plan
Transportation Equipment Mfg	Exterior Lighting	Area Lighting	lamps	Existing	2,507.81	15	\$45.69	100%	at stock turnover	-\$0.09	12.00	11.37	Annual Energy Outlook, 2015
Transportation Equipment Mfg	Exterior Lighting	Linear Lighting	lamps	Existing	196.34	17	\$54.19	100%	at stock turnover	-\$0.11	2.39	2.27	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Transportation Equipment Mfg	Motors	Pumps	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Motors	Fans & Blowers	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Motors	Compressed Air	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Motors	Material Handling	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Motors	Other Motors	1 unit	Existing	0.00	10	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Process	Process Heating	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Process	Process Cooling	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Process	Process Refrigeration	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Process	Process Electrochemical	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Process	Process Other	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Cooling	Air-Cooled Chiller	1 kBTU/hr	New	18.35	20	\$26.36	3%	at stock turnover	\$0.14	0.58	0.58	Annual Energy Outlook, 2015
Transportation Equipment Mfg	Cooling	Water-Cooled Chiller	1 kBTU/hr	New	27.23	25	\$12.65	3%	at stock turnover	\$0.04	0.69	0.69	Annual Energy Outlook, 2015
Transportation Equipment Mfg	Cooling	RTU	1 kBTU/hr	New	3.15	15	\$6.75	11%	at stock turnover	\$0.24	0.40	0.40	Annual Energy Outlook, 2015
Transportation Equipment Mfg	Cooling	Air-Source Heat Pump	1 kBTU/hr	New	6.06	15	\$21.65	3%	at stock turnover	\$0.17	0.15	0.15	Annual Energy Outlook, 2015
Transportation Equipment Mfg	Heating	Air-Source Heat Pump	1 kBTU/hr	New	8.24	15	\$21.65	3%	at stock turnover	\$0.17	0.20	0.20	Annual Energy Outlook, 2015
Transportation Equipment Mfg	Cooling	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Transportation Equipment Mfg	Heating	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Transportation Equipment Mfg	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	3%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Transportation Equipment Mfg	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	15%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Transportation Equipment Mfg	Ventilation	Ventilation	1000 CFM	New	1,964.09	20	\$1,219.71	100%	at stock turnover	\$0.06	3.23	3.23	AEG-BEST
Transportation Equipment Mfg	Interior Lighting	Screw-in	lamps	New	36.27	8	\$4.05	100%	at stock turnover	-\$2.38	1.09	1.35	7th Power Plan
Transportation Equipment Mfg	Interior Lighting	High-Bay Fixtures	lamps	New	191.61	15	\$127.03	100%	at stock turnover	\$0.07	29.97	28.01	Annual Energy Outlook, 2015
Transportation Equipment Mfg	Interior Lighting	Linear Lighting	lamps	New	28.60	17	\$54.19	100%	at stock turnover	-\$23.08	5.05	4.84	7th Power Plan
Transportation Equipment Mfg	Exterior Lighting	Screw-in	lamps	New	207.12	8	\$4.05	100%	at stock turnover	-\$0.02	0.33	0.41	7th Power Plan
Transportation Equipment Mfg	Exterior Lighting	Area Lighting	lamps	New	2,507.81	15	\$45.69	100%	at stock turnover	-\$0.09	7.76	7.42	Annual Energy Outlook, 2015
Transportation Equipment Mfg	Exterior Lighting	Linear Lighting	lamps	New	196.34	17	\$54.19	100%	at stock turnover	-\$0.11	1.37	1.31	7th Power Plan
Transportation Equipment Mfg	Motors	Pumps	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Motors	Fans & Blowers	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Motors	Compressed Air	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Motors	Material Handling	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Motors	Other Motors	1 unit	New	0.00	10	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Process	Process Heating	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Process	Process Cooling	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Process	Process Refrigeration	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Process	Process Electrochemical	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Process	Process Other	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Wastewater	Cooling	Air-Cooled Chiller	1 kBTU/hr	Existing	21.33	20	\$26.36	3%	at stock turnover	\$0.12	0.69	0.69	Annual Energy Outlook, 2015
Wastewater	Cooling	Water-Cooled Chiller	1 kBTU/hr	Existing	31.29	25	\$12.65	3%	at stock turnover	\$0.04	1.02	1.02	Annual Energy Outlook, 2015
Wastewater	Cooling	RTU	1 kBTU/hr	Existing	3.24	15	\$6.75	11%	at stock turnover	\$0.23	0.53	0.53	Annual Energy Outlook, 2015
Wastewater	Cooling	Air-Source Heat Pump	1 kBTU/hr	Existing	6.23	15	\$21.65	3%	at stock turnover	\$0.16	0.19	0.19	Annual Energy Outlook, 2015
Wastewater	Heating	Air-Source Heat Pump	1 kBTU/hr	Existing	8.59	15	\$21.65	3%	at stock turnover	\$0.16	0.27	0.27	Annual Energy Outlook, 2015
Wastewater	Cooling	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Wastewater	Heating	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Wastewater	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	3%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Wastewater	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	15%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Wastewater	Ventilation	Ventilation	1000 CFM	Existing	2,269.39	20	\$1,219.71	100%	at stock turnover	\$0.05	4.90	4.90	AEG-BEST
Wastewater	Interior Lighting	Screw-in	lamps	Existing	36.23	8	\$4.05	100%	at stock turnover	-\$0.47	1.94	3.67	7th Power Plan
Wastewater	Interior Lighting	High-Bay Fixtures	lamps	Existing	191.34	15	\$127.03	100%	at stock turnover	\$0.07	49.38	45.46	Annual Energy Outlook, 2015
Wastewater	Interior Lighting	Linear Lighting	lamps	Existing	28.60	17	\$54.19	100%	at stock turnover	-\$4.54	9.45	9.00	7th Power Plan
Wastewater	Exterior Lighting	Screw-in	lamps	Existing	206.91	8	\$4.05	100%	at stock turnover	\$0.00	0.59	1.12	7th Power Plan
Wastewater	Exterior Lighting	Area Lighting	lamps	Existing	2,507.81	15	\$45.69	100%	at stock turnover	-\$0.02	12.84	12.16	Annual Energy Outlook, 2015
Wastewater	Exterior Lighting	Linear Lighting	lamps	Existing	196.34	17	\$54.19	100%	at stock turnover	\$0.00	2.56	2.43	7th Power Plan
Wastewater	Motors	Pumps	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Wastewater	Motors	Fans & Blowers	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Wastewater	Motors	Compressed Air	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Wastewater	Motors	Material Handling	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Wastewater	Motors	Other Motors	1 unit	Existing	0.00	10	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	N/A
Wastewater	Process	Process Heating	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Wastewater	Process	Process Cooling	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Wastewater	Process	Process Refrigeration	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Wastewater	Process	Process Electrochemical	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Wastewater	Process	Process Other	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Wastewater	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Wastewater	Cooling	Air-Cooled Chiller	1 kBTU/hr	New	18.35	20	\$26.36	3%	at stock turnover	\$0.14	0.48	0.48	Annual Energy Outlook, 2015
Wastewater	Cooling	Water-Cooled Chiller	1 kBTU/hr	New	27.23	25	\$12.65	3%	at stock turnover	\$0.04	0.57	0.57	Annual Energy Outlook, 2015
Wastewater	Cooling	RTU	1 kBTU/hr	New	3.15	15	\$6.75	11%	at stock turnover	\$0.24	0.33	0.33	Annual Energy Outlook, 2015
Wastewater	Cooling	Air-Source Heat Pump	1 kBTU/hr	New	6.06	15	\$21.65	3%	at stock turnover	\$0.17	0.12	0.12	Annual Energy Outlook, 2015
Wastewater	Heating	Air-Source Heat Pump	1 kBTU/hr	New	8.24	15	\$21.65	3%	at stock turnover	\$0.17	0.17	0.17	Annual Energy Outlook, 2015
Wastewater	Cooling	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Wastewater	Heating	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Wastewater	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	3%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Wastewater	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	15%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Wastewater	Ventilation	Ventilation	1000 CFM	New	1,964.09	20	\$1,219.71	100%	at stock turnover	\$0.06	2.70	2.70	AEG-BEST
Wastewater	Interior Lighting	Screw-in	lamps	New	36.27	8	\$4.05	100%	at stock turnover	-\$0.47	1.17	1.45	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Wastewater	Interior Lighting	High-Bay Fixtures	lamps	New	191.61	15	\$127.03	100%	at stock turnover	\$0.07	32.06	29.97	Annual Energy Outlook, 2015
Wastewater	Interior Lighting	Linear Lighting	lamps	New	28.60	17	\$54.19	100%	at stock turnover	-\$4.54	5.41	5.18	7th Power Plan
Wastewater	Exterior Lighting	Screw-in	lamps	New	207.12	8	\$4.05	100%	at stock turnover	\$0.00	0.36	0.44	7th Power Plan
Wastewater	Exterior Lighting	Area Lighting	lamps	New	2,507.81	15	\$45.69	100%	at stock turnover	-\$0.02	8.30	7.94	Annual Energy Outlook, 2015
Wastewater	Exterior Lighting	Linear Lighting	lamps	New	196.34	17	\$54.19	100%	at stock turnover	\$0.00	1.46	1.40	7th Power Plan
Wastewater	Motors	Pumps	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Wastewater	Motors	Fans & Blowers	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Wastewater	Motors	Compressed Air	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Wastewater	Motors	Material Handling	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Wastewater	Motors	Other Motors	1 unit	New	0.00	10	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	N/A
Wastewater	Process	Process Heating	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Wastewater	Process	Process Cooling	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Wastewater	Process	Process Refrigeration	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Wastewater	Process	Process Electrochemical	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Wastewater	Process	Process Other	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Wastewater	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Water	Cooling	Air-Cooled Chiller	1 kBTU/hr	Existing	21.33	20	\$26.36	3%	at stock turnover	\$0.12	1.15	1.15	Annual Energy Outlook, 2015
Water	Cooling	Water-Cooled Chiller	1 kBTU/hr	Existing	31.29	25	\$12.65	3%	at stock turnover	\$0.04	1.69	1.69	Annual Energy Outlook, 2015
Water	Cooling	RTU	1 kBTU/hr	Existing	3.24	15	\$6.75	11%	at stock turnover	\$0.23	0.89	0.89	Annual Energy Outlook, 2015

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Water	Cooling	Air-Source Heat Pump	1 kBtu/hr	Existing	6.23	15	\$21.65	3%	at stock turnover	\$0.16	0.32	0.32	Annual Energy Outlook, 2015
Water	Heating	Air-Source Heat Pump	1 kBtu/hr	Existing	8.59	15	\$21.65	3%	at stock turnover	\$0.16	0.44	0.44	Annual Energy Outlook, 2015
Water	Cooling	Geothermal Heat Pump	1 kBtu/hr	Existing	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Water	Heating	Geothermal Heat Pump	1 kBtu/hr	Existing	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Water	Heating	Electric Furnace	1 kBtu/hr	Existing	0.00	18	\$0.00	3%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Water	Heating	Electric Room Heat	3.5 kBtu/hr	Existing	0.00	18	\$0.00	15%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Water	Ventilation	Ventilation	1000 CFM	Existing	2,269.39	20	\$1,219.71	100%	at stock turnover	\$0.05	8.17	8.17	AEG-BEST
Water	Interior Lighting	Screw-in	lamps	Existing	36.23	8	\$4.05	100%	at stock turnover	-\$0.30	3.23	6.12	7th Power Plan
Water	Interior Lighting	High-Bay Fixtures	lamps	Existing	191.34	15	\$127.03	100%	at stock turnover	\$0.07	82.28	75.74	Annual Energy Outlook, 2015
Water	Interior Lighting	Linear Lighting	lamps	Existing	28.60	17	\$54.19	100%	at stock turnover	-\$2.90	15.75	14.99	7th Power Plan
Water	Exterior Lighting	Screw-in	lamps	Existing	206.91	8	\$4.05	100%	at stock turnover	\$0.00	0.99	1.87	7th Power Plan
Water	Exterior Lighting	Area Lighting	lamps	Existing	2,507.81	15	\$45.69	100%	at stock turnover	-\$0.01	21.39	20.27	Annual Energy Outlook, 2015
Water	Exterior Lighting	Linear Lighting	lamps	Existing	196.34	17	\$54.19	100%	at stock turnover	\$0.01	4.26	4.05	7th Power Plan
Water	Motors	Pumps	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Water	Motors	Fans & Blowers	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Water	Motors	Compressed Air	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Water	Motors	Material Handling	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Water	Motors	Other Motors	1 unit	Existing	0.00	10	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	N/A
Water	Process	Process Heating	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Water	Process	Process Cooling	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Water	Process	Process Refrigeration	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Water	Process	Process Electrochemical	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Water	Process	Process Other	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Water	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Water	Cooling	Air-Cooled Chiller	1 kBTU/hr	New	18.35	20	\$26.36	3%	at stock turnover	\$0.14	0.80	0.80	Annual Energy Outlook, 2015
Water	Cooling	Water-Cooled Chiller	1 kBTU/hr	New	27.23	25	\$12.65	3%	at stock turnover	\$0.04	0.96	0.96	Annual Energy Outlook, 2015
Water	Cooling	RTU	1 kBTU/hr	New	3.15	15	\$6.75	11%	at stock turnover	\$0.24	0.56	0.56	Annual Energy Outlook, 2015
Water	Cooling	Air-Source Heat Pump	1 kBTU/hr	New	6.06	15	\$21.65	3%	at stock turnover	\$0.17	0.21	0.21	Annual Energy Outlook, 2015
Water	Heating	Air-Source Heat Pump	1 kBTU/hr	New	8.24	15	\$21.65	3%	at stock turnover	\$0.17	0.28	0.28	Annual Energy Outlook, 2015
Water	Cooling	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Water	Heating	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Water	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	3%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Water	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	15%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Water	Ventilation	Ventilation	1000 CFM	New	1,964.09	20	\$1,219.71	100%	at stock turnover	\$0.06	4.50	4.50	AEG-BEST
Water	Interior Lighting	Screw-in	lamps	New	36.27	8	\$4.05	100%	at stock turnover	-\$0.30	1.94	2.41	7th Power Plan
Water	Interior Lighting	High-Bay Fixtures	lamps	New	191.61	15	\$127.03	100%	at stock turnover	\$0.07	53.42	49.93	Annual Energy Outlook, 2015
Water	Interior Lighting	Linear Lighting	lamps	New	28.60	17	\$54.19	100%	at stock turnover	-\$2.90	9.01	8.63	7th Power Plan
Water	Exterior Lighting	Screw-in	lamps	New	207.12	8	\$4.05	100%	at stock turnover	\$0.00	0.59	0.74	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Water	Exterior Lighting	Area Lighting	lamps	New	2,507.81	15	\$45.69	100%	at stock turnover	-\$0.01	13.84	13.23	Annual Energy Outlook, 2015
Water	Exterior Lighting	Linear Lighting	lamps	New	196.34	17	\$54.19	100%	at stock turnover	\$0.01	2.44	2.33	7th Power Plan
Water	Motors	Pumps	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Water	Motors	Fans & Blowers	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Water	Motors	Compressed Air	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Water	Motors	Material Handling	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Water	Motors	Other Motors	1 unit	New	0.00	10	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	N/A
Water	Process	Process Heating	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Water	Process	Process Cooling	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Water	Process	Process Refrigeration	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Water	Process	Process Electrochemical	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Water	Process	Process Other	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Water	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Chemical Mfg	Cooling	Air-Cooled Chiller	1 kBTU/hr	Existing	21.33	20	\$26.36	3%	at stock turnover	\$0.12	5.92	5.92	Annual Energy Outlook, 2015
Chemical Mfg	Cooling	Water-Cooled Chiller	1 kBTU/hr	Existing	31.29	25	\$12.65	3%	at stock turnover	\$0.04	8.69	8.69	Annual Energy Outlook, 2015
Chemical Mfg	Cooling	RTU	1 kBTU/hr	Existing	3.24	15	\$6.75	11%	at stock turnover	\$0.23	4.56	4.56	Annual Energy Outlook, 2015
Chemical Mfg	Cooling	Air-Source Heat Pump	1 kBTU/hr	Existing	6.23	15	\$21.65	3%	at stock turnover	\$0.16	1.64	1.64	Annual Energy Outlook, 2015
Chemical Mfg	Heating	Air-Source Heat Pump	1 kBTU/hr	Existing	8.59	15	\$21.65	3%	at stock turnover	\$0.16	2.27	2.27	Annual Energy Outlook, 2015
Chemical Mfg	Cooling	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Chemical Mfg	Heating	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Chemical Mfg	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	3%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Chemical Mfg	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	15%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Chemical Mfg	Ventilation	Ventilation	1000 CFM	Existing	2,269.39	20	\$1,219.71	100%	at stock turnover	\$0.05	41.91	41.91	AEG-BEST
Chemical Mfg	Interior Lighting	Screw-in	lamps	Existing	36.23	8	\$4.05	100%	at stock turnover	-\$0.34	11.33	21.42	7th Power Plan
Chemical Mfg	Interior Lighting	High-Bay Fixtures	lamps	Existing	191.34	15	\$127.03	100%	at stock turnover	\$0.07	288.15	265.27	Annual Energy Outlook, 2015
Chemical Mfg	Interior Lighting	Linear Lighting	lamps	Existing	28.60	17	\$54.19	100%	at stock turnover	-\$3.26	55.17	52.51	7th Power Plan
Chemical Mfg	Exterior Lighting	Screw-in	lamps	Existing	206.91	8	\$4.05	100%	at stock turnover	\$0.00	3.47	6.56	7th Power Plan
Chemical Mfg	Exterior Lighting	Area Lighting	lamps	Existing	2,507.81	15	\$45.69	100%	at stock turnover	-\$0.01	74.93	70.98	Annual Energy Outlook, 2015
Chemical Mfg	Exterior Lighting	Linear Lighting	lamps	Existing	196.34	17	\$54.19	100%	at stock turnover	\$0.01	14.91	14.19	7th Power Plan
Chemical Mfg	Motors	Pumps	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Chemical Mfg	Motors	Fans & Blowers	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Chemical Mfg	Motors	Compressed Air	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Chemical Mfg	Motors	Material Handling	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Chemical Mfg	Motors	Other Motors	1 unit	Existing	0.00	10	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	N/A
Chemical Mfg	Process	Process Heating	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Chemical Mfg	Process	Process Cooling	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Chemical Mfg	Process	Process Refrigeration	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Chemical Mfg	Process	Process Electrochemical	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Chemical Mfg	Process	Process Other	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Chemical Mfg	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Chemical Mfg	Cooling	Air-Cooled Chiller	1 kBTU/hr	New	18.35	20	\$26.36	3%	at stock turnover	\$0.14	4.13	4.13	Annual Energy Outlook, 2015
Chemical Mfg	Cooling	Water-Cooled Chiller	1 kBTU/hr	New	27.23	25	\$12.65	3%	at stock turnover	\$0.04	4.90	4.90	Annual Energy Outlook, 2015
Chemical Mfg	Cooling	RTU	1 kBTU/hr	New	3.15	15	\$6.75	11%	at stock turnover	\$0.24	2.85	2.85	Annual Energy Outlook, 2015
Chemical Mfg	Cooling	Air-Source Heat Pump	1 kBTU/hr	New	6.06	15	\$21.65	3%	at stock turnover	\$0.17	1.06	1.06	Annual Energy Outlook, 2015
Chemical Mfg	Heating	Air-Source Heat Pump	1 kBTU/hr	New	8.24	15	\$21.65	3%	at stock turnover	\$0.17	1.44	1.44	Annual Energy Outlook, 2015
Chemical Mfg	Cooling	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Chemical Mfg	Heating	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Chemical Mfg	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	3%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Chemical Mfg	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	15%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Chemical Mfg	Ventilation	Ventilation	1000 CFM	New	1,964.09	20	\$1,219.71	100%	at stock turnover	\$0.06	23.08	23.08	AEG-BEST
Chemical Mfg	Interior Lighting	Screw-in	lamps	New	36.27	8	\$4.05	100%	at stock turnover	-\$0.34	6.80	8.45	7th Power Plan
Chemical Mfg	Interior Lighting	High-Bay Fixtures	lamps	New	191.61	15	\$127.03	100%	at stock turnover	\$0.07	187.10	174.86	Annual Energy Outlook, 2015
Chemical Mfg	Interior Lighting	Linear Lighting	lamps	New	28.60	17	\$54.19	100%	at stock turnover	-\$3.26	31.56	30.23	7th Power Plan
Chemical Mfg	Exterior Lighting	Screw-in	lamps	New	207.12	8	\$4.05	100%	at stock turnover	\$0.00	2.08	2.59	7th Power Plan
Chemical Mfg	Exterior Lighting	Area Lighting	lamps	New	2,507.81	15	\$45.69	100%	at stock turnover	-\$0.01	48.46	46.35	Annual Energy Outlook, 2015
Chemical Mfg	Exterior Lighting	Linear Lighting	lamps	New	196.34	17	\$54.19	100%	at stock turnover	\$0.01	8.53	8.17	7th Power Plan
Chemical Mfg	Motors	Pumps	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Chemical Mfg	Motors	Fans & Blowers	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Chemical Mfg	Motors	Compressed Air	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Chemical Mfg	Motors	Material Handling	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Chemical Mfg	Motors	Other Motors	1 unit	New	0.00	10	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	N/A
Chemical Mfg	Process	Process Heating	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Chemical Mfg	Process	Process Cooling	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Chemical Mfg	Process	Process Refrigeration	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Chemical Mfg	Process	Process Electrochemical	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Chemical Mfg	Process	Process Other	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Chemical Mfg	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Cooling	Air-Cooled Chiller	1 kBTU/hr	Existing	21.33	20	\$26.36	3%	at stock turnover	\$0.12	0.48	0.48	Annual Energy Outlook, 2015
Electronic Equipment Mfg	Cooling	Water-Cooled Chiller	1 kBTU/hr	Existing	31.29	25	\$12.65	3%	at stock turnover	\$0.04	0.71	0.71	Annual Energy Outlook, 2015
Electronic Equipment Mfg	Cooling	RTU	1 kBTU/hr	Existing	3.24	15	\$6.75	11%	at stock turnover	\$0.23	0.37	0.37	Annual Energy Outlook, 2015
Electronic Equipment Mfg	Cooling	Air-Source Heat Pump	1 kBTU/hr	Existing	6.23	15	\$21.65	3%	at stock turnover	\$0.16	0.13	0.13	Annual Energy Outlook, 2015
Electronic Equipment Mfg	Heating	Air-Source Heat Pump	1 kBTU/hr	Existing	8.59	15	\$21.65	3%	at stock turnover	\$0.16	0.19	0.19	Annual Energy Outlook, 2015
Electronic Equipment Mfg	Cooling	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Electronic Equipment Mfg	Heating	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Electronic Equipment Mfg	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	3%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Electronic Equipment Mfg	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	15%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Electronic Equipment Mfg	Ventilation	Ventilation	1000 CFM	Existing	2,269.39	20	\$1,219.71	100%	at stock turnover	\$0.05	3.43	3.43	AEG-BEST
Electronic Equipment Mfg	Interior Lighting	Screw-in	lamps	Existing	36.23	8	\$4.05	100%	at stock turnover	-\$0.17	0.60	1.14	7th Power Plan
Electronic Equipment Mfg	Interior Lighting	High-Bay Fixtures	lamps	Existing	191.34	15	\$127.03	100%	at stock turnover	\$0.07	15.28	14.06	Annual Energy Outlook, 2015
Electronic Equipment Mfg	Interior Lighting	Linear Lighting	lamps	Existing	28.60	17	\$54.19	100%	at stock turnover	-\$1.64	2.93	2.78	7th Power Plan
Electronic Equipment Mfg	Exterior Lighting	Screw-in	lamps	Existing	206.91	8	\$4.05	100%	at stock turnover	\$0.00	0.18	0.35	7th Power Plan
Electronic Equipment Mfg	Exterior Lighting	Area Lighting	lamps	Existing	2,507.81	15	\$45.69	100%	at stock turnover	-\$0.01	3.97	3.76	Annual Energy Outlook, 2015
Electronic Equipment Mfg	Exterior Lighting	Linear Lighting	lamps	Existing	196.34	17	\$54.19	100%	at stock turnover	\$0.02	0.79	0.75	7th Power Plan
Electronic Equipment Mfg	Motors	Pumps	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Motors	Fans & Blowers	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Motors	Compressed Air	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Motors	Material Handling	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Motors	Other Motors	1 unit	Existing	0.00	10	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Process	Process Heating	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Process	Process Cooling	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Process	Process Refrigeration	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Process	Process Electrochemical	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Process	Process Other	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Cooling	Air-Cooled Chiller	1 kBTU/hr	New	18.35	20	\$26.36	3%	at stock turnover	\$0.14	0.34	0.34	Annual Energy Outlook, 2015

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Electronic Equipment Mfg	Cooling	Water-Cooled Chiller	1 kBTU/hr	New	27.23	25	\$12.65	3%	at stock turnover	\$0.04	0.40	0.40	Annual Energy Outlook, 2015
Electronic Equipment Mfg	Cooling	RTU	1 kBTU/hr	New	3.15	15	\$6.75	11%	at stock turnover	\$0.24	0.23	0.23	Annual Energy Outlook, 2015
Electronic Equipment Mfg	Cooling	Air-Source Heat Pump	1 kBTU/hr	New	6.06	15	\$21.65	3%	at stock turnover	\$0.17	0.09	0.09	Annual Energy Outlook, 2015
Electronic Equipment Mfg	Heating	Air-Source Heat Pump	1 kBTU/hr	New	8.24	15	\$21.65	3%	at stock turnover	\$0.17	0.12	0.12	Annual Energy Outlook, 2015
Electronic Equipment Mfg	Cooling	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Electronic Equipment Mfg	Heating	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Electronic Equipment Mfg	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	3%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Electronic Equipment Mfg	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	15%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Electronic Equipment Mfg	Ventilation	Ventilation	1000 CFM	New	1,964.09	20	\$1,219.71	100%	at stock turnover	\$0.06	1.89	1.89	AEG-BEST
Electronic Equipment Mfg	Interior Lighting	Screw-in	lamps	New	36.27	8	\$4.05	100%	at stock turnover	-\$0.17	0.36	0.45	7th Power Plan
Electronic Equipment Mfg	Interior Lighting	High-Bay Fixtures	lamps	New	191.61	15	\$127.03	100%	at stock turnover	\$0.07	9.92	9.27	Annual Energy Outlook, 2015
Electronic Equipment Mfg	Interior Lighting	Linear Lighting	lamps	New	28.60	17	\$54.19	100%	at stock turnover	-\$1.64	1.67	1.60	7th Power Plan
Electronic Equipment Mfg	Exterior Lighting	Screw-in	lamps	New	207.12	8	\$4.05	100%	at stock turnover	\$0.00	0.11	0.14	7th Power Plan
Electronic Equipment Mfg	Exterior Lighting	Area Lighting	lamps	New	2,507.81	15	\$45.69	100%	at stock turnover	-\$0.01	2.57	2.46	Annual Energy Outlook, 2015
Electronic Equipment Mfg	Exterior Lighting	Linear Lighting	lamps	New	196.34	17	\$54.19	100%	at stock turnover	\$0.02	0.45	0.43	7th Power Plan
Electronic Equipment Mfg	Motors	Pumps	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Motors	Fans & Blowers	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Motors	Compressed Air	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Motors	Material Handling	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Electronic Equipment Mfg	Motors	Other Motors	1 unit	New	0.00	10	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Process	Process Heating	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Process	Process Cooling	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Process	Process Refrigeration	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Process	Process Electrochemical	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Process	Process Other	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Industrial Machinery	Cooling	Air-Cooled Chiller	1 kBTU/hr	Existing	21.33	20	\$26.36	3%	at stock turnover	\$0.12	2.18	2.18	Annual Energy Outlook, 2015
Industrial Machinery	Cooling	Water-Cooled Chiller	1 kBTU/hr	Existing	31.29	25	\$12.65	3%	at stock turnover	\$0.04	3.20	3.20	Annual Energy Outlook, 2015
Industrial Machinery	Cooling	RTU	1 kBTU/hr	Existing	3.24	15	\$6.75	11%	at stock turnover	\$0.23	1.68	1.68	Annual Energy Outlook, 2015
Industrial Machinery	Cooling	Air-Source Heat Pump	1 kBTU/hr	Existing	6.23	15	\$21.65	3%	at stock turnover	\$0.16	0.61	0.61	Annual Energy Outlook, 2015
Industrial Machinery	Heating	Air-Source Heat Pump	1 kBTU/hr	Existing	8.59	15	\$21.65	3%	at stock turnover	\$0.16	0.84	0.84	Annual Energy Outlook, 2015
Industrial Machinery	Cooling	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Industrial Machinery	Heating	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Industrial Machinery	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	3%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Industrial Machinery	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	15%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Industrial Machinery	Ventilation	Ventilation	1000 CFM	Existing	2,269.39	20	\$1,219.71	100%	at stock turnover	\$0.05	15.46	15.46	AEG-BEST
Industrial Machinery	Interior Lighting	Screw-in	lamps	Existing	36.23	8	\$4.05	100%	at stock turnover	-\$0.46	4.04	7.64	7th Power Plan
Industrial Machinery	Interior Lighting	High-Bay Fixtures	lamps	Existing	191.34	15	\$127.03	100%	at stock turnover	\$0.07	102.73	94.58	Annual Energy Outlook, 2015

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Industrial Machinery	Interior Lighting	Linear Lighting	lamps	Existing	28.60	17	\$54.19	100%	at stock turnover	-\$4.46	19.67	18.72	7th Power Plan
Industrial Machinery	Exterior Lighting	Screw-in	lamps	Existing	206.91	8	\$4.05	100%	at stock turnover	\$0.00	1.24	2.34	7th Power Plan
Industrial Machinery	Exterior Lighting	Area Lighting	lamps	Existing	2,507.81	15	\$45.69	100%	at stock turnover	-\$0.02	26.71	25.30	Annual Energy Outlook, 2015
Industrial Machinery	Exterior Lighting	Linear Lighting	lamps	Existing	196.34	17	\$54.19	100%	at stock turnover	\$0.00	5.32	5.06	7th Power Plan
Industrial Machinery	Motors	Pumps	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Industrial Machinery	Motors	Fans & Blowers	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Industrial Machinery	Motors	Compressed Air	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Industrial Machinery	Motors	Material Handling	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Industrial Machinery	Motors	Other Motors	1 unit	Existing	0.00	10	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	N/A
Industrial Machinery	Process	Process Heating	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Industrial Machinery	Process	Process Cooling	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Industrial Machinery	Process	Process Refrigeration	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Industrial Machinery	Process	Process Electrochemical	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Industrial Machinery	Process	Process Other	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Industrial Machinery	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Industrial Machinery	Cooling	Air-Cooled Chiller	1 kBTU/hr	New	18.35	20	\$26.36	3%	at stock turnover	\$0.14	1.52	1.52	Annual Energy Outlook, 2015
Industrial Machinery	Cooling	Water-Cooled Chiller	1 kBTU/hr	New	27.23	25	\$12.65	3%	at stock turnover	\$0.04	1.81	1.81	Annual Energy Outlook, 2015
Industrial Machinery	Cooling	RTU	1 kBTU/hr	New	3.15	15	\$6.75	11%	at stock turnover	\$0.24	1.05	1.05	Annual Energy Outlook, 2015
Industrial Machinery	Cooling	Air-Source Heat Pump	1 kBTU/hr	New	6.06	15	\$21.65	3%	at stock turnover	\$0.17	0.39	0.39	Annual Energy Outlook, 2015

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Industrial Machinery	Heating	Air-Source Heat Pump	1 kBTU/hr	New	8.24	15	\$21.65	3%	at stock turnover	\$0.17	0.53	0.53	Annual Energy Outlook, 2015
Industrial Machinery	Cooling	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Industrial Machinery	Heating	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Industrial Machinery	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	3%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Industrial Machinery	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	15%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Industrial Machinery	Ventilation	Ventilation	1000 CFM	New	1,964.09	20	\$1,219.71	100%	at stock turnover	\$0.06	8.51	8.51	AEG-BEST
Industrial Machinery	Interior Lighting	Screw-in	lamps	New	36.27	8	\$4.05	100%	at stock turnover	-\$0.46	2.42	3.01	7th Power Plan
Industrial Machinery	Interior Lighting	High-Bay Fixtures	lamps	New	191.61	15	\$127.03	100%	at stock turnover	\$0.07	66.71	62.34	Annual Energy Outlook, 2015
Industrial Machinery	Interior Lighting	Linear Lighting	lamps	New	28.60	17	\$54.19	100%	at stock turnover	-\$4.46	11.25	10.78	7th Power Plan
Industrial Machinery	Exterior Lighting	Screw-in	lamps	New	207.12	8	\$4.05	100%	at stock turnover	\$0.00	0.74	0.92	7th Power Plan
Industrial Machinery	Exterior Lighting	Area Lighting	lamps	New	2,507.81	15	\$45.69	100%	at stock turnover	-\$0.02	17.28	16.52	Annual Energy Outlook, 2015
Industrial Machinery	Exterior Lighting	Linear Lighting	lamps	New	196.34	17	\$54.19	100%	at stock turnover	\$0.00	3.04	2.91	7th Power Plan
Industrial Machinery	Motors	Pumps	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Industrial Machinery	Motors	Fans & Blowers	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Industrial Machinery	Motors	Compressed Air	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Industrial Machinery	Motors	Material Handling	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Industrial Machinery	Motors	Other Motors	1 unit	New	0.00	10	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	N/A
Industrial Machinery	Process	Process Heating	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Industrial Machinery	Process	Process Cooling	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Industrial Machinery	Process	Process Refrigeration	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Industrial Machinery	Process	Process Electrochemical	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Industrial Machinery	Process	Process Other	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Industrial Machinery	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Cooling	Air-Cooled Chiller	1 kBTU/hr	Existing	21.33	20	\$26.36	3%	at stock turnover	\$0.12	0.62	0.62	Annual Energy Outlook, 2015
Lumber Wood Products	Cooling	Water-Cooled Chiller	1 kBTU/hr	Existing	31.29	25	\$12.65	3%	at stock turnover	\$0.04	0.90	0.90	Annual Energy Outlook, 2015
Lumber Wood Products	Cooling	RTU	1 kBTU/hr	Existing	3.24	15	\$6.75	11%	at stock turnover	\$0.23	0.47	0.47	Annual Energy Outlook, 2015
Lumber Wood Products	Cooling	Air-Source Heat Pump	1 kBTU/hr	Existing	6.23	15	\$21.65	3%	at stock turnover	\$0.16	0.17	0.17	Annual Energy Outlook, 2015
Lumber Wood Products	Heating	Air-Source Heat Pump	1 kBTU/hr	Existing	8.59	15	\$21.65	3%	at stock turnover	\$0.16	0.24	0.24	Annual Energy Outlook, 2015
Lumber Wood Products	Cooling	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Lumber Wood Products	Heating	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Lumber Wood Products	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	3%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Lumber Wood Products	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	15%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Lumber Wood Products	Ventilation	Ventilation	1000 CFM	Existing	2,269.39	20	\$1,219.71	100%	at stock turnover	\$0.05	4.35	4.35	AEG-BEST
Lumber Wood Products	Interior Lighting	Screw-in	lamps	Existing	36.23	8	\$4.05	100%	at stock turnover	-\$0.41	2.71	5.12	7th Power Plan
Lumber Wood Products	Interior Lighting	High-Bay Fixtures	lamps	Existing	191.34	15	\$127.03	100%	at stock turnover	\$0.07	68.88	63.41	Annual Energy Outlook, 2015
Lumber Wood Products	Interior Lighting	Linear Lighting	lamps	Existing	28.60	17	\$54.19	100%	at stock turnover	-\$3.93	13.19	12.55	7th Power Plan
Lumber Wood Products	Exterior Lighting	Screw-in	lamps	Existing	206.91	8	\$4.05	100%	at stock turnover	\$0.00	0.83	1.57	7th Power Plan
Lumber Wood Products	Exterior Lighting	Area Lighting	lamps	Existing	2,507.81	15	\$45.69	100%	at stock turnover	-\$0.01	17.91	16.97	Annual Energy Outlook, 2015

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Lumber Wood Products	Exterior Lighting	Linear Lighting	lamps	Existing	196.34	17	\$54.19	100%	at stock turnover	\$0.00	3.56	3.39	7th Power Plan
Lumber Wood Products	Motors	Pumps	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Motors	Fans & Blowers	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Motors	Compressed Air	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Motors	Material Handling	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Motors	Other Motors	1 unit	Existing	0.00	10	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Process	Process Heating	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Process	Process Cooling	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Process	Process Refrigeration	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Process	Process Electrochemical	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Process	Process Other	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Cooling	Air-Cooled Chiller	1 kBTU/hr	New	18.35	20	\$26.36	3%	at stock turnover	\$0.14	0.43	0.43	Annual Energy Outlook, 2015
Lumber Wood Products	Cooling	Water-Cooled Chiller	1 kBTU/hr	New	27.23	25	\$12.65	3%	at stock turnover	\$0.04	0.51	0.51	Annual Energy Outlook, 2015
Lumber Wood Products	Cooling	RTU	1 kBTU/hr	New	3.15	15	\$6.75	11%	at stock turnover	\$0.24	0.30	0.30	Annual Energy Outlook, 2015
Lumber Wood Products	Cooling	Air-Source Heat Pump	1 kBTU/hr	New	6.06	15	\$21.65	3%	at stock turnover	\$0.17	0.11	0.11	Annual Energy Outlook, 2015
Lumber Wood Products	Heating	Air-Source Heat Pump	1 kBTU/hr	New	8.24	15	\$21.65	3%	at stock turnover	\$0.17	0.15	0.15	Annual Energy Outlook, 2015
Lumber Wood Products	Cooling	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Lumber Wood Products	Heating	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Lumber Wood Products	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	3%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Lumber Wood Products	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	15%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Lumber Wood Products	Ventilation	Ventilation	1000 CFM	New	1,964.09	20	\$1,219.71	100%	at stock turnover	\$0.06	2.40	2.40	AEG-BEST
Lumber Wood Products	Interior Lighting	Screw-in	lamps	New	36.27	8	\$4.05	100%	at stock turnover	-\$0.41	1.63	2.02	7th Power Plan
Lumber Wood Products	Interior Lighting	High-Bay Fixtures	lamps	New	191.61	15	\$127.03	100%	at stock turnover	\$0.07	44.73	41.80	Annual Energy Outlook, 2015
Lumber Wood Products	Interior Lighting	Linear Lighting	lamps	New	28.60	17	\$54.19	100%	at stock turnover	-\$3.93	7.54	7.23	7th Power Plan
Lumber Wood Products	Exterior Lighting	Screw-in	lamps	New	207.12	8	\$4.05	100%	at stock turnover	\$0.00	0.50	0.62	7th Power Plan
Lumber Wood Products	Exterior Lighting	Area Lighting	lamps	New	2,507.81	15	\$45.69	100%	at stock turnover	-\$0.01	11.59	11.08	Annual Energy Outlook, 2015
Lumber Wood Products	Exterior Lighting	Linear Lighting	lamps	New	196.34	17	\$54.19	100%	at stock turnover	\$0.00	2.04	1.95	7th Power Plan
Lumber Wood Products	Motors	Pumps	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Motors	Fans & Blowers	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Motors	Compressed Air	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Motors	Material Handling	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Motors	Other Motors	1 unit	New	0.00	10	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Process	Process Heating	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Process	Process Cooling	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Process	Process Refrigeration	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Process	Process Electrochemical	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Process	Process Other	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Lumber Wood Products	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Metal Mfg	Cooling	Air-Cooled Chiller	1 kBTU/hr	Existing	21.33	20	\$26.36	3%	at stock turnover	\$0.12	0.82	0.82	Annual Energy Outlook, 2015
Metal Mfg	Cooling	Water-Cooled Chiller	1 kBTU/hr	Existing	31.29	25	\$12.65	3%	at stock turnover	\$0.04	1.21	1.21	Annual Energy Outlook, 2015
Metal Mfg	Cooling	RTU	1 kBTU/hr	Existing	3.24	15	\$6.75	11%	at stock turnover	\$0.23	0.63	0.63	Annual Energy Outlook, 2015
Metal Mfg	Cooling	Air-Source Heat Pump	1 kBTU/hr	Existing	6.23	15	\$21.65	3%	at stock turnover	\$0.16	0.23	0.23	Annual Energy Outlook, 2015
Metal Mfg	Heating	Air-Source Heat Pump	1 kBTU/hr	Existing	8.59	15	\$21.65	3%	at stock turnover	\$0.16	0.31	0.31	Annual Energy Outlook, 2015
Metal Mfg	Cooling	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Metal Mfg	Heating	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Metal Mfg	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	3%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Metal Mfg	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	15%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Metal Mfg	Ventilation	Ventilation	1000 CFM	Existing	2,269.39	20	\$1,219.71	100%	at stock turnover	\$0.05	5.82	5.82	AEG-BEST
Metal Mfg	Interior Lighting	Screw-in	lamps	Existing	36.23	8	\$4.05	100%	at stock turnover	-\$0.21	2.25	4.25	7th Power Plan
Metal Mfg	Interior Lighting	High-Bay Fixtures	lamps	Existing	191.34	15	\$127.03	100%	at stock turnover	\$0.07	57.21	52.67	Annual Energy Outlook, 2015
Metal Mfg	Interior Lighting	Linear Lighting	lamps	Existing	28.60	17	\$54.19	100%	at stock turnover	-\$2.01	10.95	10.43	7th Power Plan
Metal Mfg	Exterior Lighting	Screw-in	lamps	Existing	206.91	8	\$4.05	100%	at stock turnover	\$0.00	0.69	1.30	7th Power Plan
Metal Mfg	Exterior Lighting	Area Lighting	lamps	Existing	2,507.81	15	\$45.69	100%	at stock turnover	-\$0.01	14.88	14.09	Annual Energy Outlook, 2015
Metal Mfg	Exterior Lighting	Linear Lighting	lamps	Existing	196.34	17	\$54.19	100%	at stock turnover	\$0.02	2.96	2.82	7th Power Plan
Metal Mfg	Motors	Pumps	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Metal Mfg	Motors	Fans & Blowers	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Metal Mfg	Motors	Compressed Air	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Metal Mfg	Motors	Material Handling	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Metal Mfg	Motors	Other Motors	1 unit	Existing	0.00	10	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	N/A
Metal Mfg	Process	Process Heating	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Metal Mfg	Process	Process Cooling	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Metal Mfg	Process	Process Refrigeration	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Metal Mfg	Process	Process Electrochemical	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Metal Mfg	Process	Process Other	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Metal Mfg	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Metal Mfg	Cooling	Air-Cooled Chiller	1 kBTU/hr	New	18.35	20	\$26.36	3%	at stock turnover	\$0.14	0.57	0.57	Annual Energy Outlook, 2015
Metal Mfg	Cooling	Water-Cooled Chiller	1 kBTU/hr	New	27.23	25	\$12.65	3%	at stock turnover	\$0.04	0.68	0.68	Annual Energy Outlook, 2015
Metal Mfg	Cooling	RTU	1 kBTU/hr	New	3.15	15	\$6.75	11%	at stock turnover	\$0.24	0.40	0.40	Annual Energy Outlook, 2015
Metal Mfg	Cooling	Air-Source Heat Pump	1 kBTU/hr	New	6.06	15	\$21.65	3%	at stock turnover	\$0.17	0.15	0.15	Annual Energy Outlook, 2015
Metal Mfg	Heating	Air-Source Heat Pump	1 kBTU/hr	New	8.24	15	\$21.65	3%	at stock turnover	\$0.17	0.20	0.20	Annual Energy Outlook, 2015
Metal Mfg	Cooling	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Metal Mfg	Heating	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Metal Mfg	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	3%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Metal Mfg	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	15%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Metal Mfg	Ventilation	Ventilation	1000 CFM	New	1,964.09	20	\$1,219.71	100%	at stock turnover	\$0.06	3.21	3.21	AEG-BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Metal Mfg	Interior Lighting	Screw-in	lamps	New	36.27	8	\$4.05	100%	at stock turnover	-\$0.21	1.35	1.68	7th Power Plan
Metal Mfg	Interior Lighting	High-Bay Fixtures	lamps	New	191.61	15	\$127.03	100%	at stock turnover	\$0.07	37.15	34.72	Annual Energy Outlook, 2015
Metal Mfg	Interior Lighting	Linear Lighting	lamps	New	28.60	17	\$54.19	100%	at stock turnover	-\$2.01	6.27	6.00	7th Power Plan
Metal Mfg	Exterior Lighting	Screw-in	lamps	New	207.12	8	\$4.05	100%	at stock turnover	\$0.00	0.41	0.51	7th Power Plan
Metal Mfg	Exterior Lighting	Area Lighting	lamps	New	2,507.81	15	\$45.69	100%	at stock turnover	-\$0.01	9.62	9.20	Annual Energy Outlook, 2015
Metal Mfg	Exterior Lighting	Linear Lighting	lamps	New	196.34	17	\$54.19	100%	at stock turnover	\$0.02	1.69	1.62	7th Power Plan
Metal Mfg	Motors	Pumps	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Metal Mfg	Motors	Fans & Blowers	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Metal Mfg	Motors	Compressed Air	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Metal Mfg	Motors	Material Handling	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Metal Mfg	Motors	Other Motors	1 unit	New	0.00	10	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	N/A
Metal Mfg	Process	Process Heating	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Metal Mfg	Process	Process Cooling	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Metal Mfg	Process	Process Refrigeration	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Metal Mfg	Process	Process Electrochemical	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Metal Mfg	Process	Process Other	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Metal Mfg	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Misc. Mfg	Cooling	Air-Cooled Chiller	1 kBTU/hr	Existing	21.33	20	\$26.36	3%	at stock turnover	\$0.12	9.85	9.85	Annual Energy Outlook, 2015
Misc. Mfg	Cooling	Water-Cooled Chiller	1 kBTU/hr	Existing	31.29	25	\$12.65	3%	at stock turnover	\$0.04	14.46	14.46	Annual Energy Outlook, 2015

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Misc. Mfg	Cooling	RTU	1 kBTU/hr	Existing	3.24	15	\$6.75	11%	at stock turnover	\$0.23	7.59	7.59	Annual Energy Outlook, 2015
Misc. Mfg	Cooling	Air-Source Heat Pump	1 kBTU/hr	Existing	6.23	15	\$21.65	3%	at stock turnover	\$0.16	2.74	2.74	Annual Energy Outlook, 2015
Misc. Mfg	Heating	Air-Source Heat Pump	1 kBTU/hr	Existing	8.59	15	\$21.65	3%	at stock turnover	\$0.16	3.77	3.77	Annual Energy Outlook, 2015
Misc. Mfg	Cooling	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Misc. Mfg	Heating	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Misc. Mfg	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	3%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Misc. Mfg	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	15%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Misc. Mfg	Ventilation	Ventilation	1000 CFM	Existing	2,269.39	20	\$1,219.71	100%	at stock turnover	\$0.05	69.73	69.73	AEG-BEST
Misc. Mfg	Interior Lighting	Screw-in	lamps	Existing	36.23	8	\$4.05	100%	at stock turnover	-\$1.17	19.60	37.08	7th Power Plan
Misc. Mfg	Interior Lighting	High-Bay Fixtures	lamps	Existing	191.34	15	\$127.03	100%	at stock turnover	\$0.07	498.80	459.20	Annual Energy Outlook, 2015
Misc. Mfg	Interior Lighting	Linear Lighting	lamps	Existing	28.60	17	\$54.19	100%	at stock turnover	-\$11.31	95.50	90.90	7th Power Plan
Misc. Mfg	Exterior Lighting	Screw-in	lamps	Existing	206.91	8	\$4.05	100%	at stock turnover	-\$0.01	6.00	11.35	7th Power Plan
Misc. Mfg	Exterior Lighting	Area Lighting	lamps	Existing	2,507.81	15	\$45.69	100%	at stock turnover	-\$0.04	129.70	122.86	Annual Energy Outlook, 2015
Misc. Mfg	Exterior Lighting	Linear Lighting	lamps	Existing	196.34	17	\$54.19	100%	at stock turnover	-\$0.04	25.81	24.57	7th Power Plan
Misc. Mfg	Motors	Pumps	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Misc. Mfg	Motors	Fans & Blowers	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Misc. Mfg	Motors	Compressed Air	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Misc. Mfg	Motors	Material Handling	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Misc. Mfg	Motors	Other Motors	1 unit	Existing	0.00	10	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Misc. Mfg	Process	Process Heating	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Misc. Mfg	Process	Process Cooling	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Misc. Mfg	Process	Process Refrigeration	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Misc. Mfg	Process	Process Electrochemical	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Misc. Mfg	Process	Process Other	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Misc. Mfg	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Misc. Mfg	Cooling	Air-Cooled Chiller	1 kBTU/hr	New	18.35	20	\$26.36	3%	at stock turnover	\$0.14	6.87	6.87	Annual Energy Outlook, 2015
Misc. Mfg	Cooling	Water-Cooled Chiller	1 kBTU/hr	New	27.23	25	\$12.65	3%	at stock turnover	\$0.04	8.16	8.16	Annual Energy Outlook, 2015
Misc. Mfg	Cooling	RTU	1 kBTU/hr	New	3.15	15	\$6.75	11%	at stock turnover	\$0.24	4.75	4.75	Annual Energy Outlook, 2015
Misc. Mfg	Cooling	Air-Source Heat Pump	1 kBTU/hr	New	6.06	15	\$21.65	3%	at stock turnover	\$0.17	1.76	1.76	Annual Energy Outlook, 2015
Misc. Mfg	Heating	Air-Source Heat Pump	1 kBTU/hr	New	8.24	15	\$21.65	3%	at stock turnover	\$0.17	2.39	2.39	Annual Energy Outlook, 2015
Misc. Mfg	Cooling	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Misc. Mfg	Heating	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Misc. Mfg	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	3%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Misc. Mfg	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	15%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Misc. Mfg	Ventilation	Ventilation	1000 CFM	New	1,964.09	20	\$1,219.71	100%	at stock turnover	\$0.06	38.40	38.40	AEG-BEST
Misc. Mfg	Interior Lighting	Screw-in	lamps	New	36.27	8	\$4.05	100%	at stock turnover	-\$1.17	11.77	14.64	7th Power Plan
Misc. Mfg	Interior Lighting	High-Bay Fixtures	lamps	New	191.61	15	\$127.03	100%	at stock turnover	\$0.07	323.88	302.69	Annual Energy Outlook, 2015
Misc. Mfg	Interior Lighting	Linear Lighting	lamps	New	28.60	17	\$54.19	100%	at stock turnover	-\$11.31	54.63	52.33	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Misc. Mfg	Exterior Lighting	Screw-in	lamps	New	207.12	8	\$4.05	100%	at stock turnover	-\$0.01	3.60	4.48	7th Power Plan
Misc. Mfg	Exterior Lighting	Area Lighting	lamps	New	2,507.81	15	\$45.69	100%	at stock turnover	-\$0.04	83.89	80.23	Annual Energy Outlook, 2015
Misc. Mfg	Exterior Lighting	Linear Lighting	lamps	New	196.34	17	\$54.19	100%	at stock turnover	-\$0.04	16.03	15.02	7th Power Plan
Misc. Mfg	Motors	Pumps	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Misc. Mfg	Motors	Fans & Blowers	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Misc. Mfg	Motors	Compressed Air	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Misc. Mfg	Motors	Material Handling	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Misc. Mfg	Motors	Other Motors	1 unit	New	0.00	10	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	N/A
Misc. Mfg	Process	Process Heating	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Misc. Mfg	Process	Process Cooling	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Misc. Mfg	Process	Process Refrigeration	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Misc. Mfg	Process	Process Electrochemical	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Misc. Mfg	Process	Process Other	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Misc. Mfg	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Agriculture	Cooling	Insulation - Ceiling	sqft	Existing	0.12	45	\$1.28	15%	25%	\$0.14	3.42	3.67	Building Energy Simulation Tool
Agriculture	Heating	Insulation - Ceiling	sqft	Existing	0.54	45	\$1.28	15%	25%	\$0.14	16.62	17.15	Building Energy Simulation Tool
Agriculture	Ventilation	Insulation - Ceiling	sqft	Existing	0.02	45	\$1.28	15%	25%	\$0.14	2.33	2.79	Building Energy Simulation Tool
Agriculture	Cooling	Insulation - Ducting	sqft	Existing	0.05	20	\$0.84	15%	25%	\$1.04	1.24	1.37	Building Energy Simulation Tool
Agriculture	Heating	Insulation - Ducting	sqft	Existing	0.02	20	\$0.84	15%	25%	\$1.04	0.69	0.72	Building Energy Simulation Tool

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Agriculture	Ventilation	Insulation - Ducting	sqft	Existing	0.00	20	\$0.84	15%	25%	\$1.04	0.10	0.12	Building Energy Simulation Tool
Agriculture	Cooling	Insulation - Wall Cavity	sqft	Existing	0.00	45	\$0.15	45%	50%	\$0.02	0.03	0.03	Building Energy Simulation Tool
Agriculture	Heating	Insulation - Wall Cavity	sqft	Existing	0.76	45	\$0.15	45%	50%	\$0.02	11.96	12.00	Building Energy Simulation Tool
Agriculture	Ventilation	Insulation - Wall Cavity	sqft	Existing	0.02	45	\$0.15	45%	50%	\$0.02	1.56	1.86	Building Energy Simulation Tool
Agriculture	Cooling	HVAC - Duct Repair and Sealing	sqft	Existing	0.02	18	\$0.00	15%	25%	\$0.00	0.45	0.48	Building Energy Simulation Tool
Agriculture	Heating	HVAC - Duct Repair and Sealing	sqft	Existing	0.05	18	\$0.00	15%	25%	\$0.00	1.69	1.69	Building Energy Simulation Tool
Agriculture	Ventilation	HVAC - Duct Repair and Sealing	sqft	Existing	0.00	18	\$0.00	15%	25%	\$0.00	0.22	0.26	Building Energy Simulation Tool
Agriculture	Cooling	Chiller - Chilled Water Reset	sqft	Existing	0.05	10	\$0.01	15%	45%	\$0.03	1.12	1.22	AEG-BEST
Agriculture	Cooling	Chiller - Chilled Water Variable-Flow System	sqft	Existing	0.25	15	\$0.50	15%	60%	\$0.20	8.81	9.96	AEG-BEST
Agriculture	Cooling	Chiller - Variable Speed Fans	sqft	Existing	0.09	15	\$0.03	15%	75%	\$0.03	4.57	4.97	New Jersey TRM
Agriculture	Cooling	HVAC - Economizer	sqft	Existing	0.26	10	\$0.25	18%	30%	\$0.12	4.44	4.96	AEG-BEST
Agriculture	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.25	15%	35%	\$10.43	0.68	0.88	7th Power Plan
Agriculture	Cooling	Destratification Fans (HVLS)	sqft	Existing	0.16	15	\$0.63	15%	50%	\$0.04	16.90	18.35	AEG Research
Agriculture	Heating	Destratification Fans (HVLS)	sqft	Existing	1.39	15	\$0.63	15%	50%	\$0.04	164.59	166.03	AEG Research
Agriculture	Cooling	RTU - Maintenance	sqft	Existing	0.08	3	\$0.07	15%	75%	\$0.27	8.30	9.62	AEG Research
Agriculture	Cooling	Thermostat - WiFi/Interactive	sqft	Existing	0.28	5	\$0.66	5%	15%	\$0.09	7.79	8.48	7th Power Plan
Agriculture	Heating	Thermostat - WiFi/Interactive	sqft	Existing	1.27	5	\$0.66	5%	15%	\$0.09	39.01	40.42	7th Power Plan
Agriculture	Ventilation	Thermostat - WiFi/Interactive	sqft	Existing	0.04	5	\$0.66	5%	15%	\$0.09	5.48	6.57	7th Power Plan
Agriculture	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.51	15	\$0.35	3%	17%	\$0.06	38.64	48.81	7th Power Plan
Agriculture	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.70	15	\$0.58	3%	17%	\$0.07	52.68	67.55	7th Power Plan
Agriculture	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	Existing	0.02	15	\$0.00	1%	2%	\$0.01	0.39	0.57	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Agriculture	Interior Lighting	Interior Lighting - Timeclocks and Timers	sqft	Existing	0.00	8	\$0.00	7%	7%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Agriculture	Interior Lighting	Interior Lighting - Skylights	sqft	Existing	0.00	15	\$1.01	15%	23%	\$0.00	0.00	0.00	AEG Research
Agriculture	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	sqft	Existing	0.03	16	\$1.81	5%	40%	\$4.03	12.08	18.54	7th Power Plan
Agriculture	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	Existing	0.04	11	\$0.00	15%	50%	\$0.01	12.91	18.44	Illinois TRM
Agriculture	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	sqft	Existing	0.05	8	\$0.03	15%	25%	\$0.08	15.54	23.96	7th Power Plan
Agriculture	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	Existing	0.03	8	\$0.02	33%	60%	\$0.08	21.57	34.24	Pacific Gas and Electric Research
Agriculture	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	Existing	0.03	7	\$1.19	15%	30%	\$4.46	13.45	22.63	AEG Research
Agriculture	Process	Process - Conductivity Controls	employee	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Agriculture	Process	Process - Timers and Controls	employee	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Agriculture	Motors	Process - Timers and Controls	employee	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Agriculture	Process	Refrigeration - Floating Head Pressure	employee	Existing	424.58	15	\$417.42	20%	50%	\$0.11	119.68	120.74	RTF Workbook
Agriculture	Process	Refrigeration - System Optimization	employee	Existing	687.72	15	\$293.94	20%	50%	\$0.05	194.47	194.47	AEG Research
Agriculture	Motors	Pumping System - Equipment Upgrade	employee	Existing	245.91	10	\$36.27	9%	38%	\$0.02	65.83	67.89	7th Power Plan
Agriculture	Motors	Pumping System - System Optimization	employee	Existing	182.73	12	\$55.27	9%	38%	\$0.03	47.50	49.01	UNIDO Study on Industrial Energy Efficiency
Agriculture	Motors	Pumping System - Variable Speed Drive	employee	Existing	181.17	10	\$57.50	9%	38%	\$0.04	46.97	48.73	UNIDO Study on Industrial Energy Efficiency
Agriculture	Motors	Fan System - Equipment Upgrade	employee	Existing	859.92	10	\$85.20	9%	38%	\$0.02	225.94	228.05	UNIDO Study on Industrial Energy Efficiency
Agriculture	Motors	Fan System - Flow Optimization	employee	Existing	1,006.76	10	\$140.97	9%	38%	\$0.02	263.60	267.97	UNIDO Study on Industrial Energy Efficiency
Agriculture	Motors	Fan System - Variable Speed Drive	employee	Existing	1,474.03	10	\$709.34	9%	38%	\$0.06	379.23	399.64	UNIDO Study on Industrial Energy Efficiency
Agriculture	Motors	Compressed Air - Equipment Upgrade	employee	Existing	590.63	10	\$42.98	17%	50%	\$0.01	186.66	186.66	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Agriculture	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	Existing	0.00	15	\$0.00	16%	38%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Agriculture	Motors	Compressed Air - Refrigerated Cycling Dryers	employee	Existing	0.00	10	\$0.00	16%	30%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Agriculture	Motors	Compressed Air - System Controls	employee	Existing	128.63	10	\$30.73	9%	38%	\$0.03	34.30	35.72	UNIDO Study on Industrial Energy Efficiency
Agriculture	Motors	Compressed Air - Leak Management Program	employee	Existing	334.69	10	\$30.89	18%	75%	\$0.01	180.95	182.02	7th Power Plan
Agriculture	Motors	Compressed Air - Variable Speed Drive	employee	Existing	235.85	15	\$188.40	26%	45%	\$0.08	41.60	44.19	UNIDO Study on Industrial Energy Efficiency
Agriculture	Motors	Compressed Air - Low Pressure-Drop Filters	employee	Existing	7.86	10	\$2.90	17%	50%	\$0.05	2.43	2.58	Illinois TRM
Agriculture	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	Existing	48.37	10	\$9.42	17%	50%	\$0.03	15.06	15.65	UNIDO Study on Industrial Energy Efficiency
Agriculture	Motors	Compressed Air - Outside Air Intake	employee	Existing	0.00	20	\$0.00	17%	50%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Agriculture	Motors	Compressed Air - Receiver Capacity Addition	employee	Existing	47.99	15	\$25.90	17%	50%	\$0.06	14.91	15.59	UNIDO Study on Industrial Energy Efficiency
Agriculture	Motors	Material Handling - Variable Speed Drive	employee	Existing	1,728.06	10	\$623.93	25%	45%	\$0.05	314.17	326.46	7th Power Plan
Agriculture	Motors	Motors - Green Rewind (<100 HP)	employee	Existing	43.26	10	\$19.04	10%	50%	\$0.06	62.56	65.78	7th Power Plan
Agriculture	Motors	Motors - Green Rewind (100 HP+)	employee	Existing	24.49	10	\$6.76	6%	25%	\$0.04	16.93	17.56	7th Power Plan
Agriculture	Motors	Switch from Belt Drive to Direct Drive	employee	Existing	372.49	12	\$83.60	16%	25%	\$0.03	129.39	132.90	2015-mdu-irp-report---volume-iii.pdf
Agriculture	Motors	Motors - Synchronous Belts	employee	Existing	98.36	10	\$25.15	16%	36%	\$0.03	73.41	76.54	7th Power Plan
Agriculture	Miscellaneous	Agriculture - Engine Block Timer	employee	Existing	1,372.77	3	\$16.93	15%	33%	\$0.00	0.00	317.42	Vermont TRM
Agriculture	Motors	Agriculture - Live Stock Waterer	employee	Existing	581.69	10	\$319.39	15%	17%	\$0.07	10.43	11.14	Ontario Power TRM
Agriculture	Process	Dairy - Milk Precoolers	employee	Existing	2,832.15	15	\$1,328.28	15%	15%	\$0.05	10.46	10.53	Ontario Power TRM
Agriculture	Process	Clean Room: Change Filter Strategy	employee	Existing	43.88	15	\$0.32	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Agriculture	Process	Clean Room: Chiller Optimize	employee	Existing	849.50	15	\$78.65	0%	0%	\$0.01	0.00	0.00	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Agriculture	Process	Clean Room: Clean Room HVAC	employee	Existing	515.79	15	\$94.94	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Agriculture	Process	Elec Chip Fab: Solidstate Chiller	employee	Existing	509.49	15	\$298.22	0%	0%	\$0.06	0.00	0.00	7th Power Plan
Agriculture	Process	Elec Chip Fab: Eliminate Exhaust	employee	Existing	5.49	15	\$1.16	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Agriculture	Process	Elec Chip Fab: Exhaust Injector	employee	Existing	10.84	15	\$5.62	0%	0%	\$0.05	0.00	0.00	7th Power Plan
Agriculture	Process	Elec Chip Fab: Reduce Gas Pressure	employee	Existing	10.97	15	\$0.11	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Agriculture	Motors	Panel: Hydraulic Press	employee	Existing	2,605.88	10	\$623.56	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Agriculture	Motors	Wood: Replace Pneumatic Conveyor	employee	Existing	2,832.64	10	\$46.70	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Agriculture	Process	Metal: New Arc Furnace	employee	Existing	1,532.61	10	\$160.88	0%	0%	-\$0.09	0.00	0.00	7th Power Plan
Agriculture	Process	Paper: Premium Control Large Material	employee	Existing	565.75	10	\$288.62	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Agriculture	Process	Paper: Efficient Pulp Screen	employee	Existing	462.11	10	\$95.07	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Agriculture	Process	Kraft: Effluent Treatment System	employee	Existing	462.11	10	\$38.98	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Agriculture	Motors	Kraft: Efficient Agitator	employee	Existing	4,803.77	10	\$465.31	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Agriculture	Process	Mech Pulp: Premium Process	employee	Existing	5.11	5	\$0.67	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Agriculture	Motors	Mech Pulp: Refiner Plate Improvement	employee	Existing	39.73	1	\$1.78	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Agriculture	Cooling	Transformer - High Efficiency	employee	Existing	42.95	10	\$100.12	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Agriculture	Heating	Transformer - High Efficiency	employee	Existing	192.33	10	\$100.12	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Agriculture	Ventilation	Transformer - High Efficiency	employee	Existing	5.42	10	\$100.12	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Agriculture	Interior Lighting	Transformer - High Efficiency	employee	Existing	28.72	10	\$100.12	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Agriculture	Exterior Lighting	Transformer - High Efficiency	employee	Existing	6.03	10	\$100.12	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Agriculture	Motors	Transformer - High Efficiency	employee	Existing	282.69	10	\$100.12	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Agriculture	Process	Transformer - High Efficiency	employee	Existing	226.57	10	\$100.12	15%	15%	\$0.02	0.00	0.00	7th Power Plan

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Agriculture	Miscellaneous	Transformer - High Efficiency	employee	Existing	48.03	10	\$100.12	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Agriculture	Cooling	Strategic Energy Management	employee	Existing	118.73	3	\$614.92	0%	5%	\$0.08	0.90	1.00	AEG Research
Agriculture	Heating	Strategic Energy Management	employee	Existing	549.87	3	\$614.92	0%	5%	\$0.08	4.71	4.93	AEG Research
Agriculture	Ventilation	Strategic Energy Management	employee	Existing	15.52	3	\$614.92	0%	5%	\$0.08	0.66	0.80	AEG Research
Agriculture	Interior Lighting	Strategic Energy Management	employee	Existing	81.70	3	\$614.92	0%	5%	\$0.08	2.94	4.08	AEG Research
Agriculture	Exterior Lighting	Strategic Energy Management	employee	Existing	17.27	3	\$614.92	0%	5%	\$0.08	0.62	0.89	AEG Research
Agriculture	Motors	Strategic Energy Management	employee	Existing	808.71	3	\$614.92	0%	5%	\$0.08	34.09	36.16	AEG Research
Agriculture	Process	Strategic Energy Management	employee	Existing	648.03	3	\$614.92	0%	5%	\$0.08	28.07	28.57	AEG Research
Agriculture	Miscellaneous	Strategic Energy Management	employee	Existing	137.27	3	\$614.92	0%	5%	\$0.08	7.51	6.02	AEG Research
Agriculture	Interior Lighting	Commissioning	employee	Existing	94.17	3	\$908.31	0%	0%	\$0.15	0.00	0.00	AEG Research
Agriculture	Exterior Lighting	Commissioning	employee	Existing	19.90	3	\$908.31	0%	0%	\$0.15	0.00	0.00	AEG Research
Agriculture	Motors	Commissioning	employee	Existing	931.98	3	\$908.31	0%	0%	\$0.15	0.00	0.00	AEG Research
Agriculture	Process	Commissioning	employee	Existing	746.78	3	\$908.31	0%	0%	\$0.15	0.00	0.00	AEG Research
Agriculture	Miscellaneous	Commissioning	employee	Existing	158.18	3	\$908.31	0%	0%	\$0.15	0.00	0.00	AEG Research
Agriculture	Interior Lighting	Retrocommissioning	employee	Existing	95.72	3	\$576.61	5%	39%	\$0.09	23.70	32.38	AEG Research
Agriculture	Exterior Lighting	Retrocommissioning	employee	Existing	20.09	3	\$576.61	5%	39%	\$0.09	4.91	7.04	AEG Research
Agriculture	Motors	Retrocommissioning	employee	Existing	942.31	3	\$576.61	5%	39%	\$0.09	272.10	285.99	AEG Research
Agriculture	Process	Retrocommissioning	employee	Existing	755.25	3	\$576.61	5%	39%	\$0.09	224.07	226.00	AEG Research
Agriculture	Miscellaneous	Retrocommissioning	employee	Existing	160.12	3	\$576.61	5%	39%	\$0.09	59.93	47.67	AEG Research
Agriculture	Motors	Municipal Sewage Treatment	employee	Existing	32.06	12	\$18.23	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Agriculture	Motors	Municipal Water Supply Treatment	employee	Existing	0.00	12	\$0.00	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Agriculture	Cooling	Insulation - Ceiling	sqft	New	0.11	45	\$1.28	15%	25%	\$0.16	1.18	1.20	Building Energy Simulation Tool

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Agriculture	Heating	Insulation - Ceiling	sqft	New	0.52	45	\$1.28	15%	25%	\$0.16	5.84	5.85	Building Energy Simulation Tool
Agriculture	Ventilation	Insulation - Ceiling	sqft	New	0.01	45	\$1.28	15%	25%	\$0.16	0.71	0.79	Building Energy Simulation Tool
Agriculture	Cooling	Insulation - Ducting	sqft	New	0.04	20	\$0.84	15%	25%	\$1.11	0.45	0.46	Building Energy Simulation Tool
Agriculture	Heating	Insulation - Ducting	sqft	New	0.02	20	\$0.84	15%	25%	\$1.11	0.25	0.25	Building Energy Simulation Tool
Agriculture	Ventilation	Insulation - Ducting	sqft	New	0.00	20	\$0.84	15%	25%	\$1.11	0.03	0.03	Building Energy Simulation Tool
Agriculture	Cooling	Insulation - Wall Cavity	sqft	New	0.00	45	\$0.15	45%	50%	\$0.02	0.01	0.01	Building Energy Simulation Tool
Agriculture	Heating	Insulation - Wall Cavity	sqft	New	0.71	45	\$0.15	45%	50%	\$0.02	4.01	4.01	Building Energy Simulation Tool
Agriculture	Ventilation	Insulation - Wall Cavity	sqft	New	0.01	45	\$0.15	45%	50%	\$0.02	0.47	0.52	Building Energy Simulation Tool
Agriculture	Cooling	HVAC - Duct Repair and Sealing	sqft	New	0.01	18	\$0.00	15%	25%	\$0.00	0.14	0.14	Building Energy Simulation Tool
Agriculture	Heating	HVAC - Duct Repair and Sealing	sqft	New	0.05	18	\$0.00	15%	25%	\$0.00	0.52	0.52	Building Energy Simulation Tool
Agriculture	Ventilation	HVAC - Duct Repair and Sealing	sqft	New	0.00	18	\$0.00	15%	25%	\$0.00	0.06	0.07	Building Energy Simulation Tool
Agriculture	Cooling	Chiller - Chilled Water Reset	sqft	New	0.04	10	\$0.01	15%	45%	\$0.03	0.18	0.19	AEG-BEST
Agriculture	Cooling	Chiller - Chilled Water Variable-Flow System	sqft	New	0.21	15	\$0.50	15%	60%	\$0.24	1.78	1.86	AEG-BEST
Agriculture	Cooling	Chiller - Variable Speed Fans	sqft	New	0.08	15	\$0.03	15%	75%	\$0.04	0.89	0.92	New Jersey TRM
Agriculture	Cooling	HVAC - Economizer	sqft	New	0.24	10	\$0.25	18%	30%	\$0.13	0.78	0.82	AEG-BEST
Agriculture	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.25	15%	35%	\$12.47	0.14	0.16	7th Power Plan
Agriculture	Cooling	Destratification Fans (HVLS)	sqft	New	0.14	15	\$0.63	15%	50%	\$0.05	3.64	3.79	AEG Research
Agriculture	Heating	Destratification Fans (HVLS)	sqft	New	1.30	15	\$0.63	15%	50%	\$0.05	35.36	35.48	AEG Research
Agriculture	Cooling	RTU - Maintenance	sqft	New	0.08	3	\$0.07	15%	75%	\$0.28	0.56	0.61	AEG Research
Agriculture	Cooling	Thermostat - WiFi/Interactive	sqft	New	0.26	5	\$0.66	5%	15%	\$0.09	0.36	0.38	7th Power Plan
Agriculture	Heating	Thermostat - WiFi/Interactive	sqft	New	1.22	5	\$0.66	5%	15%	\$0.09	1.78	1.81	7th Power Plan

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Agriculture	Ventilation	Thermostat - WiFi/Interactive	sqft	New	0.03	5	\$0.66	5%	15%	\$0.09	0.22	0.26	7th Power Plan
Agriculture	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.46	15	\$0.35	22%	41%	\$0.06	26.35	32.35	7th Power Plan
Agriculture	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.63	15	\$0.58	22%	41%	\$0.07	35.81	44.43	7th Power Plan
Agriculture	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	New	0.02	15	\$0.00	1%	2%	\$0.01	0.08	0.10	7th Power Plan
Agriculture	Interior Lighting	Interior Lighting - Timeclocks and Timers	sqft	New	0.00	8	\$0.00	7%	7%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Agriculture	Interior Lighting	Interior Lighting - Skylights	sqft	New	0.00	15	\$1.01	18%	24%	\$0.00	0.00	0.00	AEG Research
Agriculture	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	sqft	New	0.03	16	\$1.81	5%	40%	\$4.03	2.81	3.84	7th Power Plan
Agriculture	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	New	0.03	11	\$0.00	15%	50%	\$0.01	2.51	3.39	Illinois TRM
Agriculture	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	sqft	New	0.04	8	\$0.03	15%	25%	\$0.08	2.38	3.60	7th Power Plan
Agriculture	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	New	0.02	8	\$0.02	44%	60%	\$0.08	2.03	3.05	Pacific Gas and Electric Research
Agriculture	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	New	0.03	7	\$1.19	15%	30%	\$4.40	2.04	3.12	AEG Research
Agriculture	Process	Process - Conductivity Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Agriculture	Process	Process - Timers and Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Agriculture	Motors	Process - Timers and Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Agriculture	Process	Refrigeration - Floating Head Pressure	employee	New	427.07	15	\$295.00	20%	50%	\$0.08	27.53	27.54	RTF Workbook
Agriculture	Process	Refrigeration - System Optimization	employee	New	687.72	15	\$103.16	20%	50%	\$0.02	44.30	44.30	AEG Research
Agriculture	Motors	Pumping System - Equipment Upgrade	employee	New	250.32	10	\$36.27	9%	38%	\$0.02	12.63	12.67	7th Power Plan
Agriculture	Motors	Pumping System - System Optimization	employee	New	186.80	12	\$55.27	9%	38%	\$0.03	12.73	12.72	UNIDO Study on Industrial Energy Efficiency
Agriculture	Motors	Pumping System - Variable Speed Drive	employee	New	185.98	10	\$57.50	9%	38%	\$0.04	11.37	11.37	UNIDO Study on Industrial Energy Efficiency

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Agriculture	Motors	Fan System - Equipment Upgrade	employee	New	867.43	10	\$85.20	9%	38%	\$0.02	52.94	52.87	UNIDO Study on Industrial Energy Efficiency
Agriculture	Motors	Fan System - Flow Optimization	employee	New	1,019.80	10	\$140.97	9%	38%	\$0.02	62.27	62.22	UNIDO Study on Industrial Energy Efficiency
Agriculture	Motors	Fan System - Variable Speed Drive	employee	New	1,527.03	10	\$709.34	9%	38%	\$0.06	93.47	93.57	UNIDO Study on Industrial Energy Efficiency
Agriculture	Motors	Compressed Air - Equipment Upgrade	employee	New	590.63	10	\$42.98	17%	50%	\$0.01	34.66	34.66	7th Power Plan
Agriculture	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	New	0.00	15	\$0.00	16%	38%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Agriculture	Motors	Compressed Air - Refrigerated Cycling Dryers	employee	New	0.00	10	\$0.00	16%	30%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Agriculture	Motors	Compressed Air - System Controls	employee	New	131.61	10	\$30.73	9%	38%	\$0.03	6.64	6.67	UNIDO Study on Industrial Energy Efficiency
Agriculture	Motors	Compressed Air - Leak Management Program	employee	New	336.17	10	\$30.89	18%	75%	\$0.01	33.85	33.85	7th Power Plan
Agriculture	Motors	Compressed Air - Variable Speed Drive	employee	New	243.81	15	\$188.40	26%	45%	\$0.08	10.07	10.12	UNIDO Study on Industrial Energy Efficiency
Agriculture	Motors	Compressed Air - Low Pressure-Drop Filters	employee	New	8.13	10	\$2.90	17%	50%	\$0.05	0.48	0.48	Illinois TRM
Agriculture	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	New	49.43	10	\$9.42	17%	50%	\$0.03	2.91	2.92	UNIDO Study on Industrial Energy Efficiency
Agriculture	Motors	Compressed Air - Outside Air Intake	employee	New	0.00	20	\$0.00	17%	50%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Agriculture	Motors	Compressed Air - Receiver Capacity Addition	employee	New	49.21	15	\$25.90	17%	50%	\$0.06	3.56	3.57	UNIDO Study on Industrial Energy Efficiency
Agriculture	Motors	Material Handling - Variable Speed Drive	employee	New	1,775.51	10	\$623.93	25%	45%	\$0.05	76.20	76.21	7th Power Plan
Agriculture	Motors	Motors - Green Rewind (<100 HP)	employee	New	44.77	10	\$19.04	10%	50%	\$0.06	15.38	15.40	7th Power Plan
Agriculture	Motors	Motors - Green Rewind (100 HP+)	employee	New	25.14	10	\$6.76	6%	25%	\$0.04	4.10	4.10	7th Power Plan
Agriculture	Motors	Switch from Belt Drive to Direct Drive	employee	New	379.78	12	\$83.60	16%	25%	\$0.03	34.50	34.47	2015-mdu-irp-report---volume-iii.pdf
Agriculture	Motors	Motors - Synchronous Belts	employee	New	100.72	10	\$25.15	16%	36%	\$0.03	14.23	14.30	7th Power Plan
Agriculture	Miscellaneous	Agriculture - Engine Block Timer	employee	New	1,372.77	3	\$16.93	15%	33%	\$0.00	0.00	14.53	Vermont TRM

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Agriculture	Motors	Agriculture - Live Stock Waterer	employee	New	607.08	10	\$319.39	15%	17%	\$0.07	2.61	2.61	Ontario Power TRM
Agriculture	Process	Dairy - Milk Precoolers	employee	New	2,848.12	15	\$1,328.28	15%	15%	\$0.05	2.92	2.92	Ontario Power TRM
Agriculture	Process	Clean Room: Change Filter Strategy	employee	New	43.88	15	\$0.32	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Agriculture	Process	Clean Room: Chiller Optimize	employee	New	849.50	15	\$78.65	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Agriculture	Process	Clean Room: Clean Room HVAC	employee	New	512.66	15	\$94.94	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Agriculture	Process	Elec Chip Fab: Solidstate Chiller	employee	New	512.48	15	\$298.22	0%	0%	\$0.06	0.00	0.00	7th Power Plan
Agriculture	Process	Elec Chip Fab: Eliminate Exhaust	employee	New	5.45	15	\$1.16	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Agriculture	Process	Elec Chip Fab: Exhaust Injector	employee	New	10.90	15	\$5.62	0%	0%	\$0.05	0.00	0.00	7th Power Plan
Agriculture	Process	Elec Chip Fab: Reduce Gas Pressure	employee	New	10.97	15	\$0.11	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Agriculture	Motors	Panel: Hydraulic Press	employee	New	2,664.16	10	\$623.56	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Agriculture	Motors	Wood: Replace Pneumatic Conveyor	employee	New	2,832.64	10	\$46.70	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Agriculture	Process	Metal: New Arc Furnace	employee	New	1,523.30	10	\$160.88	0%	0%	-\$0.09	0.00	0.00	7th Power Plan
Agriculture	Process	Paper: Premium Control Large Material	employee	New	571.06	10	\$288.62	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Agriculture	Process	Paper: Efficient Pulp Screen	employee	New	459.30	10	\$95.07	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Agriculture	Process	Kraft: Effluent Treatment System	employee	New	459.30	10	\$38.98	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Agriculture	Motors	Kraft: Efficient Agitator	employee	New	4,845.71	10	\$465.31	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Agriculture	Process	Mech Pulp: Premium Process	employee	New	5.12	5	\$0.67	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Agriculture	Motors	Mech Pulp: Refiner Plate Improvement	employee	New	41.47	1	\$1.78	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Agriculture	Cooling	Transformer - High Efficiency	employee	New	39.68	10	\$98.45	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Agriculture	Heating	Transformer - High Efficiency	employee	New	185.39	10	\$98.45	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Agriculture	Ventilation	Transformer - High Efficiency	employee	New	3.82	10	\$98.45	15%	15%	\$0.02	0.00	0.00	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Agriculture	Interior Lighting	Transformer - High Efficiency	employee	New	25.47	10	\$98.45	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Agriculture	Exterior Lighting	Transformer - High Efficiency	employee	New	5.65	10	\$98.45	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Agriculture	Motors	Transformer - High Efficiency	employee	New	295.09	10	\$98.45	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Agriculture	Process	Transformer - High Efficiency	employee	New	228.70	10	\$98.45	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Agriculture	Miscellaneous	Transformer - High Efficiency	employee	New	48.17	10	\$98.45	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Agriculture	Cooling	Strategic Energy Management	employee	New	112.37	3	\$604.64	0%	5%	\$0.08	0.02	0.02	AEG Research
Agriculture	Heating	Strategic Energy Management	employee	New	533.68	3	\$604.64	0%	5%	\$0.08	0.11	0.11	AEG Research
Agriculture	Ventilation	Strategic Energy Management	employee	New	10.99	3	\$604.64	0%	5%	\$0.08	0.01	0.02	AEG Research
Agriculture	Interior Lighting	Strategic Energy Management	employee	New	73.33	3	\$604.64	0%	5%	\$0.08	0.07	0.11	AEG Research
Agriculture	Exterior Lighting	Strategic Energy Management	employee	New	16.31	3	\$604.64	0%	5%	\$0.08	0.02	0.03	AEG Research
Agriculture	Motors	Strategic Energy Management	employee	New	852.49	3	\$604.64	0%	5%	\$0.08	0.86	0.88	AEG Research
Agriculture	Process	Strategic Energy Management	employee	New	660.69	3	\$604.64	0%	5%	\$0.08	0.66	0.66	AEG Research
Agriculture	Miscellaneous	Strategic Energy Management	employee	New	139.15	3	\$604.64	0%	5%	\$0.08	0.17	0.11	AEG Research
Agriculture	Interior Lighting	Commissioning	employee	New	84.59	3	\$913.97	5%	39%	\$0.15	0.53	0.87	AEG Research
Agriculture	Exterior Lighting	Commissioning	employee	New	18.81	3	\$913.97	5%	39%	\$0.15	0.12	0.21	AEG Research
Agriculture	Motors	Commissioning	employee	New	983.40	3	\$913.97	5%	39%	\$0.15	6.71	6.93	AEG Research
Agriculture	Process	Commissioning	employee	New	762.15	3	\$913.97	5%	39%	\$0.15	5.18	5.21	AEG Research
Agriculture	Miscellaneous	Commissioning	employee	New	160.52	3	\$913.97	5%	39%	\$0.15	1.37	0.87	AEG Research
Agriculture	Interior Lighting	Retrocommissioning	employee	New	84.91	3	\$580.21	0%	0%	\$0.09	0.00	0.00	AEG Research
Agriculture	Exterior Lighting	Retrocommissioning	employee	New	18.82	3	\$580.21	0%	0%	\$0.09	0.00	0.00	AEG Research
Agriculture	Motors	Retrocommissioning	employee	New	983.64	3	\$580.21	0%	0%	\$0.09	0.00	0.00	AEG Research

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Agriculture	Process	Retrocommissioning	employee	New	762.34	3	\$580.21	0%	0%	\$0.09	0.00	0.00	AEG Research
Agriculture	Miscellaneous	Retrocommissioning	employee	New	160.55	3	\$580.21	0%	0%	\$0.09	0.00	0.00	AEG Research
Agriculture	Motors	Municipal Sewage Treatment	employee	New	33.17	12	\$18.23	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Agriculture	Motors	Municipal Water Supply Treatment	employee	New	0.00	12	\$0.00	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Mining and Extraction	Cooling	Insulation - Ceiling	sqft	Existing	0.12	45	\$1.28	15%	25%	\$0.14	0.55	0.60	Building Energy Simulation Tool
Mining and Extraction	Heating	Insulation - Ceiling	sqft	Existing	0.54	45	\$1.28	15%	25%	\$0.14	2.72	2.81	Building Energy Simulation Tool
Mining and Extraction	Ventilation	Insulation - Ceiling	sqft	Existing	0.02	45	\$1.28	15%	25%	\$0.14	0.38	0.46	Building Energy Simulation Tool
Mining and Extraction	Cooling	Insulation - Ducting	sqft	Existing	0.05	20	\$0.84	15%	25%	\$1.04	0.20	0.22	Building Energy Simulation Tool
Mining and Extraction	Heating	Insulation - Ducting	sqft	Existing	0.02	20	\$0.84	15%	25%	\$1.04	0.11	0.12	Building Energy Simulation Tool
Mining and Extraction	Ventilation	Insulation - Ducting	sqft	Existing	0.00	20	\$0.84	15%	25%	\$1.04	0.02	0.02	Building Energy Simulation Tool
Mining and Extraction	Cooling	Insulation - Wall Cavity	sqft	Existing	0.00	45	\$0.15	45%	50%	\$0.02	0.00	0.00	Building Energy Simulation Tool
Mining and Extraction	Heating	Insulation - Wall Cavity	sqft	Existing	0.76	45	\$0.15	45%	50%	\$0.02	1.96	1.97	Building Energy Simulation Tool
Mining and Extraction	Ventilation	Insulation - Wall Cavity	sqft	Existing	0.02	45	\$0.15	45%	50%	\$0.02	0.26	0.31	Building Energy Simulation Tool
Mining and Extraction	Cooling	HVAC - Duct Repair and Sealing	sqft	Existing	0.02	18	\$0.00	15%	25%	\$0.00	0.07	0.08	Building Energy Simulation Tool
Mining and Extraction	Heating	HVAC - Duct Repair and Sealing	sqft	Existing	0.05	18	\$0.00	15%	25%	\$0.00	0.28	0.28	Building Energy Simulation Tool
Mining and Extraction	Ventilation	HVAC - Duct Repair and Sealing	sqft	Existing	0.00	18	\$0.00	15%	25%	\$0.00	0.04	0.04	Building Energy Simulation Tool
Mining and Extraction	Cooling	Chiller - Chilled Water Reset	sqft	Existing	0.05	10	\$0.01	15%	45%	\$0.03	0.18	0.20	AEG-BEST
Mining and Extraction	Cooling	Chiller - Chilled Water Variable-Flow System	sqft	Existing	0.25	15	\$0.50	15%	60%	\$0.20	1.44	1.63	AEG-BEST
Mining and Extraction	Cooling	Chiller - Variable Speed Fans	sqft	Existing	0.09	15	\$0.03	15%	75%	\$0.03	0.75	0.81	New Jersey TRM
Mining and Extraction	Cooling	HVAC - Economizer	sqft	Existing	1.00	10	\$0.25	18%	30%	\$0.03	0.76	0.83	AEG-BEST

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Mining and Extraction	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.25	15%	35%	\$10.43	0.11	0.14	7th Power Plan
Mining and Extraction	Cooling	Destratification Fans (HVLS)	sqft	Existing	0.16	15	\$0.63	15%	50%	\$0.04	2.74	2.99	AEG Research
Mining and Extraction	Heating	Destratification Fans (HVLS)	sqft	Existing	1.39	15	\$0.63	15%	50%	\$0.04	26.97	27.21	AEG Research
Mining and Extraction	Cooling	RTU - Maintenance	sqft	Existing	0.08	3	\$0.07	15%	75%	\$0.27	1.36	1.58	AEG Research
Mining and Extraction	Cooling	Thermostat - WiFi/Interactive	sqft	Existing	0.28	5	\$0.66	5%	15%	\$0.09	1.28	1.39	7th Power Plan
Mining and Extraction	Heating	Thermostat - WiFi/Interactive	sqft	Existing	1.27	5	\$0.66	5%	15%	\$0.09	6.39	6.62	7th Power Plan
Mining and Extraction	Ventilation	Thermostat - WiFi/Interactive	sqft	Existing	0.04	5	\$0.66	5%	15%	\$0.09	0.90	1.08	7th Power Plan
Mining and Extraction	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	1.91	15	\$0.35	7%	33%	\$0.02	19.28	24.36	7th Power Plan
Mining and Extraction	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	2.61	15	\$0.58	7%	33%	\$0.02	25.58	33.32	7th Power Plan
Mining and Extraction	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	Existing	0.02	15	\$0.00	1%	2%	\$0.01	0.10	0.14	7th Power Plan
Mining and Extraction	Interior Lighting	Interior Lighting - Timeclocks and Timers	sqft	Existing	0.00	8	\$0.00	7%	7%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Mining and Extraction	Interior Lighting	Interior Lighting - Skylights	sqft	Existing	0.00	15	\$1.01	15%	23%	\$0.00	0.00	0.00	AEG Research
Mining and Extraction	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	sqft	Existing	0.03	16	\$1.81	5%	40%	\$4.03	2.83	4.58	7th Power Plan
Mining and Extraction	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	Existing	0.04	11	\$0.00	15%	50%	\$0.01	3.22	4.60	Illinois TRM
Mining and Extraction	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	sqft	Existing	0.05	8	\$0.03	15%	25%	\$0.08	3.88	5.98	7th Power Plan
Mining and Extraction	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	Existing	0.03	8	\$0.02	33%	60%	\$0.08	5.38	8.54	Pacific Gas and Electric Research
Mining and Extraction	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	Existing	0.03	7	\$1.19	15%	30%	\$4.46	3.37	5.65	AEG Research
Mining and Extraction	Process	Process - Conductivity Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Mining and Extraction	Process	Process - Timers and Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A

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Mining and Extraction	Motors	Process - Timers and Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Mining and Extraction	Process	Refrigeration - Floating Head Pressure	employee	Existing	0.00	15	\$311.43	20%	50%	\$0.00	0.00	0.00	RTF Workbook
Mining and Extraction	Process	Refrigeration - System Optimization	employee	Existing	0.00	15	\$219.30	20%	50%	\$0.00	0.00	0.00	AEG Research
Mining and Extraction	Motors	Pumping System - Equipment Upgrade	employee	Existing	28,218.40	10	\$4,156.50	9%	38%	\$0.02	319.03	327.60	7th Power Plan
Mining and Extraction	Motors	Pumping System - System Optimization	employee	Existing	20,644.66	12	\$6,334.51	9%	38%	\$0.03	225.71	234.10	UNIDO Study on Industrial Energy Efficiency
Mining and Extraction	Motors	Pumping System - Variable Speed Drive	employee	Existing	20,229.13	10	\$6,590.26	9%	38%	\$0.04	219.64	231.08	UNIDO Study on Industrial Energy Efficiency
Mining and Extraction	Motors	Fan System - Equipment Upgrade	employee	Existing	4,334.06	10	\$435.44	9%	38%	\$0.02	47.82	48.65	UNIDO Study on Industrial Energy Efficiency
Mining and Extraction	Motors	Fan System - Flow Optimization	employee	Existing	5,109.64	10	\$720.46	9%	38%	\$0.02	56.32	57.40	UNIDO Study on Industrial Energy Efficiency
Mining and Extraction	Motors	Fan System - Variable Speed Drive	employee	Existing	7,333.13	10	\$3,625.32	9%	38%	\$0.06	78.98	84.44	UNIDO Study on Industrial Energy Efficiency
Mining and Extraction	Motors	Compressed Air - Equipment Upgrade	employee	Existing	21,325.56	10	\$1,551.76	17%	50%	\$0.01	284.00	284.00	7th Power Plan
Mining and Extraction	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	Existing	0.00	15	\$0.00	16%	38%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Mining and Extraction	Motors	Compressed Air - Refrigerated Cycling Dryers	employee	Existing	0.00	10	\$0.00	16%	30%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Mining and Extraction	Motors	Compressed Air - System Controls	employee	Existing	4,533.45	10	\$1,109.51	9%	38%	\$0.03	50.66	53.62	UNIDO Study on Industrial Energy Efficiency
Mining and Extraction	Motors	Compressed Air - Leak Management Program	employee	Existing	11,999.56	10	\$1,115.33	18%	75%	\$0.02	272.90	275.88	7th Power Plan
Mining and Extraction	Motors	Compressed Air - Variable Speed Drive	employee	Existing	8,302.95	15	\$6,802.33	26%	45%	\$0.08	61.34	66.28	UNIDO Study on Industrial Energy Efficiency
Mining and Extraction	Motors	Compressed Air - Low Pressure-Drop Filters	employee	Existing	276.82	10	\$104.84	17%	50%	\$0.05	3.58	3.87	Illinois TRM
Mining and Extraction	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	Existing	1,722.62	10	\$340.12	17%	50%	\$0.03	22.57	23.60	UNIDO Study on Industrial Energy Efficiency
Mining and Extraction	Motors	Compressed Air - Outside Air Intake	employee	Existing	0.00	20	\$0.00	17%	50%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Mining and Extraction	Motors	Compressed Air - Receiver Capacity Addition	employee	Existing	1,687.94	15	\$935.32	17%	50%	\$0.06	21.96	23.37	UNIDO Study on Industrial Energy Efficiency

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Mining and Extraction	Motors	Material Handling - Variable Speed Drive	employee	Existing	7,279.65	10	\$2,724.41	25%	45%	\$0.05	55.21	58.62	7th Power Plan
Mining and Extraction	Motors	Motors - Green Rewind (<100 HP)	employee	Existing	661.79	10	\$299.27	10%	50%	\$0.06	50.08	53.42	7th Power Plan
Mining and Extraction	Motors	Motors - Green Rewind (100 HP+)	employee	Existing	375.37	10	\$106.22	6%	25%	\$0.04	13.59	14.28	7th Power Plan
Mining and Extraction	Motors	Switch from Belt Drive to Direct Drive	employee	Existing	5,773.75	12	\$1,313.66	16%	25%	\$0.03	105.47	108.84	2015-mdu-irp-report---volume-iii.pdf
Mining and Extraction	Motors	Motors - Synchronous Belts	employee	Existing	1,506.68	10	\$395.20	16%	36%	\$0.03	58.88	62.45	7th Power Plan
Mining and Extraction	Miscellaneous	Agriculture - Engine Block Timer	employee	Existing	2,606.64	3	\$32.16	0%	0%	\$0.00	0.00	0.00	Vermont TRM
Mining and Extraction	Motors	Agriculture - Live Stock Waterer	employee	Existing	65,712.45	10	\$36,605.35	0%	0%	\$0.07	0.00	0.00	Ontario Power TRM
Mining and Extraction	Process	Dairy - Milk Precoolers	employee	Existing	0.00	15	\$991.00	0%	0%	\$0.00	0.00	0.00	Ontario Power TRM
Mining and Extraction	Process	Clean Room: Change Filter Strategy	employee	Existing	1,710.32	15	\$12.61	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Mining and Extraction	Process	Clean Room: Chiller Optimize	employee	Existing	0.00	15	\$58.68	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Mining and Extraction	Process	Clean Room: Clean Room HVAC	employee	Existing	0.00	15	\$70.83	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Mining and Extraction	Process	Elec Chip Fab: Solidstate Chiller	employee	Existing	0.00	15	\$222.49	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Mining and Extraction	Process	Elec Chip Fab: Eliminate Exhaust	employee	Existing	213.79	15	\$45.38	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Mining and Extraction	Process	Elec Chip Fab: Exhaust Injector	employee	Existing	427.58	15	\$218.92	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Mining and Extraction	Process	Elec Chip Fab: Reduce Gas Pressure	employee	Existing	427.58	15	\$4.39	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Mining and Extraction	Motors	Panel: Hydraulic Press	employee	Existing	11,074.10	10	\$2,722.77	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Mining and Extraction	Motors	Wood: Replace Pneumatic Conveyor	employee	Existing	12,368.83	10	\$203.91	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Mining and Extraction	Process	Metal: New Arc Furnace	employee	Existing	1,924.11	10	\$201.98	0%	0%	-\$0.20	0.00	0.00	7th Power Plan
Mining and Extraction	Process	Paper: Premium Control Large Material	employee	Existing	2,001.86	10	\$1,001.45	0%	0%	\$0.07	0.00	0.00	7th Power Plan

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Mining and Extraction	Process	Paper: Efficient Pulp Screen	employee	Existing	1,603.43	10	\$329.88	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Mining and Extraction	Process	Kraft: Effluent Treatment System	employee	Existing	1,603.43	10	\$135.24	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Mining and Extraction	Motors	Kraft: Efficient Agitator	employee	Existing	20,685.28	10	\$2,031.81	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Mining and Extraction	Process	Mech Pulp: Premium Process	employee	Existing	17.95	5	\$2.31	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Mining and Extraction	Motors	Mech Pulp: Refiner Plate Improvement	employee	Existing	171.08	1	\$7.75	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Mining and Extraction	Cooling	Transformer - High Efficiency	employee	Existing	167.01	10	\$897.93	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Mining and Extraction	Heating	Transformer - High Efficiency	employee	Existing	747.90	10	\$897.93	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Mining and Extraction	Ventilation	Transformer - High Efficiency	employee	Existing	21.09	10	\$897.93	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Mining and Extraction	Interior Lighting	Transformer - High Efficiency	employee	Existing	165.25	10	\$897.93	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Mining and Extraction	Exterior Lighting	Transformer - High Efficiency	employee	Existing	35.69	10	\$897.93	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Mining and Extraction	Motors	Transformer - High Efficiency	employee	Existing	5,476.04	10	\$897.93	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Mining and Extraction	Process	Transformer - High Efficiency	employee	Existing	481.03	10	\$897.93	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Mining and Extraction	Miscellaneous	Transformer - High Efficiency	employee	Existing	98.66	10	\$897.93	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Mining and Extraction	Cooling	Strategic Energy Management	employee	Existing	461.71	3	\$5,514.79	0%	0%	\$0.08	0.00	0.00	AEG Research
Mining and Extraction	Heating	Strategic Energy Management	employee	Existing	2,138.22	3	\$5,514.79	0%	0%	\$0.08	0.00	0.00	AEG Research
Mining and Extraction	Ventilation	Strategic Energy Management	employee	Existing	60.34	3	\$5,514.79	0%	0%	\$0.08	0.00	0.00	AEG Research
Mining and Extraction	Interior Lighting	Strategic Energy Management	employee	Existing	470.77	3	\$5,514.79	0%	0%	\$0.08	0.00	0.00	AEG Research
Mining and Extraction	Exterior Lighting	Strategic Energy Management	employee	Existing	102.34	3	\$5,514.79	0%	0%	\$0.08	0.00	0.00	AEG Research
Mining and Extraction	Motors	Strategic Energy Management	employee	Existing	15,684.00	3	\$5,514.79	0%	0%	\$0.08	0.00	0.00	AEG Research

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Mining and Extraction	Process	Strategic Energy Management	employee	Existing	1,377.37	3	\$5,514.79	0%	0%	\$0.08	0.00	0.00	AEG Research
Mining and Extraction	Miscellaneous	Strategic Energy Management	employee	Existing	282.26	3	\$5,514.79	0%	0%	\$0.08	0.00	0.00	AEG Research
Mining and Extraction	Interior Lighting	Commissioning	employee	Existing	543.19	3	\$10,565.50	0%	0%	\$0.16	0.00	0.00	AEG Research
Mining and Extraction	Exterior Lighting	Commissioning	employee	Existing	118.08	3	\$10,565.50	0%	0%	\$0.16	0.00	0.00	AEG Research
Mining and Extraction	Motors	Commissioning	employee	Existing	18,096.94	3	\$10,565.50	0%	0%	\$0.16	0.00	0.00	AEG Research
Mining and Extraction	Process	Commissioning	employee	Existing	1,589.28	3	\$10,565.50	0%	0%	\$0.16	0.00	0.00	AEG Research
Mining and Extraction	Miscellaneous	Commissioning	employee	Existing	325.68	3	\$10,565.50	0%	0%	\$0.16	0.00	0.00	AEG Research
Mining and Extraction	Interior Lighting	Retrocommissioning	employee	Existing	550.85	3	\$6,707.19	10%	40%	\$0.10	4.88	6.96	AEG Research
Mining and Extraction	Exterior Lighting	Retrocommissioning	employee	Existing	118.96	3	\$6,707.19	10%	40%	\$0.10	1.08	1.55	AEG Research
Mining and Extraction	Motors	Retrocommissioning	employee	Existing	18,253.46	3	\$6,707.19	10%	40%	\$0.10	195.71	206.47	AEG Research
Mining and Extraction	Process	Retrocommissioning	employee	Existing	1,603.43	3	\$6,707.19	10%	40%	\$0.10	17.78	17.78	AEG Research
Mining and Extraction	Miscellaneous	Retrocommissioning	employee	Existing	328.86	3	\$6,707.19	10%	40%	\$0.10	4.62	3.59	AEG Research
Mining and Extraction	Motors	Municipal Sewage Treatment	employee	Existing	3,576.31	12	\$2,089.55	0%	0%	\$0.06	0.00	0.00	7th Power Plan
Mining and Extraction	Motors	Municipal Water Supply Treatment	employee	Existing	0.00	12	\$0.00	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Mining and Extraction	Cooling	Insulation - Ceiling	sqft	New	0.11	45	\$1.28	15%	25%	\$0.16	0.19	0.20	Building Energy Simulation Tool
Mining and Extraction	Heating	Insulation - Ceiling	sqft	New	0.52	45	\$1.28	15%	25%	\$0.16	0.96	0.96	Building Energy Simulation Tool
Mining and Extraction	Ventilation	Insulation - Ceiling	sqft	New	0.01	45	\$1.28	15%	25%	\$0.16	0.12	0.13	Building Energy Simulation Tool
Mining and Extraction	Cooling	Insulation - Ducting	sqft	New	0.04	20	\$0.84	15%	25%	\$1.11	0.07	0.08	Building Energy Simulation Tool
Mining and Extraction	Heating	Insulation - Ducting	sqft	New	0.02	20	\$0.84	15%	25%	\$1.11	0.04	0.04	Building Energy Simulation Tool

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Mining and Extraction	Ventilation	Insulation - Ducting	sqft	New	0.00	20	\$0.84	15%	25%	\$1.11	0.00	0.01	Building Energy Simulation Tool
Mining and Extraction	Cooling	Insulation - Wall Cavity	sqft	New	0.00	45	\$0.15	45%	50%	\$0.02	0.00	0.00	Building Energy Simulation Tool
Mining and Extraction	Heating	Insulation - Wall Cavity	sqft	New	0.71	45	\$0.15	45%	50%	\$0.02	0.66	0.66	Building Energy Simulation Tool
Mining and Extraction	Ventilation	Insulation - Wall Cavity	sqft	New	0.01	45	\$0.15	45%	50%	\$0.02	0.08	0.09	Building Energy Simulation Tool
Mining and Extraction	Cooling	HVAC - Duct Repair and Sealing	sqft	New	0.01	18	\$0.00	15%	25%	\$0.00	0.02	0.02	Building Energy Simulation Tool
Mining and Extraction	Heating	HVAC - Duct Repair and Sealing	sqft	New	0.05	18	\$0.00	15%	25%	\$0.00	0.09	0.09	Building Energy Simulation Tool
Mining and Extraction	Ventilation	HVAC - Duct Repair and Sealing	sqft	New	0.00	18	\$0.00	15%	25%	\$0.00	0.01	0.01	Building Energy Simulation Tool
Mining and Extraction	Cooling	Chiller - Chilled Water Reset	sqft	New	0.04	10	\$0.01	15%	45%	\$0.03	0.03	0.03	AEG-BEST
Mining and Extraction	Cooling	Chiller - Chilled Water Variable-Flow System	sqft	New	0.21	15	\$0.50	15%	60%	\$0.24	0.29	0.30	AEG-BEST
Mining and Extraction	Cooling	Chiller - Variable Speed Fans	sqft	New	0.08	15	\$0.03	15%	75%	\$0.04	0.15	0.15	New Jersey TRM
Mining and Extraction	Cooling	HVAC - Economizer	sqft	New	0.90	10	\$0.25	18%	30%	\$0.04	0.13	0.14	AEG-BEST
Mining and Extraction	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.25	15%	35%	\$12.47	0.02	0.03	7th Power Plan
Mining and Extraction	Cooling	Destratification Fans (HVLS)	sqft	New	0.14	15	\$0.63	15%	50%	\$0.05	0.60	0.62	AEG Research
Mining and Extraction	Heating	Destratification Fans (HVLS)	sqft	New	1.30	15	\$0.63	15%	50%	\$0.05	5.79	5.81	AEG Research
Mining and Extraction	Cooling	RTU - Maintenance	sqft	New	0.08	3	\$0.07	15%	75%	\$0.28	0.09	0.10	AEG Research
Mining and Extraction	Cooling	Thermostat - WiFi/Interactive	sqft	New	0.26	5	\$0.66	5%	15%	\$0.09	0.06	0.06	7th Power Plan
Mining and Extraction	Heating	Thermostat - WiFi/Interactive	sqft	New	1.22	5	\$0.66	5%	15%	\$0.09	0.29	0.30	7th Power Plan
Mining and Extraction	Ventilation	Thermostat - WiFi/Interactive	sqft	New	0.03	5	\$0.66	5%	15%	\$0.09	0.04	0.04	7th Power Plan
Mining and Extraction	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	1.74	15	\$0.35	22%	41%	\$0.02	6.57	8.07	7th Power Plan

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Mining and Extraction	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	2.38	15	\$0.58	22%	41%	\$0.02	8.94	11.09	7th Power Plan
Mining and Extraction	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	New	0.02	15	\$0.00	1%	2%	\$0.01	0.02	0.03	7th Power Plan
Mining and Extraction	Interior Lighting	Interior Lighting - Timeclocks and Timers	sqft	New	0.00	8	\$0.00	7%	7%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Mining and Extraction	Interior Lighting	Interior Lighting - Skylights	sqft	New	0.00	15	\$1.01	18%	24%	\$0.00	0.00	0.00	AEG Research
Mining and Extraction	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	sqft	New	0.03	16	\$1.81	5%	40%	\$4.03	0.70	0.96	7th Power Plan
Mining and Extraction	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	New	0.03	11	\$0.00	15%	50%	\$0.01	0.63	0.85	Illinois TRM
Mining and Extraction	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	sqft	New	0.04	8	\$0.03	15%	25%	\$0.08	0.59	0.90	7th Power Plan
Mining and Extraction	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	New	0.02	8	\$0.02	44%	60%	\$0.08	0.51	0.76	Pacific Gas and Electric Research
Mining and Extraction	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	New	0.03	7	\$1.19	15%	30%	\$4.40	0.51	0.78	AEG Research
Mining and Extraction	Process	Process - Conductivity Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Mining and Extraction	Process	Process - Timers and Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Mining and Extraction	Motors	Process - Timers and Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Mining and Extraction	Process	Refrigeration - Floating Head Pressure	employee	New	0.00	15	\$220.10	20%	50%	\$0.00	0.00	0.00	RTF Workbook
Mining and Extraction	Process	Refrigeration - System Optimization	employee	New	0.00	15	\$76.96	20%	50%	\$0.00	0.00	0.00	AEG Research
Mining and Extraction	Motors	Pumping System - Equipment Upgrade	employee	New	28,741.95	10	\$4,156.50	9%	38%	\$0.02	61.13	61.15	7th Power Plan
Mining and Extraction	Motors	Pumping System - System Optimization	employee	New	21,290.61	12	\$6,334.51	9%	38%	\$0.03	61.27	61.06	UNIDO Study on Industrial Energy Efficiency
Mining and Extraction	Motors	Pumping System - Variable Speed Drive	employee	New	21,055.07	10	\$6,590.26	9%	38%	\$0.04	54.39	54.27	UNIDO Study on Industrial Energy Efficiency
Mining and Extraction	Motors	Fan System - Equipment Upgrade	employee	New	4,404.15	10	\$435.44	9%	38%	\$0.02	11.34	11.31	UNIDO Study on Industrial Energy Efficiency
Mining and Extraction	Motors	Fan System - Flow Optimization	employee	New	5,197.85	10	\$720.46	9%	38%	\$0.02	13.39	13.36	UNIDO Study on Industrial Energy Efficiency

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Mining and Extraction	Motors	Fan System - Variable Speed Drive	employee	New	7,705.54	10	\$3,625.32	9%	38%	\$0.06	19.93	19.90	UNIDO Study on Industrial Energy Efficiency
Mining and Extraction	Motors	Compressed Air - Equipment Upgrade	employee	New	21,325.56	10	\$1,551.76	17%	50%	\$0.01	52.74	52.74	7th Power Plan
Mining and Extraction	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	New	0.00	15	\$0.00	16%	38%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Mining and Extraction	Motors	Compressed Air - Refrigerated Cycling Dryers	employee	New	0.00	10	\$0.00	16%	30%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Mining and Extraction	Motors	Compressed Air - System Controls	employee	New	4,698.46	10	\$1,109.51	9%	38%	\$0.03	10.01	10.06	UNIDO Study on Industrial Energy Efficiency
Mining and Extraction	Motors	Compressed Air - Leak Management Program	employee	New	12,097.44	10	\$1,115.33	18%	75%	\$0.02	51.37	51.35	7th Power Plan
Mining and Extraction	Motors	Compressed Air - Variable Speed Drive	employee	New	8,699.10	15	\$6,802.33	26%	45%	\$0.08	15.18	15.24	UNIDO Study on Industrial Energy Efficiency
Mining and Extraction	Motors	Compressed Air - Low Pressure-Drop Filters	employee	New	290.00	10	\$104.84	17%	50%	\$0.05	0.72	0.73	Illinois TRM
Mining and Extraction	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	New	1,775.32	10	\$340.12	17%	50%	\$0.03	4.41	4.42	UNIDO Study on Industrial Energy Efficiency
Mining and Extraction	Motors	Compressed Air - Outside Air Intake	employee	New	0.00	20	\$0.00	17%	50%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Mining and Extraction	Motors	Compressed Air - Receiver Capacity Addition	employee	New	1,755.79	15	\$935.32	17%	50%	\$0.06	5.36	5.37	UNIDO Study on Industrial Energy Efficiency
Mining and Extraction	Motors	Material Handling - Variable Speed Drive	employee	New	7,616.19	10	\$2,724.41	25%	45%	\$0.05	13.81	13.79	7th Power Plan
Mining and Extraction	Motors	Motors - Green Rewind (<100 HP)	employee	New	694.57	10	\$299.27	10%	50%	\$0.06	12.60	12.59	7th Power Plan
Mining and Extraction	Motors	Motors - Green Rewind (100 HP+)	employee	New	390.33	10	\$106.22	6%	25%	\$0.04	3.36	3.35	7th Power Plan
Mining and Extraction	Motors	Switch from Belt Drive to Direct Drive	employee	New	5,936.80	12	\$1,313.66	16%	25%	\$0.03	28.47	28.36	2015-mdu-irp-report---volume-iii.pdf
Mining and Extraction	Motors	Motors - Synchronous Belts	employee	New	1,563.93	10	\$395.20	16%	36%	\$0.03	11.67	11.72	7th Power Plan
Mining and Extraction	Miscellaneous	Agriculture - Engine Block Timer	employee	New	2,606.64	3	\$32.16	0%	0%	\$0.00	0.00	0.00	Vermont TRM
Mining and Extraction	Motors	Agriculture - Live Stock Waterer	employee	New	69,179.82	10	\$36,605.35	0%	0%	\$0.07	0.00	0.00	Ontario Power TRM
Mining and Extraction	Process	Dairy - Milk Precoolers	employee	New	0.00	15	\$991.00	0%	0%	\$0.00	0.00	0.00	Ontario Power TRM

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Mining and Extraction	Process	Clean Room: Change Filter Strategy	employee	New	1,710.32	15	\$12.61	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Mining and Extraction	Process	Clean Room: Chiller Optimize	employee	New	0.00	15	\$58.68	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Mining and Extraction	Process	Clean Room: Clean Room HVAC	employee	New	0.00	15	\$70.83	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Mining and Extraction	Process	Elec Chip Fab: Solidstate Chiller	employee	New	0.00	15	\$222.49	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Mining and Extraction	Process	Elec Chip Fab: Eliminate Exhaust	employee	New	213.79	15	\$45.38	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Mining and Extraction	Process	Elec Chip Fab: Exhaust Injector	employee	New	427.58	15	\$218.92	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Mining and Extraction	Process	Elec Chip Fab: Reduce Gas Pressure	employee	New	427.58	15	\$4.39	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Mining and Extraction	Motors	Panel: Hydraulic Press	employee	New	11,511.23	10	\$2,722.77	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Mining and Extraction	Motors	Wood: Replace Pneumatic Conveyor	employee	New	12,368.83	10	\$203.91	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Mining and Extraction	Process	Metal: New Arc Furnace	employee	New	1,924.11	10	\$201.98	0%	0%	-\$0.20	0.00	0.00	7th Power Plan
Mining and Extraction	Process	Paper: Premium Control Large Material	employee	New	2,001.86	10	\$1,001.45	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Mining and Extraction	Process	Paper: Efficient Pulp Screen	employee	New	1,603.43	10	\$329.88	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Mining and Extraction	Process	Kraft: Effluent Treatment System	employee	New	1,603.43	10	\$135.24	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Mining and Extraction	Motors	Kraft: Efficient Agitator	employee	New	21,019.82	10	\$2,031.81	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Mining and Extraction	Process	Mech Pulp: Premium Process	employee	New	17.95	5	\$2.31	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Mining and Extraction	Motors	Mech Pulp: Refiner Plate Improvement	employee	New	180.11	1	\$7.75	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Mining and Extraction	Cooling	Transformer - High Efficiency	employee	New	153.71	10	\$891.98	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Mining and Extraction	Heating	Transformer - High Efficiency	employee	New	720.90	10	\$891.98	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Mining and Extraction	Ventilation	Transformer - High Efficiency	employee	New	14.84	10	\$891.98	15%	15%	\$0.02	0.00	0.00	7th Power Plan

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Mining and Extraction	Interior Lighting	Transformer - High Efficiency	employee	New	150.84	10	\$891.98	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Mining and Extraction	Exterior Lighting	Transformer - High Efficiency	employee	New	33.43	10	\$891.98	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Mining and Extraction	Motors	Transformer - High Efficiency	employee	New	5,764.99	10	\$891.98	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Mining and Extraction	Process	Transformer - High Efficiency	employee	New	481.03	10	\$891.98	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Mining and Extraction	Miscellaneous	Transformer - High Efficiency	employee	New	93.45	10	\$891.98	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Mining and Extraction	Cooling	Strategic Energy Management	employee	New	436.96	3	\$5,478.28	0%	0%	\$0.08	0.00	0.00	AEG Research
Mining and Extraction	Heating	Strategic Energy Management	employee	New	2,075.29	3	\$5,478.28	0%	0%	\$0.08	0.00	0.00	AEG Research
Mining and Extraction	Ventilation	Strategic Energy Management	employee	New	42.72	3	\$5,478.28	0%	0%	\$0.08	0.00	0.00	AEG Research
Mining and Extraction	Interior Lighting	Strategic Energy Management	employee	New	434.24	3	\$5,478.28	0%	0%	\$0.08	0.00	0.00	AEG Research
Mining and Extraction	Exterior Lighting	Strategic Energy Management	employee	New	96.57	3	\$5,478.28	0%	0%	\$0.08	0.00	0.00	AEG Research
Mining and Extraction	Motors	Strategic Energy Management	employee	New	16,654.39	3	\$5,478.28	0%	0%	\$0.08	0.00	0.00	AEG Research
Mining and Extraction	Process	Strategic Energy Management	employee	New	1,389.63	3	\$5,478.28	0%	0%	\$0.08	0.00	0.00	AEG Research
Mining and Extraction	Miscellaneous	Strategic Energy Management	employee	New	269.96	3	\$5,478.28	0%	0%	\$0.08	0.00	0.00	AEG Research
Mining and Extraction	Interior Lighting	Commissioning	employee	New	501.04	3	\$10,599.03	10%	40%	\$0.16	0.12	0.19	AEG Research
Mining and Extraction	Exterior Lighting	Commissioning	employee	New	111.43	3	\$10,599.03	10%	40%	\$0.16	0.03	0.05	AEG Research
Mining and Extraction	Motors	Commissioning	employee	New	19,216.62	3	\$10,599.03	10%	40%	\$0.16	4.89	5.04	AEG Research
Mining and Extraction	Process	Commissioning	employee	New	1,603.43	3	\$10,599.03	10%	40%	\$0.16	0.40	0.40	AEG Research
Mining and Extraction	Miscellaneous	Commissioning	employee	New	311.50	3	\$10,599.03	10%	40%	\$0.16	0.10	0.06	AEG Research
Mining and Extraction	Interior Lighting	Retrocommissioning	employee	New	502.81	3	\$6,728.47	0%	0%	\$0.10	0.00	0.00	AEG Research

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Mining and Extraction	Exterior Lighting	Retrocommissioning	employee	New	111.43	3	\$6,728.47	0%	0%	\$0.10	0.00	0.00	AEG Research
Mining and Extraction	Motors	Retrocommissioning	employee	New	19,216.62	3	\$6,728.47	0%	0%	\$0.10	0.00	0.00	AEG Research
Mining and Extraction	Process	Retrocommissioning	employee	New	1,603.43	3	\$6,728.47	0%	0%	\$0.10	0.00	0.00	AEG Research
Mining and Extraction	Miscellaneous	Retrocommissioning	employee	New	311.50	3	\$6,728.47	0%	0%	\$0.10	0.00	0.00	AEG Research
Mining and Extraction	Motors	Municipal Sewage Treatment	employee	New	3,753.46	12	\$2,089.55	0%	0%	\$0.06	0.00	0.00	7th Power Plan
Mining and Extraction	Motors	Municipal Water Supply Treatment	employee	New	0.00	12	\$0.00	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Food Mfg	Cooling	Insulation - Ceiling	sqft	Existing	0.12	45	\$1.28	15%	25%	\$0.14	7.13	7.68	Building Energy Simulation Tool
Food Mfg	Heating	Insulation - Ceiling	sqft	Existing	0.54	45	\$1.28	15%	25%	\$0.14	34.99	36.11	Building Energy Simulation Tool
Food Mfg	Ventilation	Insulation - Ceiling	sqft	Existing	0.02	45	\$1.28	15%	25%	\$0.14	4.91	5.87	Building Energy Simulation Tool
Food Mfg	Cooling	Insulation - Ducting	sqft	Existing	0.05	20	\$0.84	15%	25%	\$1.04	2.60	2.88	Building Energy Simulation Tool
Food Mfg	Heating	Insulation - Ducting	sqft	Existing	0.02	20	\$0.84	15%	25%	\$1.04	1.44	1.51	Building Energy Simulation Tool
Food Mfg	Ventilation	Insulation - Ducting	sqft	Existing	0.00	20	\$0.84	15%	25%	\$1.04	0.20	0.25	Building Energy Simulation Tool
Food Mfg	Cooling	Insulation - Wall Cavity	sqft	Existing	0.00	45	\$0.15	45%	50%	\$0.02	0.06	0.06	Building Energy Simulation Tool
Food Mfg	Heating	Insulation - Wall Cavity	sqft	Existing	0.76	45	\$0.15	45%	50%	\$0.02	25.19	25.27	Building Energy Simulation Tool
Food Mfg	Ventilation	Insulation - Wall Cavity	sqft	Existing	0.02	45	\$0.15	45%	50%	\$0.02	3.29	3.92	Building Energy Simulation Tool
Food Mfg	Cooling	HVAC - Duct Repair and Sealing	sqft	Existing	0.02	18	\$0.00	15%	25%	\$0.00	0.95	1.00	Building Energy Simulation Tool
Food Mfg	Heating	HVAC - Duct Repair and Sealing	sqft	Existing	0.05	18	\$0.00	15%	25%	\$0.00	3.55	3.56	Building Energy Simulation Tool
Food Mfg	Ventilation	HVAC - Duct Repair and Sealing	sqft	Existing	0.00	18	\$0.00	15%	25%	\$0.00	0.46	0.55	Building Energy Simulation Tool
Food Mfg	Cooling	Chiller - Chilled Water Reset	sqft	Existing	0.05	10	\$0.01	15%	45%	\$0.03	2.36	2.57	AEG-BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Food Mfg	Cooling	Chiller - Chilled Water Variable-Flow System	sqft	Existing	0.25	15	\$0.50	15%	60%	\$0.20	18.54	20.96	AEG-BEST
Food Mfg	Cooling	Chiller - Variable Speed Fans	sqft	Existing	0.09	15	\$0.03	15%	75%	\$0.03	9.63	10.46	New Jersey TRM
Food Mfg	Cooling	HVAC - Economizer	sqft	Existing	0.50	10	\$0.25	18%	30%	\$0.06	9.42	10.45	AEG-BEST
Food Mfg	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.25	15%	35%	\$10.43	1.43	1.86	7th Power Plan
Food Mfg	Cooling	Destratification Fans (HVLS)	sqft	Existing	0.16	15	\$0.63	15%	50%	\$0.04	35.57	38.63	AEG Research
Food Mfg	Heating	Destratification Fans (HVLS)	sqft	Existing	1.39	15	\$0.63	15%	50%	\$0.04	346.51	349.54	AEG Research
Food Mfg	Cooling	RTU - Maintenance	sqft	Existing	0.08	3	\$0.07	15%	75%	\$0.27	17.47	20.24	AEG Research
Food Mfg	Cooling	Thermostat - WiFi/Interactive	sqft	Existing	0.28	5	\$0.66	5%	15%	\$0.09	16.39	17.86	7th Power Plan
Food Mfg	Heating	Thermostat - WiFi/Interactive	sqft	Existing	1.27	5	\$0.66	5%	15%	\$0.09	82.13	85.09	7th Power Plan
Food Mfg	Ventilation	Thermostat - WiFi/Interactive	sqft	Existing	0.04	5	\$0.66	5%	15%	\$0.09	11.53	13.83	7th Power Plan
Food Mfg	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.40	15	\$0.35	7%	33%	\$0.07	162.69	205.51	7th Power Plan
Food Mfg	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.54	15	\$0.58	7%	33%	\$0.09	215.83	281.13	7th Power Plan
Food Mfg	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	Existing	0.02	15	\$0.00	1%	2%	\$0.01	0.82	1.20	7th Power Plan
Food Mfg	Interior Lighting	Interior Lighting - Timers and Timers	sqft	Existing	0.00	8	\$0.00	7%	7%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Food Mfg	Interior Lighting	Interior Lighting - Skylights	sqft	Existing	0.00	15	\$1.01	15%	23%	\$0.00	0.00	0.00	AEG Research
Food Mfg	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	sqft	Existing	0.03	16	\$1.81	5%	40%	\$4.03	23.89	38.64	7th Power Plan
Food Mfg	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	Existing	0.04	11	\$0.00	15%	50%	\$0.01	27.17	38.83	Illinois TRM
Food Mfg	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	sqft	Existing	0.05	8	\$0.03	15%	25%	\$0.08	32.71	50.43	7th Power Plan
Food Mfg	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	Existing	0.03	8	\$0.02	33%	60%	\$0.08	45.41	72.08	Pacific Gas and Electric Research
Food Mfg	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	Existing	0.03	7	\$1.19	15%	30%	\$4.46	28.25	47.61	AEG Research

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Food Mfg	Process	Process - Conductivity Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Food Mfg	Process	Process - Timers and Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Food Mfg	Motors	Process - Timers and Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Food Mfg	Process	Refrigeration - Floating Head Pressure	employee	Existing	922.02	15	\$905.96	20%	50%	\$0.11	252.16	254.25	RTF Workbook
Food Mfg	Process	Refrigeration - System Optimization	employee	Existing	1,492.61	15	\$637.96	20%	50%	\$0.05	409.40	409.40	AEG Research
Food Mfg	Motors	Pumping System - Equipment Upgrade	employee	Existing	1,285.76	10	\$188.73	9%	38%	\$0.02	334.60	343.32	7th Power Plan
Food Mfg	Motors	Pumping System - System Optimization	employee	Existing	951.19	12	\$287.62	9%	38%	\$0.03	240.07	247.31	UNIDO Study on Industrial Energy Efficiency
Food Mfg	Motors	Pumping System - Variable Speed Drive	employee	Existing	940.06	10	\$299.23	9%	38%	\$0.04	236.38	245.42	UNIDO Study on Industrial Energy Efficiency
Food Mfg	Motors	Fan System - Equipment Upgrade	employee	Existing	1,191.26	10	\$118.34	9%	38%	\$0.02	303.41	306.69	UNIDO Study on Industrial Energy Efficiency
Food Mfg	Motors	Fan System - Flow Optimization	employee	Existing	1,399.42	10	\$195.80	9%	38%	\$0.02	355.63	361.13	UNIDO Study on Industrial Energy Efficiency
Food Mfg	Motors	Fan System - Variable Speed Drive	employee	Existing	2,035.54	10	\$985.25	9%	38%	\$0.06	507.32	536.19	UNIDO Study on Industrial Energy Efficiency
Food Mfg	Motors	Compressed Air - Equipment Upgrade	employee	Existing	1,486.01	10	\$108.13	17%	50%	\$0.01	455.54	455.54	7th Power Plan
Food Mfg	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	Existing	0.00	15	\$0.00	16%	38%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Food Mfg	Motors	Compressed Air - Refrigerated Cycling Dryers	employee	Existing	0.00	10	\$0.00	16%	30%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Food Mfg	Motors	Compressed Air - System Controls	employee	Existing	322.82	10	\$77.31	9%	38%	\$0.03	83.50	87.02	UNIDO Study on Industrial Energy Efficiency
Food Mfg	Motors	Compressed Air - Leak Management Program	employee	Existing	840.96	10	\$77.72	18%	75%	\$0.01	440.88	443.90	7th Power Plan
Food Mfg	Motors	Compressed Air - Variable Speed Drive	employee	Existing	590.15	15	\$474.00	26%	45%	\$0.08	100.85	107.50	UNIDO Study on Industrial Energy Efficiency
Food Mfg	Motors	Compressed Air - Low Pressure-Drop Filters	employee	Existing	19.67	10	\$7.31	17%	50%	\$0.05	5.88	6.27	Illinois TRM
Food Mfg	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	Existing	121.75	10	\$23.70	17%	50%	\$0.03	36.82	38.17	UNIDO Study on Industrial Energy Efficiency

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Food Mfg	Motors	Compressed Air - Outside Air Intake	employee	Existing	0.00	20	\$0.00	17%	50%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Food Mfg	Motors	Compressed Air - Receiver Capacity Addition	employee	Existing	120.41	15	\$65.18	17%	50%	\$0.06	36.29	37.96	UNIDO Study on Industrial Energy Efficiency
Food Mfg	Motors	Material Handling - Variable Speed Drive	employee	Existing	3,663.36	10	\$1,330.28	25%	45%	\$0.05	645.21	672.41	7th Power Plan
Food Mfg	Motors	Motors - Green Rewind (<100 HP)	employee	Existing	74.69	10	\$33.07	10%	50%	\$0.06	130.77	137.91	7th Power Plan
Food Mfg	Motors	Motors - Green Rewind (100 HP+)	employee	Existing	42.39	10	\$11.74	6%	25%	\$0.04	35.54	36.88	7th Power Plan
Food Mfg	Motors	Switch from Belt Drive to Direct Drive	employee	Existing	647.05	12	\$145.15	16%	25%	\$0.03	272.81	279.71	2015-mdu-irp-report---volume-iii.pdf
Food Mfg	Motors	Motors - Synchronous Belts	employee	Existing	170.30	10	\$43.67	16%	36%	\$0.03	154.11	160.82	7th Power Plan
Food Mfg	Miscellaneous	Agriculture - Engine Block Timer	employee	Existing	2,979.41	3	\$36.75	0%	0%	\$0.00	0.00	0.00	Vermont TRM
Food Mfg	Motors	Agriculture - Live Stock Waterer	employee	Existing	3,027.97	10	\$1,662.06	0%	0%	\$0.07	0.00	0.00	Ontario Power TRM
Food Mfg	Process	Dairy - Milk Precoolers	employee	Existing	6,146.79	15	\$2,882.85	0%	0%	\$0.05	0.00	0.00	Ontario Power TRM
Food Mfg	Process	Clean Room: Change Filter Strategy	employee	Existing	95.24	15	\$0.70	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Food Mfg	Process	Clean Room: Chiller Optimize	employee	Existing	1,843.73	15	\$170.71	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Food Mfg	Process	Clean Room: Clean Room HVAC	employee	Existing	1,119.46	15	\$206.06	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Food Mfg	Process	Elec Chip Fab: Solidstate Chiller	employee	Existing	1,106.42	15	\$647.24	0%	0%	\$0.06	0.00	0.00	7th Power Plan
Food Mfg	Process	Elec Chip Fab: Eliminate Exhaust	employee	Existing	11.90	15	\$2.53	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Food Mfg	Process	Elec Chip Fab: Exhaust Injector	employee	Existing	23.53	15	\$12.19	0%	0%	\$0.05	0.00	0.00	7th Power Plan
Food Mfg	Process	Elec Chip Fab: Reduce Gas Pressure	employee	Existing	23.81	15	\$0.24	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Food Mfg	Motors	Panel: Hydraulic Press	employee	Existing	5,531.67	10	\$1,329.48	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Food Mfg	Motors	Wood: Replace Pneumatic Conveyor	employee	Existing	6,039.49	10	\$99.57	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Food Mfg	Process	Metal: New Arc Furnace	employee	Existing	3,326.32	10	\$349.17	0%	0%	-\$0.09	0.00	0.00	7th Power Plan
Food Mfg	Process	Paper: Premium Control Large Material	employee	Existing	1,228.59	10	\$626.41	0%	0%	\$0.07	0.00	0.00	7th Power Plan

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Food Mfg	Process	Paper: Efficient Pulp Screen	employee	Existing	1,002.94	10	\$206.34	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Food Mfg	Process	Kraft: Effluent Treatment System	employee	Existing	1,002.94	10	\$84.59	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Food Mfg	Motors	Kraft: Efficient Agitator	employee	Existing	10,215.09	10	\$992.10	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Food Mfg	Process	Mech Pulp: Premium Process	employee	Existing	11.10	5	\$1.45	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Food Mfg	Motors	Mech Pulp: Refiner Plate Improvement	employee	Existing	84.78	1	\$3.78	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Food Mfg	Cooling	Transformer - High Efficiency	employee	Existing	93.22	10	\$217.30	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Food Mfg	Heating	Transformer - High Efficiency	employee	Existing	417.43	10	\$217.30	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Food Mfg	Ventilation	Transformer - High Efficiency	employee	Existing	11.77	10	\$217.30	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Food Mfg	Interior Lighting	Transformer - High Efficiency	employee	Existing	60.57	10	\$217.30	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Food Mfg	Exterior Lighting	Transformer - High Efficiency	employee	Existing	13.08	10	\$217.30	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Food Mfg	Motors	Transformer - High Efficiency	employee	Existing	614.03	10	\$217.30	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Food Mfg	Process	Transformer - High Efficiency	employee	Existing	492.03	10	\$217.30	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Food Mfg	Miscellaneous	Transformer - High Efficiency	employee	Existing	112.77	10	\$217.30	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Food Mfg	Cooling	Strategic Energy Management	employee	Existing	257.70	3	\$1,334.61	0%	18%	\$0.08	6.81	7.56	AEG Research
Food Mfg	Heating	Strategic Energy Management	employee	Existing	1,193.41	3	\$1,334.61	0%	18%	\$0.08	35.73	37.39	AEG Research
Food Mfg	Ventilation	Strategic Energy Management	employee	Existing	33.68	3	\$1,334.61	0%	18%	\$0.08	5.02	6.08	AEG Research
Food Mfg	Interior Lighting	Strategic Energy Management	employee	Existing	172.68	3	\$1,334.61	0%	18%	\$0.08	20.95	30.22	AEG Research
Food Mfg	Exterior Lighting	Strategic Energy Management	employee	Existing	37.54	3	\$1,334.61	0%	18%	\$0.08	4.68	6.76	AEG Research
Food Mfg	Motors	Strategic Energy Management	employee	Existing	1,760.13	3	\$1,334.61	0%	18%	\$0.08	259.80	274.68	AEG Research
Food Mfg	Process	Strategic Energy Management	employee	Existing	1,410.19	3	\$1,334.61	0%	18%	\$0.08	213.67	217.02	AEG Research

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Food Mfg	Miscellaneous	Strategic Energy Management	employee	Existing	322.94	3	\$1,334.61	0%	18%	\$0.08	62.28	48.73	AEG Research
Food Mfg	Interior Lighting	Commissioning	employee	Existing	198.47	3	\$1,971.37	0%	0%	\$0.15	0.00	0.00	AEG Research
Food Mfg	Exterior Lighting	Commissioning	employee	Existing	43.15	3	\$1,971.37	0%	0%	\$0.15	0.00	0.00	AEG Research
Food Mfg	Motors	Commissioning	employee	Existing	2,021.87	3	\$1,971.37	0%	0%	\$0.15	0.00	0.00	AEG Research
Food Mfg	Process	Commissioning	employee	Existing	1,619.73	3	\$1,971.37	0%	0%	\$0.15	0.00	0.00	AEG Research
Food Mfg	Miscellaneous	Commissioning	employee	Existing	370.75	3	\$1,971.37	0%	0%	\$0.15	0.00	0.00	AEG Research
Food Mfg	Interior Lighting	Retrocommissioning	employee	Existing	201.90	3	\$1,251.46	10%	37%	\$0.09	37.08	52.88	AEG Research
Food Mfg	Exterior Lighting	Retrocommissioning	employee	Existing	43.60	3	\$1,251.46	10%	37%	\$0.09	8.21	11.77	AEG Research
Food Mfg	Motors	Retrocommissioning	employee	Existing	2,046.76	3	\$1,251.46	10%	37%	\$0.09	455.86	478.38	AEG Research
Food Mfg	Process	Retrocommissioning	employee	Existing	1,640.11	3	\$1,251.46	10%	37%	\$0.09	374.91	378.00	AEG Research
Food Mfg	Miscellaneous	Retrocommissioning	employee	Existing	375.89	3	\$1,251.46	10%	37%	\$0.09	109.29	84.93	AEG Research
Food Mfg	Motors	Municipal Sewage Treatment	employee	Existing	165.86	12	\$94.88	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Food Mfg	Motors	Municipal Water Supply Treatment	employee	Existing	0.00	12	\$0.00	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Food Mfg	Cooling	Insulation - Ceiling	sqft	New	0.11	45	\$1.28	15%	25%	\$0.16	2.48	2.53	Building Energy Simulation Tool
Food Mfg	Heating	Insulation - Ceiling	sqft	New	0.52	45	\$1.28	15%	25%	\$0.16	12.30	12.31	Building Energy Simulation Tool
Food Mfg	Ventilation	Insulation - Ceiling	sqft	New	0.01	45	\$1.28	15%	25%	\$0.16	1.49	1.65	Building Energy Simulation Tool
Food Mfg	Cooling	Insulation - Ducting	sqft	New	0.04	20	\$0.84	15%	25%	\$1.11	0.95	0.97	Building Energy Simulation Tool
Food Mfg	Heating	Insulation - Ducting	sqft	New	0.02	20	\$0.84	15%	25%	\$1.11	0.52	0.52	Building Energy Simulation Tool
Food Mfg	Ventilation	Insulation - Ducting	sqft	New	0.00	20	\$0.84	15%	25%	\$1.11	0.06	0.07	Building Energy Simulation Tool
Food Mfg	Cooling	Insulation - Wall Cavity	sqft	New	0.00	45	\$0.15	45%	50%	\$0.02	0.02	0.02	Building Energy Simulation Tool
Food Mfg	Heating	Insulation - Wall Cavity	sqft	New	0.71	45	\$0.15	45%	50%	\$0.02	8.44	8.45	Building Energy Simulation Tool
Food Mfg	Ventilation	Insulation - Wall Cavity	sqft	New	0.01	45	\$0.15	45%	50%	\$0.02	1.00	1.10	Building Energy Simulation Tool

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Food Mfg	Cooling	HVAC - Duct Repair and Sealing	sqft	New	0.01	18	\$0.00	15%	25%	\$0.00	0.29	0.30	Building Energy Simulation Tool
Food Mfg	Heating	HVAC - Duct Repair and Sealing	sqft	New	0.05	18	\$0.00	15%	25%	\$0.00	1.10	1.10	Building Energy Simulation Tool
Food Mfg	Ventilation	HVAC - Duct Repair and Sealing	sqft	New	0.00	18	\$0.00	15%	25%	\$0.00	0.13	0.14	Building Energy Simulation Tool
Food Mfg	Cooling	Chiller - Chilled Water Reset	sqft	New	0.04	10	\$0.01	15%	45%	\$0.03	0.37	0.39	AEG-BEST
Food Mfg	Cooling	Chiller - Chilled Water Variable-Flow System	sqft	New	0.21	15	\$0.50	15%	60%	\$0.24	3.75	3.92	AEG-BEST
Food Mfg	Cooling	Chiller - Variable Speed Fans	sqft	New	0.08	15	\$0.03	15%	75%	\$0.04	1.87	1.94	New Jersey TRM
Food Mfg	Cooling	HVAC - Economizer	sqft	New	0.45	10	\$0.25	18%	30%	\$0.07	1.64	1.72	AEG-BEST
Food Mfg	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.25	15%	35%	\$12.47	0.28	0.33	7th Power Plan
Food Mfg	Cooling	Destratification Fans (HVLS)	sqft	New	0.14	15	\$0.63	15%	50%	\$0.05	7.67	7.98	AEG Research
Food Mfg	Heating	Destratification Fans (HVLS)	sqft	New	1.30	15	\$0.63	15%	50%	\$0.05	74.44	74.69	AEG Research
Food Mfg	Cooling	RTU - Maintenance	sqft	New	0.08	3	\$0.07	15%	75%	\$0.28	1.17	1.28	AEG Research
Food Mfg	Cooling	Thermostat - WiFi/Interactive	sqft	New	0.26	5	\$0.66	5%	15%	\$0.09	0.75	0.80	7th Power Plan
Food Mfg	Heating	Thermostat - WiFi/Interactive	sqft	New	1.22	5	\$0.66	5%	15%	\$0.09	3.74	3.81	7th Power Plan
Food Mfg	Ventilation	Thermostat - WiFi/Interactive	sqft	New	0.03	5	\$0.66	5%	15%	\$0.09	0.45	0.55	7th Power Plan
Food Mfg	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.36	15	\$0.35	22%	41%	\$0.07	55.46	68.11	7th Power Plan
Food Mfg	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.49	15	\$0.58	22%	41%	\$0.09	75.39	93.54	7th Power Plan
Food Mfg	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	New	0.02	15	\$0.00	1%	2%	\$0.01	0.16	0.22	7th Power Plan
Food Mfg	Interior Lighting	Interior Lighting - Timeclocks and Timers	sqft	New	0.00	8	\$0.00	7%	7%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Food Mfg	Interior Lighting	Interior Lighting - Skylights	sqft	New	0.00	15	\$1.01	18%	24%	\$0.00	0.00	0.00	AEG Research
Food Mfg	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	sqft	New	0.03	16	\$1.81	5%	40%	\$4.03	5.91	8.08	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Food Mfg	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	New	0.03	11	\$0.00	15%	50%	\$0.01	5.28	7.15	Illinois TRM
Food Mfg	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	sqft	New	0.04	8	\$0.03	15%	25%	\$0.08	5.02	7.57	7th Power Plan
Food Mfg	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	New	0.02	8	\$0.02	44%	60%	\$0.08	4.26	6.42	Pacific Gas and Electric Research
Food Mfg	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	New	0.03	7	\$1.19	15%	30%	\$4.40	4.30	6.57	AEG Research
Food Mfg	Process	Process - Conductivity Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Food Mfg	Process	Process - Timers and Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Food Mfg	Motors	Process - Timers and Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Food Mfg	Process	Refrigeration - Floating Head Pressure	employee	New	927.22	15	\$640.26	20%	50%	\$0.08	57.98	58.00	RTF Workbook
Food Mfg	Process	Refrigeration - System Optimization	employee	New	1,492.61	15	\$223.89	20%	50%	\$0.02	93.26	93.26	AEG Research
Food Mfg	Motors	Pumping System - Equipment Upgrade	employee	New	1,306.35	10	\$188.73	9%	38%	\$0.02	63.91	64.03	7th Power Plan
Food Mfg	Motors	Pumping System - System Optimization	employee	New	972.81	12	\$287.62	9%	38%	\$0.03	64.32	64.24	UNIDO Study on Industrial Energy Efficiency
Food Mfg	Motors	Pumping System - Variable Speed Drive	employee	New	966.75	10	\$299.23	9%	38%	\$0.04	57.37	57.33	UNIDO Study on Industrial Energy Efficiency
Food Mfg	Motors	Fan System - Equipment Upgrade	employee	New	1,203.33	10	\$118.34	9%	38%	\$0.02	71.26	71.15	UNIDO Study on Industrial Energy Efficiency
Food Mfg	Motors	Fan System - Flow Optimization	employee	New	1,417.37	10	\$195.80	9%	38%	\$0.02	83.95	83.85	UNIDO Study on Industrial Energy Efficiency
Food Mfg	Motors	Fan System - Variable Speed Drive	employee	New	2,115.24	10	\$985.25	9%	38%	\$0.06	125.66	125.73	UNIDO Study on Industrial Energy Efficiency
Food Mfg	Motors	Compressed Air - Equipment Upgrade	employee	New	1,486.01	10	\$108.13	17%	50%	\$0.01	84.60	84.60	7th Power Plan
Food Mfg	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	New	0.00	15	\$0.00	16%	38%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Food Mfg	Motors	Compressed Air - Refrigerated Cycling Dryers	employee	New	0.00	10	\$0.00	16%	30%	\$0.00	0.00	0.00	Michigan Energy Measures Database

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Food Mfg	Motors	Compressed Air - System Controls	employee	New	330.82	10	\$77.31	9%	38%	\$0.03	16.20	16.27	UNIDO Study on Industrial Energy Efficiency
Food Mfg	Motors	Compressed Air - Leak Management Program	employee	New	845.26	10	\$77.72	18%	75%	\$0.01	82.57	82.56	7th Power Plan
Food Mfg	Motors	Compressed Air - Variable Speed Drive	employee	New	611.84	15	\$474.00	26%	45%	\$0.08	24.53	24.65	UNIDO Study on Industrial Energy Efficiency
Food Mfg	Motors	Compressed Air - Low Pressure-Drop Filters	employee	New	20.40	10	\$7.31	17%	50%	\$0.05	1.17	1.18	Illinois TRM
Food Mfg	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	New	124.46	10	\$23.70	17%	50%	\$0.03	7.11	7.13	UNIDO Study on Industrial Energy Efficiency
Food Mfg	Motors	Compressed Air - Outside Air Intake	employee	New	0.00	20	\$0.00	17%	50%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Food Mfg	Motors	Compressed Air - Receiver Capacity Addition	employee	New	123.74	15	\$65.18	17%	50%	\$0.06	8.68	8.70	UNIDO Study on Industrial Energy Efficiency
Food Mfg	Motors	Material Handling - Variable Speed Drive	employee	New	3,775.43	10	\$1,330.28	25%	45%	\$0.05	157.26	157.19	7th Power Plan
Food Mfg	Motors	Motors - Green Rewind (<100 HP)	employee	New	77.52	10	\$33.07	10%	50%	\$0.06	32.31	32.32	7th Power Plan
Food Mfg	Motors	Motors - Green Rewind (100 HP+)	employee	New	43.58	10	\$11.74	6%	25%	\$0.04	8.62	8.61	7th Power Plan
Food Mfg	Motors	Switch from Belt Drive to Direct Drive	employee	New	659.95	12	\$145.15	16%	25%	\$0.03	72.72	72.59	2015-mdi-irp-report---volume-iii.pdf
Food Mfg	Motors	Motors - Synchronous Belts	employee	New	174.70	10	\$43.67	16%	36%	\$0.03	29.95	30.07	7th Power Plan
Food Mfg	Miscellaneous	Agriculture - Engine Block Timer	employee	New	2,979.41	3	\$36.75	0%	0%	\$0.00	0.00	0.00	Vermont TRM
Food Mfg	Motors	Agriculture - Live Stock Waterer	employee	New	3,161.35	10	\$1,662.06	0%	0%	\$0.07	0.00	0.00	Ontario Power TRM
Food Mfg	Process	Dairy - Milk Precoolers	employee	New	6,181.45	15	\$2,882.85	0%	0%	\$0.05	0.00	0.00	Ontario Power TRM
Food Mfg	Process	Clean Room: Change Filter Strategy	employee	New	95.24	15	\$0.70	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Food Mfg	Process	Clean Room: Chiller Optimize	employee	New	1,843.73	15	\$170.71	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Food Mfg	Process	Clean Room: Clean Room HVAC	employee	New	1,112.66	15	\$206.06	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Food Mfg	Process	Elec Chip Fab: Solidstate Chiller	employee	New	1,112.66	15	\$647.24	0%	0%	\$0.06	0.00	0.00	7th Power Plan
Food Mfg	Process	Elec Chip Fab: Eliminate Exhaust	employee	New	11.83	15	\$2.53	0%	0%	\$0.02	0.00	0.00	7th Power Plan

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Food Mfg	Process	Elec Chip Fab: Exhaust Injector	employee	New	23.66	15	\$12.19	0%	0%	\$0.05	0.00	0.00	7th Power Plan
Food Mfg	Process	Elec Chip Fab: Reduce Gas Pressure	employee	New	23.81	15	\$0.24	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Food Mfg	Motors	Panel: Hydraulic Press	employee	New	5,674.42	10	\$1,329.48	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Food Mfg	Motors	Wood: Replace Pneumatic Conveyor	employee	New	6,039.49	10	\$99.57	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Food Mfg	Process	Metal: New Arc Furnace	employee	New	3,306.13	10	\$349.17	0%	0%	-\$0.09	0.00	0.00	7th Power Plan
Food Mfg	Process	Paper: Premium Control Large Material	employee	New	1,239.84	10	\$626.41	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Food Mfg	Process	Paper: Efficient Pulp Screen	employee	New	996.85	10	\$206.34	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Food Mfg	Process	Kraft: Effluent Treatment System	employee	New	996.85	10	\$84.59	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Food Mfg	Motors	Kraft: Efficient Agitator	employee	New	10,318.63	10	\$992.10	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Food Mfg	Process	Mech Pulp: Premium Process	employee	New	11.12	5	\$1.45	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Food Mfg	Motors	Mech Pulp: Refiner Plate Improvement	employee	New	88.51	1	\$3.78	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Food Mfg	Cooling	Transformer - High Efficiency	employee	New	85.79	10	\$213.67	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Food Mfg	Heating	Transformer - High Efficiency	employee	New	402.36	10	\$213.67	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Food Mfg	Ventilation	Transformer - High Efficiency	employee	New	8.28	10	\$213.67	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Food Mfg	Interior Lighting	Transformer - High Efficiency	employee	New	55.29	10	\$213.67	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Food Mfg	Exterior Lighting	Transformer - High Efficiency	employee	New	12.25	10	\$213.67	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Food Mfg	Motors	Transformer - High Efficiency	employee	New	641.08	10	\$213.67	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Food Mfg	Process	Transformer - High Efficiency	employee	New	496.54	10	\$213.67	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Food Mfg	Miscellaneous	Transformer - High Efficiency	employee	New	106.81	10	\$213.67	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Food Mfg	Cooling	Strategic Energy Management	employee	New	243.88	3	\$1,312.28	0%	18%	\$0.08	0.16	0.17	AEG Research
Food Mfg	Heating	Strategic Energy Management	employee	New	1,158.28	3	\$1,312.28	0%	18%	\$0.08	0.82	0.84	AEG Research

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Food Mfg	Ventilation	Strategic Energy Management	employee	New	23.85	3	\$1,312.28	0%	18%	\$0.08	0.10	0.12	AEG Research
Food Mfg	Interior Lighting	Strategic Energy Management	employee	New	159.16	3	\$1,312.28	0%	18%	\$0.08	0.51	0.84	AEG Research
Food Mfg	Exterior Lighting	Strategic Energy Management	employee	New	35.40	3	\$1,312.28	0%	18%	\$0.08	0.12	0.20	AEG Research
Food Mfg	Motors	Strategic Energy Management	employee	New	1,852.00	3	\$1,312.28	0%	18%	\$0.08	6.49	6.69	AEG Research
Food Mfg	Process	Strategic Energy Management	employee	New	1,434.44	3	\$1,312.28	0%	18%	\$0.08	5.01	5.03	AEG Research
Food Mfg	Miscellaneous	Strategic Energy Management	employee	New	308.57	3	\$1,312.28	0%	18%	\$0.08	1.33	0.85	AEG Research
Food Mfg	Interior Lighting	Commissioning	employee	New	183.48	3	\$1,983.66	10%	37%	\$0.15	0.89	1.45	AEG Research
Food Mfg	Exterior Lighting	Commissioning	employee	New	40.81	3	\$1,983.66	10%	37%	\$0.15	0.20	0.34	AEG Research
Food Mfg	Motors	Commissioning	employee	New	2,135.05	3	\$1,983.66	10%	37%	\$0.15	11.23	11.57	AEG Research
Food Mfg	Process	Commissioning	employee	New	1,653.67	3	\$1,983.66	10%	37%	\$0.15	8.66	8.70	AEG Research
Food Mfg	Miscellaneous	Commissioning	employee	New	355.73	3	\$1,983.66	10%	37%	\$0.15	2.30	1.47	AEG Research
Food Mfg	Interior Lighting	Retrocommissioning	employee	New	184.29	3	\$1,259.26	0%	0%	\$0.09	0.00	0.00	AEG Research
Food Mfg	Exterior Lighting	Retrocommissioning	employee	New	40.84	3	\$1,259.26	0%	0%	\$0.09	0.00	0.00	AEG Research
Food Mfg	Motors	Retrocommissioning	employee	New	2,136.93	3	\$1,259.26	0%	0%	\$0.09	0.00	0.00	AEG Research
Food Mfg	Process	Retrocommissioning	employee	New	1,655.12	3	\$1,259.26	0%	0%	\$0.09	0.00	0.00	AEG Research
Food Mfg	Miscellaneous	Retrocommissioning	employee	New	356.04	3	\$1,259.26	0%	0%	\$0.09	0.00	0.00	AEG Research
Food Mfg	Motors	Municipal Sewage Treatment	employee	New	172.14	12	\$94.88	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Food Mfg	Motors	Municipal Water Supply Treatment	employee	New	0.00	12	\$0.00	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Paper Mfg	Cooling	Insulation - Ceiling	sqft	Existing	0.12	45	\$1.28	15%	25%	\$0.14	0.00	0.00	Building Energy Simulation Tool
Paper Mfg	Heating	Insulation - Ceiling	sqft	Existing	0.54	45	\$1.28	15%	25%	\$0.14	0.01	0.01	Building Energy Simulation Tool
Paper Mfg	Ventilation	Insulation - Ceiling	sqft	Existing	0.02	45	\$1.28	15%	25%	\$0.14	0.00	0.00	Building Energy Simulation Tool
Paper Mfg	Cooling	Insulation - Ducting	sqft	Existing	0.05	20	\$0.84	15%	25%	\$1.04	0.00	0.00	Building Energy Simulation Tool

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Paper Mfg	Heating	Insulation - Ducting	sqft	Existing	0.02	20	\$0.84	15%	25%	\$1.04	0.00	0.00	Building Energy Simulation Tool
Paper Mfg	Ventilation	Insulation - Ducting	sqft	Existing	0.00	20	\$0.84	15%	25%	\$1.04	0.00	0.00	Building Energy Simulation Tool
Paper Mfg	Cooling	Insulation - Wall Cavity	sqft	Existing	0.00	45	\$0.15	45%	50%	\$0.02	0.00	0.00	Building Energy Simulation Tool
Paper Mfg	Heating	Insulation - Wall Cavity	sqft	Existing	0.76	45	\$0.15	45%	50%	\$0.02	0.01	0.01	Building Energy Simulation Tool
Paper Mfg	Ventilation	Insulation - Wall Cavity	sqft	Existing	0.02	45	\$0.15	45%	50%	\$0.02	0.00	0.00	Building Energy Simulation Tool
Paper Mfg	Cooling	HVAC - Duct Repair and Sealing	sqft	Existing	0.02	18	\$0.00	15%	25%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Paper Mfg	Heating	HVAC - Duct Repair and Sealing	sqft	Existing	0.05	18	\$0.00	15%	25%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Paper Mfg	Ventilation	HVAC - Duct Repair and Sealing	sqft	Existing	0.00	18	\$0.00	15%	25%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Paper Mfg	Cooling	Chiller - Chilled Water Reset	sqft	Existing	0.05	10	\$0.01	15%	45%	\$0.03	0.00	0.00	AEG-BEST
Paper Mfg	Cooling	Chiller - Chilled Water Variable-Flow System	sqft	Existing	0.25	15	\$0.50	15%	60%	\$0.20	0.00	0.00	AEG-BEST
Paper Mfg	Cooling	Chiller - Variable Speed Fans	sqft	Existing	0.09	15	\$0.03	15%	75%	\$0.03	0.00	0.00	New Jersey TRM
Paper Mfg	Cooling	HVAC - Economizer	sqft	Existing	0.00	10	\$0.25	18%	30%	\$32.34	0.00	0.00	AEG-BEST
Paper Mfg	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.25	15%	35%	\$10.43	0.00	0.00	7th Power Plan
Paper Mfg	Cooling	Destratification Fans (HVLS)	sqft	Existing	0.16	15	\$0.63	15%	50%	\$0.04	0.01	0.01	AEG Research
Paper Mfg	Heating	Destratification Fans (HVLS)	sqft	Existing	1.39	15	\$0.63	15%	50%	\$0.04	0.08	0.08	AEG Research
Paper Mfg	Cooling	RTU - Maintenance	sqft	Existing	0.08	3	\$0.07	15%	75%	\$0.27	0.00	0.00	AEG Research
Paper Mfg	Cooling	Thermostat - WiFi/Interactive	sqft	Existing	0.29	5	\$0.66	5%	15%	\$0.09	0.00	0.00	7th Power Plan
Paper Mfg	Heating	Thermostat - WiFi/Interactive	sqft	Existing	1.27	5	\$0.66	5%	15%	\$0.09	0.02	0.02	7th Power Plan
Paper Mfg	Ventilation	Thermostat - WiFi/Interactive	sqft	Existing	0.04	5	\$0.66	5%	15%	\$0.09	0.00	0.00	7th Power Plan
Paper Mfg	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.00	15	\$0.35	7%	33%	\$45.23	0.04	0.05	7th Power Plan
Paper Mfg	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.00	15	\$0.58	7%	33%	\$53.31	0.05	0.07	7th Power Plan

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Paper Mfg	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	Existing	0.02	15	\$0.00	1%	2%	\$0.01	0.00	0.00	7th Power Plan
Paper Mfg	Interior Lighting	Interior Lighting - Timeclocks and Timers	sqft	Existing	0.00	8	\$0.00	7%	7%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Paper Mfg	Interior Lighting	Interior Lighting - Skylights	sqft	Existing	0.00	15	\$1.01	15%	23%	\$0.00	0.00	0.00	AEG Research
Paper Mfg	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	sqft	Existing	0.04	16	\$1.81	5%	40%	\$4.03	0.01	0.01	7th Power Plan
Paper Mfg	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	Existing	0.04	11	\$0.00	15%	50%	\$0.01	0.01	0.01	Illinois TRM
Paper Mfg	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	sqft	Existing	0.05	8	\$0.03	15%	25%	\$0.08	0.01	0.01	7th Power Plan
Paper Mfg	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	Existing	0.03	8	\$0.02	33%	60%	\$0.08	0.01	0.02	Pacific Gas and Electric Research
Paper Mfg	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	Existing	0.03	7	\$1.19	15%	30%	\$4.46	0.01	0.01	AEG Research
Paper Mfg	Process	Process - Conductivity Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Paper Mfg	Process	Process - Timers and Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Paper Mfg	Motors	Process - Timers and Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Paper Mfg	Process	Refrigeration - Floating Head Pressure	employee	Existing	1.41	15	\$1.40	20%	50%	\$0.11	0.01	0.01	RTF Workbook
Paper Mfg	Process	Refrigeration - System Optimization	employee	Existing	2.26	15	\$0.99	20%	50%	\$0.05	0.01	0.01	AEG Research
Paper Mfg	Motors	Pumping System - Equipment Upgrade	employee	Existing	76.32	10	\$11.44	9%	38%	\$0.02	0.34	0.36	7th Power Plan
Paper Mfg	Motors	Pumping System - System Optimization	employee	Existing	56.30	12	\$17.43	9%	38%	\$0.04	0.24	0.26	UNIDO Study on Industrial Energy Efficiency
Paper Mfg	Motors	Pumping System - Variable Speed Drive	employee	Existing	55.51	10	\$18.13	9%	38%	\$0.04	0.24	0.25	UNIDO Study on Industrial Energy Efficiency
Paper Mfg	Motors	Fan System - Equipment Upgrade	employee	Existing	41.00	10	\$4.17	9%	38%	\$0.01	0.18	0.19	UNIDO Study on Industrial Energy Efficiency
Paper Mfg	Motors	Fan System - Flow Optimization	employee	Existing	48.23	10	\$6.90	9%	38%	\$0.02	0.21	0.22	UNIDO Study on Industrial Energy Efficiency
Paper Mfg	Motors	Fan System - Variable Speed Drive	employee	Existing	69.72	10	\$34.71	9%	38%	\$0.06	0.30	0.32	UNIDO Study on Industrial Energy Efficiency

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Paper Mfg	Motors	Compressed Air - Equipment Upgrade	employee	Existing	76.50	10	\$5.57	17%	50%	\$0.01	0.41	0.41	7th Power Plan
Paper Mfg	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	Existing	0.00	15	\$0.00	16%	38%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Paper Mfg	Motors	Compressed Air - Refrigerated Cycling Dryers	employee	Existing	0.00	10	\$0.00	16%	30%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Paper Mfg	Motors	Compressed Air - System Controls	employee	Existing	16.20	10	\$3.98	9%	38%	\$0.03	0.07	0.08	UNIDO Study on Industrial Energy Efficiency
Paper Mfg	Motors	Compressed Air - Leak Management Program	employee	Existing	43.22	10	\$4.00	18%	75%	\$0.01	0.39	0.40	7th Power Plan
Paper Mfg	Motors	Compressed Air - Variable Speed Drive	employee	Existing	29.54	15	\$24.40	26%	45%	\$0.08	0.09	0.09	UNIDO Study on Industrial Energy Efficiency
Paper Mfg	Motors	Compressed Air - Low Pressure-Drop Filters	employee	Existing	0.98	10	\$0.38	17%	50%	\$0.05	0.01	0.01	Illinois TRM
Paper Mfg	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	Existing	6.12	10	\$1.22	17%	50%	\$0.03	0.03	0.03	UNIDO Study on Industrial Energy Efficiency
Paper Mfg	Motors	Compressed Air - Outside Air Intake	employee	Existing	0.00	20	\$0.00	17%	50%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Paper Mfg	Motors	Compressed Air - Receiver Capacity Addition	employee	Existing	6.04	15	\$3.36	17%	50%	\$0.06	0.03	0.03	UNIDO Study on Industrial Energy Efficiency
Paper Mfg	Motors	Material Handling - Variable Speed Drive	employee	Existing	158.70	10	\$59.25	25%	45%	\$0.05	0.48	0.51	7th Power Plan
Paper Mfg	Motors	Motors - Green Rewind (<100 HP)	employee	Existing	3.17	10	\$1.45	10%	50%	\$0.06	0.09	0.10	7th Power Plan
Paper Mfg	Motors	Motors - Green Rewind (100 HP+)	employee	Existing	1.81	10	\$0.51	6%	25%	\$0.04	0.03	0.03	7th Power Plan
Paper Mfg	Motors	Switch from Belt Drive to Direct Drive	employee	Existing	27.63	12	\$6.35	16%	25%	\$0.03	0.20	0.21	2015-mdu-irp-report---volume-iii.pdf
Paper Mfg	Motors	Motors - Synchronous Belts	employee	Existing	7.26	10	\$1.91	16%	36%	\$0.03	0.11	0.12	7th Power Plan
Paper Mfg	Miscellaneous	Agriculture - Engine Block Timer	employee	Existing	39.57	3	\$0.49	0%	0%	\$0.00	0.00	0.00	Vermont TRM
Paper Mfg	Motors	Agriculture - Live Stock Waterer	employee	Existing	178.76	10	\$100.72	0%	0%	\$0.07	0.00	0.00	Ontario Power TRM
Paper Mfg	Process	Dairy - Milk Precoolers	employee	Existing	9.40	15	\$4.46	0%	0%	\$0.05	0.00	0.00	Ontario Power TRM
Paper Mfg	Process	Clean Room: Change Filter Strategy	employee	Existing	13.68	15	\$0.10	0%	0%	\$0.00	0.00	0.00	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Paper Mfg	Process	Clean Room: Chiller Optimize	employee	Existing	2.85	15	\$0.26	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Paper Mfg	Process	Clean Room: Clean Room HVAC	employee	Existing	1.72	15	\$0.32	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Paper Mfg	Process	Elec Chip Fab: Solidstate Chiller	employee	Existing	1.69	15	\$1.00	0%	0%	\$0.06	0.00	0.00	7th Power Plan
Paper Mfg	Process	Elec Chip Fab: Eliminate Exhaust	employee	Existing	1.70	15	\$0.36	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Paper Mfg	Process	Elec Chip Fab: Exhaust Injector	employee	Existing	3.34	15	\$1.75	0%	0%	\$0.06	0.00	0.00	7th Power Plan
Paper Mfg	Process	Elec Chip Fab: Reduce Gas Pressure	employee	Existing	3.42	15	\$0.04	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Paper Mfg	Motors	Panel: Hydraulic Press	employee	Existing	240.10	10	\$59.21	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Paper Mfg	Motors	Wood: Replace Pneumatic Conveyor	employee	Existing	268.99	10	\$4.43	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Paper Mfg	Process	Metal: New Arc Furnace	employee	Existing	85.90	10	\$9.09	0%	0%	-\$0.01	0.00	0.00	7th Power Plan
Paper Mfg	Process	Paper: Premium Control Large Material	employee	Existing	11.05	10	\$5.67	15%	40%	\$0.07	0.20	0.21	7th Power Plan
Paper Mfg	Process	Paper: Efficient Pulp Screen	employee	Existing	8.99	10	\$1.87	15%	29%	\$0.03	0.09	0.09	7th Power Plan
Paper Mfg	Process	Kraft: Effluent Treatment System	employee	Existing	9.07	10	\$0.77	15%	25%	\$0.01	0.06	0.06	7th Power Plan
Paper Mfg	Motors	Kraft: Efficient Agitator	employee	Existing	453.42	10	\$44.19	15%	29%	\$0.01	0.95	0.96	7th Power Plan
Paper Mfg	Process	Mech Pulp: Premium Process	employee	Existing	0.10	5	\$0.01	15%	38%	\$0.03	0.00	0.00	7th Power Plan
Paper Mfg	Motors	Mech Pulp: Refiner Plate Improvement	employee	Existing	3.68	1	\$0.17	15%	52%	\$0.04	0.02	0.02	7th Power Plan
Paper Mfg	Cooling	Transformer - High Efficiency	employee	Existing	1.28	10	\$5.00	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Paper Mfg	Heating	Transformer - High Efficiency	employee	Existing	5.69	10	\$5.00	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Paper Mfg	Ventilation	Transformer - High Efficiency	employee	Existing	0.16	10	\$5.00	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Paper Mfg	Interior Lighting	Transformer - High Efficiency	employee	Existing	0.95	10	\$5.00	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Paper Mfg	Exterior Lighting	Transformer - High Efficiency	employee	Existing	0.19	10	\$5.00	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Paper Mfg	Motors	Transformer - High Efficiency	employee	Existing	26.15	10	\$5.00	15%	15%	\$0.02	0.00	0.00	7th Power Plan

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Paper Mfg	Process	Transformer - High Efficiency	employee	Existing	4.30	10	\$5.00	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Paper Mfg	Miscellaneous	Transformer - High Efficiency	employee	Existing	1.50	10	\$5.00	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Paper Mfg	Cooling	Strategic Energy Management	employee	Existing	3.54	3	\$30.73	0%	24%	\$0.08	0.00	0.00	AEG Research
Paper Mfg	Heating	Strategic Energy Management	employee	Existing	16.28	3	\$30.73	0%	24%	\$0.08	0.01	0.01	AEG Research
Paper Mfg	Ventilation	Strategic Energy Management	employee	Existing	0.46	3	\$30.73	0%	24%	\$0.08	0.00	0.00	AEG Research
Paper Mfg	Interior Lighting	Strategic Energy Management	employee	Existing	2.72	3	\$30.73	0%	24%	\$0.08	0.01	0.01	AEG Research
Paper Mfg	Exterior Lighting	Strategic Energy Management	employee	Existing	0.56	3	\$30.73	0%	24%	\$0.08	0.00	0.00	AEG Research
Paper Mfg	Motors	Strategic Energy Management	employee	Existing	74.98	3	\$30.73	0%	24%	\$0.08	0.25	0.27	AEG Research
Paper Mfg	Process	Strategic Energy Management	employee	Existing	12.35	3	\$30.73	0%	24%	\$0.08	0.04	0.04	AEG Research
Paper Mfg	Miscellaneous	Strategic Energy Management	employee	Existing	4.29	3	\$30.73	0%	24%	\$0.08	0.02	0.02	AEG Research
Paper Mfg	Interior Lighting	Commissioning	employee	Existing	3.12	3	\$54.72	0%	0%	\$0.15	0.00	0.00	AEG Research
Paper Mfg	Exterior Lighting	Commissioning	employee	Existing	0.64	3	\$54.72	0%	0%	\$0.15	0.00	0.00	AEG Research
Paper Mfg	Motors	Commissioning	employee	Existing	86.00	3	\$54.72	0%	0%	\$0.15	0.00	0.00	AEG Research
Paper Mfg	Process	Commissioning	employee	Existing	14.16	3	\$54.72	0%	0%	\$0.15	0.00	0.00	AEG Research
Paper Mfg	Miscellaneous	Commissioning	employee	Existing	4.92	3	\$54.72	0%	0%	\$0.15	0.00	0.00	AEG Research
Paper Mfg	Interior Lighting	Retrocommissioning	employee	Existing	3.18	3	\$34.73	10%	35%	\$0.10	0.01	0.01	AEG Research
Paper Mfg	Exterior Lighting	Retrocommissioning	employee	Existing	0.65	3	\$34.73	10%	35%	\$0.10	0.00	0.00	AEG Research
Paper Mfg	Motors	Retrocommissioning	employee	Existing	87.13	3	\$34.73	10%	35%	\$0.10	0.31	0.33	AEG Research
Paper Mfg	Process	Retrocommissioning	employee	Existing	14.35	3	\$34.73	10%	35%	\$0.10	0.05	0.05	AEG Research
Paper Mfg	Miscellaneous	Retrocommissioning	employee	Existing	4.99	3	\$34.73	10%	35%	\$0.10	0.02	0.02	AEG Research
Paper Mfg	Motors	Municipal Sewage Treatment	employee	Existing	9.77	12	\$5.75	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Paper Mfg	Motors	Municipal Water Supply Treatment	employee	Existing	0.00	12	\$0.00	0%	0%	\$0.00	0.00	0.00	7th Power Plan

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Paper Mfg	Cooling	Insulation - Ceiling	sqft	New	0.11	45	\$1.28	15%	25%	\$0.16	0.00	0.00	Building Energy Simulation Tool
Paper Mfg	Heating	Insulation - Ceiling	sqft	New	0.52	45	\$1.28	15%	25%	\$0.16	0.00	0.00	Building Energy Simulation Tool
Paper Mfg	Ventilation	Insulation - Ceiling	sqft	New	0.01	45	\$1.28	15%	25%	\$0.16	0.00	0.00	Building Energy Simulation Tool
Paper Mfg	Cooling	Insulation - Ducting	sqft	New	0.04	20	\$0.84	15%	25%	\$1.11	0.00	0.00	Building Energy Simulation Tool
Paper Mfg	Heating	Insulation - Ducting	sqft	New	0.02	20	\$0.84	15%	25%	\$1.11	0.00	0.00	Building Energy Simulation Tool
Paper Mfg	Ventilation	Insulation - Ducting	sqft	New	0.00	20	\$0.84	15%	25%	\$1.11	0.00	0.00	Building Energy Simulation Tool
Paper Mfg	Cooling	Insulation - Wall Cavity	sqft	New	0.00	45	\$0.15	45%	50%	\$0.02	0.00	0.00	Building Energy Simulation Tool
Paper Mfg	Heating	Insulation - Wall Cavity	sqft	New	0.71	45	\$0.15	45%	50%	\$0.02	0.00	0.00	Building Energy Simulation Tool
Paper Mfg	Ventilation	Insulation - Wall Cavity	sqft	New	0.01	45	\$0.15	45%	50%	\$0.02	0.00	0.00	Building Energy Simulation Tool
Paper Mfg	Cooling	HVAC - Duct Repair and Sealing	sqft	New	0.01	18	\$0.00	15%	25%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Paper Mfg	Heating	HVAC - Duct Repair and Sealing	sqft	New	0.05	18	\$0.00	15%	25%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Paper Mfg	Ventilation	HVAC - Duct Repair and Sealing	sqft	New	0.00	18	\$0.00	15%	25%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Paper Mfg	Cooling	Chiller - Chilled Water Reset	sqft	New	0.04	10	\$0.01	15%	45%	\$0.03	0.00	0.00	AEG-BEST
Paper Mfg	Cooling	Chiller - Chilled Water Variable-Flow System	sqft	New	0.21	15	\$0.50	15%	60%	\$0.24	0.00	0.00	AEG-BEST
Paper Mfg	Cooling	Chiller - Variable Speed Fans	sqft	New	0.08	15	\$0.03	15%	75%	\$0.04	0.00	0.00	New Jersey TRM
Paper Mfg	Cooling	HVAC - Economizer	sqft	New	0.00	10	\$0.25	18%	30%	\$34.87	0.00	0.00	AEG-BEST
Paper Mfg	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.25	15%	35%	\$12.47	0.00	0.00	7th Power Plan
Paper Mfg	Cooling	Destratification Fans (HVLS)	sqft	New	0.14	15	\$0.63	15%	50%	\$0.05	0.00	0.00	AEG Research
Paper Mfg	Heating	Destratification Fans (HVLS)	sqft	New	1.30	15	\$0.63	15%	50%	\$0.05	0.02	0.02	AEG Research
Paper Mfg	Cooling	RTU - Maintenance	sqft	New	0.08	3	\$0.07	15%	75%	\$0.28	0.00	0.00	AEG Research
Paper Mfg	Cooling	Thermostat - WiFi/Interactive	sqft	New	0.26	5	\$0.66	5%	15%	\$0.09	0.00	0.00	7th Power Plan

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Paper Mfg	Heating	Thermostat - WiFi/Interactive	sqft	New	1.22	5	\$0.66	5%	15%	\$0.09	0.00	0.00	7th Power Plan
Paper Mfg	Ventilation	Thermostat - WiFi/Interactive	sqft	New	0.03	5	\$0.66	5%	15%	\$0.09	0.00	0.00	7th Power Plan
Paper Mfg	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.00	15	\$0.35	22%	41%	\$44.83	0.01	0.02	7th Power Plan
Paper Mfg	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.00	15	\$0.58	22%	41%	\$52.84	0.02	0.02	7th Power Plan
Paper Mfg	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	New	0.02	15	\$0.00	1%	2%	\$0.01	0.00	0.00	7th Power Plan
Paper Mfg	Interior Lighting	Interior Lighting - Timeclocks and Timers	sqft	New	0.00	8	\$0.00	7%	7%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Paper Mfg	Interior Lighting	Interior Lighting - Skylights	sqft	New	0.00	15	\$1.01	18%	24%	\$0.00	0.00	0.00	AEG Research
Paper Mfg	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	sqft	New	0.03	16	\$1.81	5%	40%	\$4.03	0.00	0.00	7th Power Plan
Paper Mfg	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	New	0.03	11	\$0.00	15%	50%	\$0.01	0.00	0.00	Illinois TRM
Paper Mfg	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	sqft	New	0.04	8	\$0.03	15%	25%	\$0.08	0.00	0.00	7th Power Plan
Paper Mfg	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	New	0.02	8	\$0.02	44%	60%	\$0.08	0.00	0.00	Pacific Gas and Electric Research
Paper Mfg	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	New	0.03	7	\$1.19	15%	30%	\$4.40	0.00	0.00	AEG Research
Paper Mfg	Process	Process - Conductivity Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Paper Mfg	Process	Process - Timers and Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Paper Mfg	Motors	Process - Timers and Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Paper Mfg	Process	Refrigeration - Floating Head Pressure	employee	New	1.43	15	\$0.99	20%	50%	\$0.08	0.00	0.00	RTF Workbook
Paper Mfg	Process	Refrigeration - System Optimization	employee	New	2.31	15	\$0.35	20%	50%	\$0.02	0.00	0.00	AEG Research
Paper Mfg	Motors	Pumping System - Equipment Upgrade	employee	New	78.34	10	\$11.44	9%	38%	\$0.02	0.07	0.07	7th Power Plan
Paper Mfg	Motors	Pumping System - System Optimization	employee	New	58.26	12	\$17.43	9%	38%	\$0.04	0.07	0.07	UNIDO Study on Industrial Energy Efficiency

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Paper Mfg	Motors	Pumping System - Variable Speed Drive	employee	New	57.82	10	\$18.13	9%	38%	\$0.04	0.06	0.06	UNIDO Study on Industrial Energy Efficiency
Paper Mfg	Motors	Fan System - Equipment Upgrade	employee	New	41.90	10	\$4.17	9%	38%	\$0.01	0.04	0.04	UNIDO Study on Industrial Energy Efficiency
Paper Mfg	Motors	Fan System - Flow Optimization	employee	New	49.38	10	\$6.90	9%	38%	\$0.02	0.05	0.05	UNIDO Study on Industrial Energy Efficiency
Paper Mfg	Motors	Fan System - Variable Speed Drive	employee	New	73.45	10	\$34.71	9%	38%	\$0.06	0.08	0.08	UNIDO Study on Industrial Energy Efficiency
Paper Mfg	Motors	Compressed Air - Equipment Upgrade	employee	New	76.50	10	\$5.57	17%	50%	\$0.01	0.08	0.08	7th Power Plan
Paper Mfg	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	New	0.00	15	\$0.00	16%	38%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Paper Mfg	Motors	Compressed Air - Refrigerated Cycling Dryers	employee	New	0.00	10	\$0.00	16%	30%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Paper Mfg	Motors	Compressed Air - System Controls	employee	New	16.81	10	\$3.98	9%	38%	\$0.03	0.01	0.01	UNIDO Study on Industrial Energy Efficiency
Paper Mfg	Motors	Compressed Air - Leak Management Program	employee	New	43.48	10	\$4.00	18%	75%	\$0.01	0.07	0.07	7th Power Plan
Paper Mfg	Motors	Compressed Air - Variable Speed Drive	employee	New	31.05	15	\$24.40	26%	45%	\$0.08	0.02	0.02	UNIDO Study on Industrial Energy Efficiency
Paper Mfg	Motors	Compressed Air - Low Pressure-Drop Filters	employee	New	1.03	10	\$0.38	17%	50%	\$0.05	0.00	0.00	Illinois TRM
Paper Mfg	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	New	6.33	10	\$1.22	17%	50%	\$0.03	0.01	0.01	UNIDO Study on Industrial Energy Efficiency
Paper Mfg	Motors	Compressed Air - Outside Air Intake	employee	New	0.00	20	\$0.00	17%	50%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Paper Mfg	Motors	Compressed Air - Receiver Capacity Addition	employee	New	6.28	15	\$3.36	17%	50%	\$0.06	0.01	0.01	UNIDO Study on Industrial Energy Efficiency
Paper Mfg	Motors	Material Handling - Variable Speed Drive	employee	New	165.77	10	\$59.25	25%	45%	\$0.05	0.12	0.12	7th Power Plan
Paper Mfg	Motors	Motors - Green Rewind (<100 HP)	employee	New	3.34	10	\$1.45	10%	50%	\$0.06	0.02	0.02	7th Power Plan
Paper Mfg	Motors	Motors - Green Rewind (100 HP+)	employee	New	1.88	10	\$0.51	6%	25%	\$0.04	0.01	0.01	7th Power Plan
Paper Mfg	Motors	Switch from Belt Drive to Direct Drive	employee	New	28.51	12	\$6.35	16%	25%	\$0.03	0.05	0.05	2015-mdu-irp-report---volume-iii.pdf
Paper Mfg	Motors	Motors - Synchronous Belts	employee	New	7.54	10	\$1.91	16%	36%	\$0.03	0.02	0.02	7th Power Plan

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Paper Mfg	Miscellaneous	Agriculture - Engine Block Timer	employee	New	39.57	3	\$0.49	0%	0%	\$0.00	0.00	0.00	Vermont TRM
Paper Mfg	Motors	Agriculture - Live Stock Waterer	employee	New	189.02	10	\$100.72	0%	0%	\$0.07	0.00	0.00	Ontario Power TRM
Paper Mfg	Process	Dairy - Milk Precoolers	employee	New	9.51	15	\$4.46	0%	0%	\$0.05	0.00	0.00	Ontario Power TRM
Paper Mfg	Process	Clean Room: Change Filter Strategy	employee	New	13.68	15	\$0.10	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Paper Mfg	Process	Clean Room: Chiller Optimize	employee	New	2.85	15	\$0.26	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Paper Mfg	Process	Clean Room: Clean Room HVAC	employee	New	1.72	15	\$0.32	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Paper Mfg	Process	Elec Chip Fab: Solidstate Chiller	employee	New	1.71	15	\$1.00	0%	0%	\$0.06	0.00	0.00	7th Power Plan
Paper Mfg	Process	Elec Chip Fab: Eliminate Exhaust	employee	New	1.70	15	\$0.36	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Paper Mfg	Process	Elec Chip Fab: Exhaust Injector	employee	New	3.38	15	\$1.75	0%	0%	\$0.06	0.00	0.00	7th Power Plan
Paper Mfg	Process	Elec Chip Fab: Reduce Gas Pressure	employee	New	3.42	15	\$0.04	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Paper Mfg	Motors	Panel: Hydraulic Press	employee	New	249.44	10	\$59.21	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Paper Mfg	Motors	Wood: Replace Pneumatic Conveyor	employee	New	268.99	10	\$4.43	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Paper Mfg	Process	Metal: New Arc Furnace	employee	New	86.16	10	\$9.09	0%	0%	-\$0.01	0.00	0.00	7th Power Plan
Paper Mfg	Process	Paper: Premium Control Large Material	employee	New	11.18	10	\$5.67	15%	40%	\$0.07	0.03	0.03	7th Power Plan
Paper Mfg	Process	Paper: Efficient Pulp Screen	employee	New	9.02	10	\$1.87	15%	29%	\$0.03	0.01	0.01	7th Power Plan
Paper Mfg	Process	Kraft: Effluent Treatment System	employee	New	9.06	10	\$0.77	15%	25%	\$0.01	0.01	0.01	7th Power Plan
Paper Mfg	Motors	Kraft: Efficient Agitator	employee	New	458.84	10	\$44.19	15%	29%	\$0.01	0.14	0.14	7th Power Plan
Paper Mfg	Process	Mech Pulp: Premium Process	employee	New	0.10	5	\$0.01	15%	38%	\$0.03	0.00	0.00	7th Power Plan
Paper Mfg	Motors	Mech Pulp: Refiner Plate Improvement	employee	New	3.89	1	\$0.17	15%	52%	\$0.04	0.01	0.01	7th Power Plan
Paper Mfg	Cooling	Transformer - High Efficiency	employee	New	1.17	10	\$4.95	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Paper Mfg	Heating	Transformer - High Efficiency	employee	New	5.49	10	\$4.95	15%	15%	\$0.02	0.00	0.00	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Paper Mfg	Ventilation	Transformer - High Efficiency	employee	New	0.11	10	\$4.95	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Paper Mfg	Interior Lighting	Transformer - High Efficiency	employee	New	0.87	10	\$4.95	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Paper Mfg	Exterior Lighting	Transformer - High Efficiency	employee	New	0.18	10	\$4.95	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Paper Mfg	Motors	Transformer - High Efficiency	employee	New	27.65	10	\$4.95	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Paper Mfg	Process	Transformer - High Efficiency	employee	New	4.42	10	\$4.95	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Paper Mfg	Miscellaneous	Transformer - High Efficiency	employee	New	1.42	10	\$4.95	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Paper Mfg	Cooling	Strategic Energy Management	employee	New	3.34	3	\$30.43	0%	24%	\$0.08	0.00	0.00	AEG Research
Paper Mfg	Heating	Strategic Energy Management	employee	New	15.80	3	\$30.43	0%	24%	\$0.08	0.00	0.00	AEG Research
Paper Mfg	Ventilation	Strategic Energy Management	employee	New	0.33	3	\$30.43	0%	24%	\$0.08	0.00	0.00	AEG Research
Paper Mfg	Interior Lighting	Strategic Energy Management	employee	New	2.50	3	\$30.43	0%	24%	\$0.08	0.00	0.00	AEG Research
Paper Mfg	Exterior Lighting	Strategic Energy Management	employee	New	0.53	3	\$30.43	0%	24%	\$0.08	0.00	0.00	AEG Research
Paper Mfg	Motors	Strategic Energy Management	employee	New	79.86	3	\$30.43	0%	24%	\$0.08	0.01	0.01	AEG Research
Paper Mfg	Process	Strategic Energy Management	employee	New	12.75	3	\$30.43	0%	24%	\$0.08	0.00	0.00	AEG Research
Paper Mfg	Miscellaneous	Strategic Energy Management	employee	New	4.10	3	\$30.43	0%	24%	\$0.08	0.00	0.00	AEG Research
Paper Mfg	Interior Lighting	Commissioning	employee	New	2.88	3	\$54.90	10%	35%	\$0.15	0.00	0.00	AEG Research
Paper Mfg	Exterior Lighting	Commissioning	employee	New	0.61	3	\$54.90	10%	35%	\$0.15	0.00	0.00	AEG Research
Paper Mfg	Motors	Commissioning	employee	New	92.04	3	\$54.90	10%	35%	\$0.15	0.01	0.01	AEG Research
Paper Mfg	Process	Commissioning	employee	New	14.70	3	\$54.90	10%	35%	\$0.15	0.00	0.00	AEG Research
Paper Mfg	Miscellaneous	Commissioning	employee	New	4.72	3	\$54.90	10%	35%	\$0.15	0.00	0.00	AEG Research
Paper Mfg	Interior Lighting	Retrocommissioning	employee	New	2.89	3	\$34.85	0%	0%	\$0.10	0.00	0.00	AEG Research

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Paper Mfg	Exterior Lighting	Retrocommissioning	employee	New	0.61	3	\$34.85	0%	0%	\$0.10	0.00	0.00	AEG Research
Paper Mfg	Motors	Retrocommissioning	employee	New	92.15	3	\$34.85	0%	0%	\$0.10	0.00	0.00	AEG Research
Paper Mfg	Process	Retrocommissioning	employee	New	14.72	3	\$34.85	0%	0%	\$0.10	0.00	0.00	AEG Research
Paper Mfg	Miscellaneous	Retrocommissioning	employee	New	4.73	3	\$34.85	0%	0%	\$0.10	0.00	0.00	AEG Research
Paper Mfg	Motors	Municipal Sewage Treatment	employee	New	10.28	12	\$5.75	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Paper Mfg	Motors	Municipal Water Supply Treatment	employee	New	0.00	12	\$0.00	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Petroleum Refining	Cooling	Insulation - Ceiling	sqft	Existing	0.12	45	\$1.28	15%	25%	\$0.14	0.01	0.01	Building Energy Simulation Tool
Petroleum Refining	Heating	Insulation - Ceiling	sqft	Existing	0.54	45	\$1.28	15%	25%	\$0.14	0.03	0.03	Building Energy Simulation Tool
Petroleum Refining	Ventilation	Insulation - Ceiling	sqft	Existing	0.02	45	\$1.28	15%	25%	\$0.14	0.00	0.01	Building Energy Simulation Tool
Petroleum Refining	Cooling	Insulation - Ducting	sqft	Existing	0.05	20	\$0.84	15%	25%	\$1.04	0.00	0.00	Building Energy Simulation Tool
Petroleum Refining	Heating	Insulation - Ducting	sqft	Existing	0.02	20	\$0.84	15%	25%	\$1.04	0.00	0.00	Building Energy Simulation Tool
Petroleum Refining	Ventilation	Insulation - Ducting	sqft	Existing	0.00	20	\$0.84	15%	25%	\$1.04	0.00	0.00	Building Energy Simulation Tool
Petroleum Refining	Cooling	Insulation - Wall Cavity	sqft	Existing	0.00	45	\$0.15	45%	50%	\$0.02	0.00	0.00	Building Energy Simulation Tool
Petroleum Refining	Heating	Insulation - Wall Cavity	sqft	Existing	0.76	45	\$0.15	45%	50%	\$0.02	0.02	0.02	Building Energy Simulation Tool
Petroleum Refining	Ventilation	Insulation - Wall Cavity	sqft	Existing	0.02	45	\$0.15	45%	50%	\$0.02	0.00	0.00	Building Energy Simulation Tool
Petroleum Refining	Cooling	HVAC - Duct Repair and Sealing	sqft	Existing	0.02	18	\$0.00	15%	25%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Petroleum Refining	Heating	HVAC - Duct Repair and Sealing	sqft	Existing	0.05	18	\$0.00	15%	25%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Petroleum Refining	Ventilation	HVAC - Duct Repair and Sealing	sqft	Existing	0.00	18	\$0.00	15%	25%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Petroleum Refining	Cooling	Chiller - Chilled Water Reset	sqft	Existing	0.05	10	\$0.01	15%	45%	\$0.03	0.00	0.00	AEG-BEST
Petroleum Refining	Cooling	Chiller - Chilled Water Variable-Flow System	sqft	Existing	0.25	15	\$0.50	15%	60%	\$0.20	0.02	0.02	AEG-BEST

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Petroleum Refining	Cooling	Chiller - Variable Speed Fans	sqft	Existing	0.09	15	\$0.03	15%	75%	\$0.03	0.01	0.01	New Jersey TRM
Petroleum Refining	Cooling	HVAC - Economizer	sqft	Existing	0.32	10	\$0.25	18%	30%	\$0.10	0.01	0.01	AEG-BEST
Petroleum Refining	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.25	15%	35%	\$10.43	0.00	0.00	7th Power Plan
Petroleum Refining	Cooling	Destratification Fans (HVLS)	sqft	Existing	0.16	15	\$0.63	15%	50%	\$0.04	0.03	0.04	AEG Research
Petroleum Refining	Heating	Destratification Fans (HVLS)	sqft	Existing	1.39	15	\$0.63	15%	50%	\$0.04	0.33	0.33	AEG Research
Petroleum Refining	Cooling	RTU - Maintenance	sqft	Existing	0.08	3	\$0.07	15%	75%	\$0.27	0.02	0.02	AEG Research
Petroleum Refining	Cooling	Thermostat - WiFi/Interactive	sqft	Existing	0.28	5	\$0.66	5%	15%	\$0.09	0.02	0.02	7th Power Plan
Petroleum Refining	Heating	Thermostat - WiFi/Interactive	sqft	Existing	1.27	5	\$0.66	5%	15%	\$0.09	0.08	0.08	7th Power Plan
Petroleum Refining	Ventilation	Thermostat - WiFi/Interactive	sqft	Existing	0.04	5	\$0.66	5%	15%	\$0.09	0.01	0.01	7th Power Plan
Petroleum Refining	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.62	15	\$0.35	7%	33%	\$0.05	0.12	0.15	7th Power Plan
Petroleum Refining	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.85	15	\$0.58	7%	33%	\$0.05	0.16	0.21	7th Power Plan
Petroleum Refining	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	Existing	0.02	15	\$0.00	1%	2%	\$0.01	0.00	0.00	7th Power Plan
Petroleum Refining	Interior Lighting	Interior Lighting - Timeclocks and Timers	sqft	Existing	0.00	8	\$0.00	7%	7%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Petroleum Refining	Interior Lighting	Interior Lighting - Skylights	sqft	Existing	0.00	15	\$1.01	15%	23%	\$0.00	0.00	0.00	AEG Research
Petroleum Refining	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	sqft	Existing	0.03	16	\$1.81	5%	40%	\$4.03	0.02	0.03	7th Power Plan
Petroleum Refining	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	Existing	0.04	11	\$0.00	15%	50%	\$0.01	0.02	0.03	Illinois TRM
Petroleum Refining	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	sqft	Existing	0.05	8	\$0.03	15%	25%	\$0.08	0.02	0.04	7th Power Plan
Petroleum Refining	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	Existing	0.03	8	\$0.02	33%	60%	\$0.08	0.03	0.05	Pacific Gas and Electric Research
Petroleum Refining	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	Existing	0.03	7	\$1.19	15%	30%	\$4.46	0.02	0.04	AEG Research

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Petroleum Refining	Process	Process - Conductivity Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Petroleum Refining	Process	Process - Timers and Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Petroleum Refining	Motors	Process - Timers and Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Petroleum Refining	Process	Refrigeration - Floating Head Pressure	employee	Existing	47.10	15	\$46.10	20%	50%	\$0.11	0.11	0.11	RTF Workbook
Petroleum Refining	Process	Refrigeration - System Optimization	employee	Existing	75.95	15	\$32.46	20%	50%	\$0.05	0.18	0.18	AEG Research
Petroleum Refining	Motors	Pumping System - Equipment Upgrade	employee	Existing	2,283.12	10	\$336.16	9%	38%	\$0.02	5.16	5.30	7th Power Plan
Petroleum Refining	Motors	Pumping System - System Optimization	employee	Existing	1,652.59	12	\$512.30	9%	38%	\$0.03	3.60	3.76	UNIDO Study on Industrial Energy Efficiency
Petroleum Refining	Motors	Pumping System - Variable Speed Drive	employee	Existing	1,608.14	10	\$532.99	9%	38%	\$0.04	3.47	3.70	UNIDO Study on Industrial Energy Efficiency
Petroleum Refining	Motors	Fan System - Equipment Upgrade	employee	Existing	206.88	10	\$20.78	9%	38%	\$0.01	0.46	0.46	UNIDO Study on Industrial Energy Efficiency
Petroleum Refining	Motors	Fan System - Flow Optimization	employee	Existing	243.94	10	\$34.39	9%	38%	\$0.02	0.54	0.55	UNIDO Study on Industrial Energy Efficiency
Petroleum Refining	Motors	Fan System - Variable Speed Drive	employee	Existing	341.42	10	\$173.03	9%	38%	\$0.06	0.73	0.79	UNIDO Study on Industrial Energy Efficiency
Petroleum Refining	Motors	Compressed Air - Equipment Upgrade	employee	Existing	1,085.71	10	\$79.00	17%	50%	\$0.01	2.89	2.89	7th Power Plan
Petroleum Refining	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	Existing	0.00	15	\$0.00	16%	38%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Petroleum Refining	Motors	Compressed Air - Refrigerated Cycling Dryers	employee	Existing	0.00	10	\$0.00	16%	30%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Petroleum Refining	Motors	Compressed Air - System Controls	employee	Existing	226.86	10	\$56.49	9%	38%	\$0.03	0.50	0.54	UNIDO Study on Industrial Energy Efficiency
Petroleum Refining	Motors	Compressed Air - Leak Management Program	employee	Existing	610.94	10	\$56.78	18%	75%	\$0.01	2.78	2.81	7th Power Plan
Petroleum Refining	Motors	Compressed Air - Variable Speed Drive	employee	Existing	412.32	15	\$346.32	26%	45%	\$0.08	0.60	0.67	UNIDO Study on Industrial Energy Efficiency
Petroleum Refining	Motors	Compressed Air - Low Pressure-Drop Filters	employee	Existing	13.75	10	\$5.34	17%	50%	\$0.05	0.04	0.04	Illinois TRM
Petroleum Refining	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	Existing	86.81	10	\$17.32	17%	50%	\$0.03	0.23	0.24	UNIDO Study on Industrial Energy Efficiency

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Petroleum Refining	Motors	Compressed Air - Outside Air Intake	employee	Existing	0.00	20	\$0.00	17%	50%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Petroleum Refining	Motors	Compressed Air - Receiver Capacity Addition	employee	Existing	84.53	15	\$47.62	17%	50%	\$0.06	0.22	0.24	UNIDO Study on Industrial Energy Efficiency
Petroleum Refining	Motors	Material Handling - Variable Speed Drive	employee	Existing	463.01	10	\$177.51	25%	45%	\$0.05	0.70	0.75	7th Power Plan
Petroleum Refining	Motors	Motors - Green Rewind (<100 HP)	employee	Existing	32.95	10	\$15.27	10%	50%	\$0.06	0.49	0.54	7th Power Plan
Petroleum Refining	Motors	Motors - Green Rewind (100 HP+)	employee	Existing	18.81	10	\$5.42	6%	25%	\$0.04	0.14	0.14	7th Power Plan
Petroleum Refining	Motors	Switch from Belt Drive to Direct Drive	employee	Existing	291.68	12	\$67.05	16%	25%	\$0.03	1.06	1.10	2015-mdu-irp-report---volume-iii.pdf
Petroleum Refining	Motors	Motors - Synchronous Belts	employee	Existing	75.59	10	\$20.17	16%	36%	\$0.03	0.59	0.63	7th Power Plan
Petroleum Refining	Miscellaneous	Agriculture - Engine Block Timer	employee	Existing	164.83	3	\$2.03	0%	0%	\$0.00	0.00	0.00	Vermont TRM
Petroleum Refining	Motors	Agriculture - Live Stock Waterer	employee	Existing	5,185.67	10	\$2,960.45	0%	0%	\$0.07	0.00	0.00	Ontario Power TRM
Petroleum Refining	Process	Dairy - Milk Precoolers	employee	Existing	313.98	15	\$146.70	0%	0%	\$0.05	0.00	0.00	Ontario Power TRM
Petroleum Refining	Process	Clean Room: Change Filter Strategy	employee	Existing	10.19	15	\$0.08	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Petroleum Refining	Process	Clean Room: Chiller Optimize	employee	Existing	93.82	15	\$8.69	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Petroleum Refining	Process	Clean Room: Clean Room HVAC	employee	Existing	56.96	15	\$10.49	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Petroleum Refining	Process	Elec Chip Fab: Solidstate Chiller	employee	Existing	56.52	15	\$32.94	0%	0%	\$0.06	0.00	0.00	7th Power Plan
Petroleum Refining	Process	Elec Chip Fab: Eliminate Exhaust	employee	Existing	1.27	15	\$0.27	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Petroleum Refining	Process	Elec Chip Fab: Exhaust Injector	employee	Existing	2.53	15	\$1.30	0%	0%	\$0.05	0.00	0.00	7th Power Plan
Petroleum Refining	Process	Elec Chip Fab: Reduce Gas Pressure	employee	Existing	2.55	15	\$0.03	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Petroleum Refining	Motors	Panel: Hydraulic Press	employee	Existing	711.30	10	\$177.40	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Petroleum Refining	Motors	Wood: Replace Pneumatic Conveyor	employee	Existing	805.88	10	\$13.29	0%	0%	\$0.00	0.00	0.00	7th Power Plan

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Petroleum Refining	Process	Metal: New Arc Furnace	employee	Existing	467.17	10	\$49.04	0%	0%	-\$0.07	0.00	0.00	7th Power Plan
Petroleum Refining	Process	Paper: Premium Control Large Material	employee	Existing	93.28	10	\$47.26	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Petroleum Refining	Process	Paper: Efficient Pulp Screen	employee	Existing	75.67	10	\$15.57	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Petroleum Refining	Process	Kraft: Effluent Treatment System	employee	Existing	75.67	10	\$6.38	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Petroleum Refining	Motors	Kraft: Efficient Agitator	employee	Existing	1,347.84	10	\$132.38	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Petroleum Refining	Process	Mech Pulp: Premium Process	employee	Existing	0.84	5	\$0.11	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Petroleum Refining	Motors	Mech Pulp: Refiner Plate Improvement	employee	Existing	10.88	1	\$0.50	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Petroleum Refining	Cooling	Transformer - High Efficiency	employee	Existing	10.08	10	\$47.84	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Petroleum Refining	Heating	Transformer - High Efficiency	employee	Existing	45.12	10	\$47.84	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Petroleum Refining	Ventilation	Transformer - High Efficiency	employee	Existing	1.27	10	\$47.84	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Petroleum Refining	Interior Lighting	Transformer - High Efficiency	employee	Existing	5.14	10	\$47.84	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Petroleum Refining	Exterior Lighting	Transformer - High Efficiency	employee	Existing	1.11	10	\$47.84	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Petroleum Refining	Motors	Transformer - High Efficiency	employee	Existing	272.72	10	\$47.84	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Petroleum Refining	Process	Transformer - High Efficiency	employee	Existing	37.36	10	\$47.84	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Petroleum Refining	Miscellaneous	Transformer - High Efficiency	employee	Existing	6.24	10	\$47.84	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Petroleum Refining	Cooling	Strategic Energy Management	employee	Existing	27.86	3	\$293.83	0%	5%	\$0.08	0.00	0.00	AEG Research
Petroleum Refining	Heating	Strategic Energy Management	employee	Existing	129.01	3	\$293.83	0%	5%	\$0.08	0.01	0.01	AEG Research
Petroleum Refining	Ventilation	Strategic Energy Management	employee	Existing	3.64	3	\$293.83	0%	5%	\$0.08	0.00	0.00	AEG Research
Petroleum Refining	Interior Lighting	Strategic Energy Management	employee	Existing	14.64	3	\$293.83	0%	5%	\$0.08	0.00	0.01	AEG Research

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Petroleum Refining	Exterior Lighting	Strategic Energy Management	employee	Existing	3.18	3	\$293.83	0%	5%	\$0.08	0.00	0.00	AEG Research
Petroleum Refining	Motors	Strategic Energy Management	employee	Existing	780.26	3	\$293.83	0%	5%	\$0.08	0.27	0.30	AEG Research
Petroleum Refining	Process	Strategic Energy Management	employee	Existing	106.84	3	\$293.83	0%	5%	\$0.08	0.04	0.04	AEG Research
Petroleum Refining	Miscellaneous	Strategic Energy Management	employee	Existing	17.82	3	\$293.83	0%	5%	\$0.08	0.01	0.01	AEG Research
Petroleum Refining	Interior Lighting	Commissioning	employee	Existing	16.88	3	\$550.87	0%	0%	\$0.16	0.00	0.00	AEG Research
Petroleum Refining	Exterior Lighting	Commissioning	employee	Existing	3.67	3	\$550.87	0%	0%	\$0.16	0.00	0.00	AEG Research
Petroleum Refining	Motors	Commissioning	employee	Existing	899.20	3	\$550.87	0%	0%	\$0.16	0.00	0.00	AEG Research
Petroleum Refining	Process	Commissioning	employee	Existing	123.12	3	\$550.87	0%	0%	\$0.16	0.00	0.00	AEG Research
Petroleum Refining	Miscellaneous	Commissioning	employee	Existing	20.54	3	\$550.87	0%	0%	\$0.16	0.00	0.00	AEG Research
Petroleum Refining	Interior Lighting	Retrocommissioning	employee	Existing	17.15	3	\$349.70	5%	39%	\$0.10	0.03	0.05	AEG Research
Petroleum Refining	Exterior Lighting	Retrocommissioning	employee	Existing	3.70	3	\$349.70	5%	39%	\$0.10	0.01	0.01	AEG Research
Petroleum Refining	Motors	Retrocommissioning	employee	Existing	909.08	3	\$349.70	5%	39%	\$0.10	2.19	2.34	AEG Research
Petroleum Refining	Process	Retrocommissioning	employee	Existing	124.52	3	\$349.70	5%	39%	\$0.10	0.31	0.31	AEG Research
Petroleum Refining	Miscellaneous	Retrocommissioning	employee	Existing	20.79	3	\$349.70	5%	39%	\$0.10	0.07	0.05	AEG Research
Petroleum Refining	Motors	Municipal Sewage Treatment	employee	Existing	282.13	12	\$168.99	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Petroleum Refining	Motors	Municipal Water Supply Treatment	employee	Existing	0.00	12	\$0.00	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Petroleum Refining	Cooling	Insulation - Ceiling	sqft	New	0.11	45	\$1.28	15%	25%	\$0.16	0.00	0.00	Building Energy Simulation Tool
Petroleum Refining	Heating	Insulation - Ceiling	sqft	New	0.52	45	\$1.28	15%	25%	\$0.16	0.01	0.01	Building Energy Simulation Tool
Petroleum Refining	Ventilation	Insulation - Ceiling	sqft	New	0.01	45	\$1.28	15%	25%	\$0.16	0.00	0.00	Building Energy Simulation Tool

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Petroleum Refining	Cooling	Insulation - Ducting	sqft	New	0.04	20	\$0.84	15%	25%	\$1.11	0.00	0.00	Building Energy Simulation Tool
Petroleum Refining	Heating	Insulation - Ducting	sqft	New	0.02	20	\$0.84	15%	25%	\$1.11	0.00	0.00	Building Energy Simulation Tool
Petroleum Refining	Ventilation	Insulation - Ducting	sqft	New	0.00	20	\$0.84	15%	25%	\$1.11	0.00	0.00	Building Energy Simulation Tool
Petroleum Refining	Cooling	Insulation - Wall Cavity	sqft	New	0.00	45	\$0.15	45%	50%	\$0.02	0.00	0.00	Building Energy Simulation Tool
Petroleum Refining	Heating	Insulation - Wall Cavity	sqft	New	0.71	45	\$0.15	45%	50%	\$0.02	0.01	0.01	Building Energy Simulation Tool
Petroleum Refining	Ventilation	Insulation - Wall Cavity	sqft	New	0.01	45	\$0.15	45%	50%	\$0.02	0.00	0.00	Building Energy Simulation Tool
Petroleum Refining	Cooling	HVAC - Duct Repair and Sealing	sqft	New	0.01	18	\$0.00	15%	25%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Petroleum Refining	Heating	HVAC - Duct Repair and Sealing	sqft	New	0.05	18	\$0.00	15%	25%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Petroleum Refining	Ventilation	HVAC - Duct Repair and Sealing	sqft	New	0.00	18	\$0.00	15%	25%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Petroleum Refining	Cooling	Chiller - Chilled Water Reset	sqft	New	0.04	10	\$0.01	15%	45%	\$0.03	0.00	0.00	AEG-BEST
Petroleum Refining	Cooling	Chiller - Chilled Water Variable-Flow System	sqft	New	0.21	15	\$0.50	15%	60%	\$0.24	0.00	0.00	AEG-BEST
Petroleum Refining	Cooling	Chiller - Variable Speed Fans	sqft	New	0.08	15	\$0.03	15%	75%	\$0.04	0.00	0.00	New Jersey TRM
Petroleum Refining	Cooling	HVAC - Economizer	sqft	New	0.29	10	\$0.25	18%	30%	\$0.11	0.00	0.00	AEG-BEST
Petroleum Refining	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.25	15%	35%	\$12.47	0.00	0.00	7th Power Plan
Petroleum Refining	Cooling	Destratification Fans (HVLS)	sqft	New	0.14	15	\$0.63	15%	50%	\$0.05	0.01	0.01	AEG Research
Petroleum Refining	Heating	Destratification Fans (HVLS)	sqft	New	1.30	15	\$0.63	15%	50%	\$0.05	0.07	0.07	AEG Research
Petroleum Refining	Cooling	RTU - Maintenance	sqft	New	0.08	3	\$0.07	15%	75%	\$0.28	0.00	0.00	AEG Research
Petroleum Refining	Cooling	Thermostat - WiFi/Interactive	sqft	New	0.26	5	\$0.66	5%	15%	\$0.09	0.00	0.00	7th Power Plan
Petroleum Refining	Heating	Thermostat - WiFi/Interactive	sqft	New	1.22	5	\$0.66	5%	15%	\$0.09	0.00	0.00	7th Power Plan

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Petroleum Refining	Ventilation	Thermostat - WiFi/Interactive	sqft	New	0.03	5	\$0.66	5%	15%	\$0.09	0.00	0.00	7th Power Plan
Petroleum Refining	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.57	15	\$0.35	22%	41%	\$0.05	0.04	0.05	7th Power Plan
Petroleum Refining	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.78	15	\$0.58	22%	41%	\$0.05	0.06	0.07	7th Power Plan
Petroleum Refining	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	New	0.02	15	\$0.00	1%	2%	\$0.01	0.00	0.00	7th Power Plan
Petroleum Refining	Interior Lighting	Interior Lighting - Timeclocks and Timers	sqft	New	0.00	8	\$0.00	7%	7%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Petroleum Refining	Interior Lighting	Interior Lighting - Skylights	sqft	New	0.00	15	\$1.01	18%	24%	\$0.00	0.00	0.00	AEG Research
Petroleum Refining	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	sqft	New	0.03	16	\$1.81	5%	40%	\$4.03	0.00	0.01	7th Power Plan
Petroleum Refining	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	New	0.03	11	\$0.00	15%	50%	\$0.01	0.00	0.01	Illinois TRM
Petroleum Refining	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	sqft	New	0.04	8	\$0.03	15%	25%	\$0.08	0.00	0.01	7th Power Plan
Petroleum Refining	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	New	0.02	8	\$0.02	44%	60%	\$0.08	0.00	0.00	Pacific Gas and Electric Research
Petroleum Refining	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	New	0.03	7	\$1.19	15%	30%	\$4.40	0.00	0.00	AEG Research
Petroleum Refining	Process	Process - Conductivity Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Petroleum Refining	Process	Process - Timers and Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Petroleum Refining	Motors	Process - Timers and Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Petroleum Refining	Process	Refrigeration - Floating Head Pressure	employee	New	47.28	15	\$32.58	20%	50%	\$0.08	0.03	0.03	RTF Workbook
Petroleum Refining	Process	Refrigeration - System Optimization	employee	New	75.95	15	\$11.39	20%	50%	\$0.02	0.04	0.04	AEG Research
Petroleum Refining	Motors	Pumping System - Equipment Upgrade	employee	New	2,325.03	10	\$336.16	9%	38%	\$0.02	0.99	0.99	7th Power Plan
Petroleum Refining	Motors	Pumping System - System Optimization	employee	New	1,713.60	12	\$512.30	9%	38%	\$0.03	0.99	0.98	UNIDO Study on Industrial Energy Efficiency
Petroleum Refining	Motors	Pumping System - Variable Speed Drive	employee	New	1,687.76	10	\$532.99	9%	38%	\$0.04	0.87	0.87	UNIDO Study on Industrial Energy Efficiency

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Petroleum Refining	Motors	Fan System - Equipment Upgrade	employee	New	210.22	10	\$20.78	9%	38%	\$0.01	0.11	0.11	UNIDO Study on Industrial Energy Efficiency
Petroleum Refining	Motors	Fan System - Flow Optimization	employee	New	248.12	10	\$34.39	9%	38%	\$0.02	0.13	0.13	UNIDO Study on Industrial Energy Efficiency
Petroleum Refining	Motors	Fan System - Variable Speed Drive	employee	New	362.94	10	\$173.03	9%	38%	\$0.06	0.19	0.19	UNIDO Study on Industrial Energy Efficiency
Petroleum Refining	Motors	Compressed Air - Equipment Upgrade	employee	New	1,085.71	10	\$79.00	17%	50%	\$0.01	0.54	0.54	7th Power Plan
Petroleum Refining	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	New	0.00	15	\$0.00	16%	38%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Petroleum Refining	Motors	Compressed Air - Refrigerated Cycling Dryers	employee	New	0.00	10	\$0.00	16%	30%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Petroleum Refining	Motors	Compressed Air - System Controls	employee	New	237.09	10	\$56.49	9%	38%	\$0.03	0.10	0.10	UNIDO Study on Industrial Energy Efficiency
Petroleum Refining	Motors	Compressed Air - Leak Management Program	employee	New	615.91	10	\$56.78	18%	75%	\$0.01	0.52	0.52	7th Power Plan
Petroleum Refining	Motors	Compressed Air - Variable Speed Drive	employee	New	437.05	15	\$346.32	26%	45%	\$0.08	0.15	0.15	UNIDO Study on Industrial Energy Efficiency
Petroleum Refining	Motors	Compressed Air - Low Pressure-Drop Filters	employee	New	14.57	10	\$5.34	17%	50%	\$0.05	0.01	0.01	Illinois TRM
Petroleum Refining	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	New	89.95	10	\$17.32	17%	50%	\$0.03	0.04	0.04	UNIDO Study on Industrial Energy Efficiency
Petroleum Refining	Motors	Compressed Air - Outside Air Intake	employee	New	0.00	20	\$0.00	17%	50%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Petroleum Refining	Motors	Compressed Air - Receiver Capacity Addition	employee	New	88.63	15	\$47.62	17%	50%	\$0.06	0.05	0.05	UNIDO Study on Industrial Energy Efficiency
Petroleum Refining	Motors	Material Handling - Variable Speed Drive	employee	New	489.92	10	\$177.51	25%	45%	\$0.05	0.18	0.18	7th Power Plan
Petroleum Refining	Motors	Motors - Green Rewind (<100 HP)	employee	New	34.98	10	\$15.27	10%	50%	\$0.06	0.13	0.13	7th Power Plan
Petroleum Refining	Motors	Motors - Green Rewind (100 HP+)	employee	New	19.73	10	\$5.42	6%	25%	\$0.04	0.03	0.03	7th Power Plan
Petroleum Refining	Motors	Switch from Belt Drive to Direct Drive	employee	New	301.56	12	\$67.05	16%	25%	\$0.03	0.29	0.29	2015-mdu-irp-report---volume-iii.pdf
Petroleum Refining	Motors	Motors - Synchronous Belts	employee	New	79.12	10	\$20.17	16%	36%	\$0.03	0.12	0.12	7th Power Plan
Petroleum Refining	Miscellaneous	Agriculture - Engine Block Timer	employee	New	164.83	3	\$2.03	0%	0%	\$0.00	0.00	0.00	Vermont TRM

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Petroleum Refining	Motors	Agriculture - Live Stock Waterer	employee	New	5,522.22	10	\$2,960.45	0%	0%	\$0.07	0.00	0.00	Ontario Power TRM
Petroleum Refining	Process	Dairy - Milk Precoolers	employee	New	315.17	15	\$146.70	0%	0%	\$0.05	0.00	0.00	Ontario Power TRM
Petroleum Refining	Process	Clean Room: Change Filter Strategy	employee	New	10.19	15	\$0.08	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Petroleum Refining	Process	Clean Room: Chiller Optimize	employee	New	93.82	15	\$8.69	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Petroleum Refining	Process	Clean Room: Clean Room HVAC	employee	New	56.73	15	\$10.49	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Petroleum Refining	Process	Elec Chip Fab: Solidstate Chiller	employee	New	56.73	15	\$32.94	0%	0%	\$0.06	0.00	0.00	7th Power Plan
Petroleum Refining	Process	Elec Chip Fab: Eliminate Exhaust	employee	New	1.27	15	\$0.27	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Petroleum Refining	Process	Elec Chip Fab: Exhaust Injector	employee	New	2.54	15	\$1.30	0%	0%	\$0.05	0.00	0.00	7th Power Plan
Petroleum Refining	Process	Elec Chip Fab: Reduce Gas Pressure	employee	New	2.55	15	\$0.03	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Petroleum Refining	Motors	Panel: Hydraulic Press	employee	New	742.31	10	\$177.40	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Petroleum Refining	Motors	Wood: Replace Pneumatic Conveyor	employee	New	805.88	10	\$13.29	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Petroleum Refining	Process	Metal: New Arc Furnace	employee	New	465.26	10	\$49.04	0%	0%	-\$0.07	0.00	0.00	7th Power Plan
Petroleum Refining	Process	Paper: Premium Control Large Material	employee	New	93.85	10	\$47.26	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Petroleum Refining	Process	Paper: Efficient Pulp Screen	employee	New	75.37	10	\$15.57	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Petroleum Refining	Process	Kraft: Effluent Treatment System	employee	New	75.37	10	\$6.38	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Petroleum Refining	Motors	Kraft: Efficient Agitator	employee	New	1,369.58	10	\$132.38	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Petroleum Refining	Process	Mech Pulp: Premium Process	employee	New	0.84	5	\$0.11	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Petroleum Refining	Motors	Mech Pulp: Refiner Plate Improvement	employee	New	11.58	1	\$0.50	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Petroleum Refining	Cooling	Transformer - High Efficiency	employee	New	9.27	10	\$47.41	15%	15%	\$0.02	0.00	0.00	7th Power Plan

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Petroleum Refining	Heating	Transformer - High Efficiency	employee	New	43.50	10	\$47.41	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Petroleum Refining	Ventilation	Transformer - High Efficiency	employee	New	0.90	10	\$47.41	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Petroleum Refining	Interior Lighting	Transformer - High Efficiency	employee	New	4.70	10	\$47.41	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Petroleum Refining	Exterior Lighting	Transformer - High Efficiency	employee	New	1.04	10	\$47.41	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Petroleum Refining	Motors	Transformer - High Efficiency	employee	New	290.42	10	\$47.41	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Petroleum Refining	Process	Transformer - High Efficiency	employee	New	37.59	10	\$47.41	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Petroleum Refining	Miscellaneous	Transformer - High Efficiency	employee	New	5.91	10	\$47.41	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Petroleum Refining	Cooling	Strategic Energy Management	employee	New	26.36	3	\$291.19	0%	5%	\$0.08	0.00	0.00	AEG Research
Petroleum Refining	Heating	Strategic Energy Management	employee	New	125.21	3	\$291.19	0%	5%	\$0.08	0.00	0.00	AEG Research
Petroleum Refining	Ventilation	Strategic Energy Management	employee	New	2.58	3	\$291.19	0%	5%	\$0.08	0.00	0.00	AEG Research
Petroleum Refining	Interior Lighting	Strategic Energy Management	employee	New	13.52	3	\$291.19	0%	5%	\$0.08	0.00	0.00	AEG Research
Petroleum Refining	Exterior Lighting	Strategic Energy Management	employee	New	3.01	3	\$291.19	0%	5%	\$0.08	0.00	0.00	AEG Research
Petroleum Refining	Motors	Strategic Energy Management	employee	New	839.00	3	\$291.19	0%	5%	\$0.08	0.01	0.01	AEG Research
Petroleum Refining	Process	Strategic Energy Management	employee	New	108.58	3	\$291.19	0%	5%	\$0.08	0.00	0.00	AEG Research
Petroleum Refining	Miscellaneous	Strategic Energy Management	employee	New	17.07	3	\$291.19	0%	5%	\$0.08	0.00	0.00	AEG Research
Petroleum Refining	Interior Lighting	Commissioning	employee	New	15.59	3	\$551.91	5%	39%	\$0.16	0.00	0.00	AEG Research
Petroleum Refining	Exterior Lighting	Commissioning	employee	New	3.47	3	\$551.91	5%	39%	\$0.16	0.00	0.00	AEG Research
Petroleum Refining	Motors	Commissioning	employee	New	967.84	3	\$551.91	5%	39%	\$0.16	0.06	0.06	AEG Research
Petroleum Refining	Process	Commissioning	employee	New	125.26	3	\$551.91	5%	39%	\$0.16	0.01	0.01	AEG Research

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Petroleum Refining	Miscellaneous	Commissioning	employee	New	19.69	3	\$551.91	5%	39%	\$0.16	0.00	0.00	AEG Research
Petroleum Refining	Interior Lighting	Retrocommissioning	employee	New	15.65	3	\$350.37	0%	0%	\$0.10	0.00	0.00	AEG Research
Petroleum Refining	Exterior Lighting	Retrocommissioning	employee	New	3.47	3	\$350.37	0%	0%	\$0.10	0.00	0.00	AEG Research
Petroleum Refining	Motors	Retrocommissioning	employee	New	968.07	3	\$350.37	0%	0%	\$0.10	0.00	0.00	AEG Research
Petroleum Refining	Process	Retrocommissioning	employee	New	125.29	3	\$350.37	0%	0%	\$0.10	0.00	0.00	AEG Research
Petroleum Refining	Miscellaneous	Retrocommissioning	employee	New	19.70	3	\$350.37	0%	0%	\$0.10	0.00	0.00	AEG Research
Petroleum Refining	Motors	Municipal Sewage Treatment	employee	New	299.57	12	\$168.99	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Petroleum Refining	Motors	Municipal Water Supply Treatment	employee	New	0.00	12	\$0.00	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Cooling	Insulation - Ceiling	sqft	Existing	0.12	45	\$1.28	15%	25%	\$0.14	0.42	0.45	Building Energy Simulation Tool
Stone Clay Glass Products	Heating	Insulation - Ceiling	sqft	Existing	0.54	45	\$1.28	15%	25%	\$0.14	2.05	2.12	Building Energy Simulation Tool
Stone Clay Glass Products	Ventilation	Insulation - Ceiling	sqft	Existing	0.02	45	\$1.28	15%	25%	\$0.14	0.29	0.34	Building Energy Simulation Tool
Stone Clay Glass Products	Cooling	Insulation - Ducting	sqft	Existing	0.05	20	\$0.84	15%	25%	\$1.04	0.15	0.17	Building Energy Simulation Tool
Stone Clay Glass Products	Heating	Insulation - Ducting	sqft	Existing	0.02	20	\$0.84	15%	25%	\$1.04	0.08	0.09	Building Energy Simulation Tool
Stone Clay Glass Products	Ventilation	Insulation - Ducting	sqft	Existing	0.00	20	\$0.84	15%	25%	\$1.04	0.01	0.01	Building Energy Simulation Tool
Stone Clay Glass Products	Cooling	Insulation - Wall Cavity	sqft	Existing	0.00	45	\$0.15	45%	50%	\$0.02	0.00	0.00	Building Energy Simulation Tool
Stone Clay Glass Products	Heating	Insulation - Wall Cavity	sqft	Existing	0.76	45	\$0.15	45%	50%	\$0.02	1.48	1.48	Building Energy Simulation Tool
Stone Clay Glass Products	Ventilation	Insulation - Wall Cavity	sqft	Existing	0.02	45	\$0.15	45%	50%	\$0.02	0.19	0.23	Building Energy Simulation Tool
Stone Clay Glass Products	Cooling	HVAC - Duct Repair and Sealing	sqft	Existing	0.02	18	\$0.00	15%	25%	\$0.00	0.06	0.06	Building Energy Simulation Tool
Stone Clay Glass Products	Heating	HVAC - Duct Repair and Sealing	sqft	Existing	0.05	18	\$0.00	15%	25%	\$0.00	0.21	0.21	Building Energy Simulation Tool

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Stone Clay Glass Products	Ventilation	HVAC - Duct Repair and Sealing	sqft	Existing	0.00	18	\$0.00	15%	25%	\$0.00	0.03	0.03	Building Energy Simulation Tool
Stone Clay Glass Products	Cooling	Chiller - Chilled Water Reset	sqft	Existing	0.05	10	\$0.01	15%	45%	\$0.03	0.14	0.15	AEG-BEST
Stone Clay Glass Products	Cooling	Chiller - Chilled Water Variable-Flow System	sqft	Existing	0.25	15	\$0.50	15%	60%	\$0.20	1.09	1.23	AEG-BEST
Stone Clay Glass Products	Cooling	Chiller - Variable Speed Fans	sqft	Existing	0.09	15	\$0.03	15%	75%	\$0.03	0.56	0.61	New Jersey TRM
Stone Clay Glass Products	Cooling	HVAC - Economizer	sqft	Existing	0.58	10	\$0.25	18%	30%	\$0.06	0.57	0.62	AEG-BEST
Stone Clay Glass Products	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.25	15%	35%	\$10.43	0.08	0.11	7th Power Plan
Stone Clay Glass Products	Cooling	Destratification Fans (HVLS)	sqft	Existing	0.16	15	\$0.63	15%	50%	\$0.04	2.07	2.26	AEG Research
Stone Clay Glass Products	Heating	Destratification Fans (HVLS)	sqft	Existing	1.39	15	\$0.63	15%	50%	\$0.04	20.33	20.51	AEG Research
Stone Clay Glass Products	Cooling	RTU - Maintenance	sqft	Existing	0.08	3	\$0.07	15%	75%	\$0.27	1.03	1.19	AEG Research
Stone Clay Glass Products	Cooling	Thermostat - WiFi/Interactive	sqft	Existing	0.28	5	\$0.66	5%	15%	\$0.09	0.96	1.05	7th Power Plan
Stone Clay Glass Products	Heating	Thermostat - WiFi/Interactive	sqft	Existing	1.27	5	\$0.66	5%	15%	\$0.09	4.82	4.99	7th Power Plan
Stone Clay Glass Products	Ventilation	Thermostat - WiFi/Interactive	sqft	Existing	0.04	5	\$0.66	5%	15%	\$0.09	0.68	0.81	7th Power Plan
Stone Clay Glass Products	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	1.12	15	\$0.35	7%	33%	\$0.03	9.18	11.59	7th Power Plan
Stone Clay Glass Products	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	1.53	15	\$0.58	7%	33%	\$0.03	12.18	15.86	7th Power Plan
Stone Clay Glass Products	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	Existing	0.02	15	\$0.00	1%	2%	\$0.01	0.05	0.07	7th Power Plan
Stone Clay Glass Products	Interior Lighting	Interior Lighting - Timers and Timers	sqft	Existing	0.00	8	\$0.00	7%	7%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Stone Clay Glass Products	Interior Lighting	Interior Lighting - Skylights	sqft	Existing	0.00	15	\$1.01	15%	23%	\$0.00	0.00	0.00	AEG Research
Stone Clay Glass Products	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	sqft	Existing	0.03	16	\$1.81	5%	40%	\$4.03	1.35	2.18	7th Power Plan
Stone Clay Glass Products	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	Existing	0.04	11	\$0.00	15%	50%	\$0.01	1.53	2.19	Illinois TRM

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Stone Clay Glass Products	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	sqft	Existing	0.05	8	\$0.03	15%	25%	\$0.08	1.85	2.85	7th Power Plan
Stone Clay Glass Products	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	Existing	0.03	8	\$0.02	33%	60%	\$0.08	2.56	4.07	Pacific Gas and Electric Research
Stone Clay Glass Products	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	Existing	0.03	7	\$1.19	15%	30%	\$4.46	1.60	2.69	AEG Research
Stone Clay Glass Products	Process	Process - Conductivity Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Process	Process - Timers and Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Motors	Process - Timers and Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Process	Refrigeration - Floating Head Pressure	employee	Existing	55.93	15	\$54.40	20%	50%	\$0.11	2.00	2.00	RTF Workbook
Stone Clay Glass Products	Process	Refrigeration - System Optimization	employee	Existing	89.62	15	\$38.31	20%	50%	\$0.05	3.20	3.20	AEG Research
Stone Clay Glass Products	Motors	Pumping System - Equipment Upgrade	employee	Existing	781.79	10	\$112.76	9%	38%	\$0.02	26.65	26.98	7th Power Plan
Stone Clay Glass Products	Motors	Pumping System - System Optimization	employee	Existing	579.57	12	\$171.84	9%	38%	\$0.03	19.17	19.51	UNIDO Study on Industrial Energy Efficiency
Stone Clay Glass Products	Motors	Pumping System - Variable Speed Drive	employee	Existing	574.42	10	\$178.78	9%	38%	\$0.04	18.95	19.40	UNIDO Study on Industrial Energy Efficiency
Stone Clay Glass Products	Motors	Fan System - Equipment Upgrade	employee	Existing	610.42	10	\$59.84	9%	38%	\$0.02	20.33	20.40	UNIDO Study on Industrial Energy Efficiency
Stone Clay Glass Products	Motors	Fan System - Flow Optimization	employee	Existing	718.51	10	\$99.01	9%	38%	\$0.02	23.89	24.05	UNIDO Study on Industrial Energy Efficiency
Stone Clay Glass Products	Motors	Fan System - Variable Speed Drive	employee	Existing	1,048.87	10	\$498.23	9%	38%	\$0.06	34.24	35.80	UNIDO Study on Industrial Energy Efficiency
Stone Clay Glass Products	Motors	Compressed Air - Equipment Upgrade	employee	Existing	351.70	10	\$25.59	17%	50%	\$0.01	14.05	14.05	7th Power Plan
Stone Clay Glass Products	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	Existing	0.00	15	\$0.00	16%	38%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Stone Clay Glass Products	Motors	Compressed Air - Refrigerated Cycling Dryers	employee	Existing	0.00	10	\$0.00	16%	30%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Stone Clay Glass Products	Motors	Compressed Air - System Controls	employee	Existing	78.00	10	\$18.30	9%	38%	\$0.03	2.65	2.71	UNIDO Study on Industrial Energy Efficiency
Stone Clay Glass Products	Motors	Compressed Air - Leak Management Program	employee	Existing	200.36	10	\$18.39	18%	75%	\$0.02	13.71	13.74	7th Power Plan

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Stone Clay Glass Products	Motors	Compressed Air - Variable Speed Drive	employee	Existing	142.09	15	\$112.18	26%	45%	\$0.08	3.18	3.35	UNIDO Study on Industrial Energy Efficiency
Stone Clay Glass Products	Motors	Compressed Air - Low Pressure-Drop Filters	employee	Existing	4.74	10	\$1.73	17%	50%	\$0.05	0.19	0.20	Illinois TRM
Stone Clay Glass Products	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	Existing	29.37	10	\$5.61	17%	50%	\$0.03	1.16	1.19	UNIDO Study on Industrial Energy Efficiency
Stone Clay Glass Products	Motors	Compressed Air - Outside Air Intake	employee	Existing	0.00	20	\$0.00	17%	50%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Stone Clay Glass Products	Motors	Compressed Air - Receiver Capacity Addition	employee	Existing	29.13	15	\$15.43	17%	50%	\$0.06	1.15	1.18	UNIDO Study on Industrial Energy Efficiency
Stone Clay Glass Products	Motors	Material Handling - Variable Speed Drive	employee	Existing	4,162.08	10	\$1,476.28	25%	45%	\$0.05	96.19	98.79	7th Power Plan
Stone Clay Glass Products	Motors	Motors - Green Rewind (<100 HP)	employee	Existing	57.70	10	\$25.07	10%	50%	\$0.06	13.23	13.80	7th Power Plan
Stone Clay Glass Products	Motors	Motors - Green Rewind (100 HP+)	employee	Existing	32.87	10	\$8.90	6%	25%	\$0.04	3.61	3.70	7th Power Plan
Stone Clay Glass Products	Motors	Switch from Belt Drive to Direct Drive	employee	Existing	500.02	12	\$110.04	16%	25%	\$0.03	27.62	27.99	2015-mdu-irp-report---volume-iii.pdf
Stone Clay Glass Products	Motors	Motors - Synchronous Belts	employee	Existing	131.98	10	\$33.10	16%	36%	\$0.03	15.66	16.07	7th Power Plan
Stone Clay Glass Products	Miscellaneous	Agriculture - Engine Block Timer	employee	Existing	1,181.15	3	\$14.57	0%	0%	\$0.00	0.00	0.00	Vermont TRM
Stone Clay Glass Products	Motors	Agriculture - Live Stock Waterer	employee	Existing	1,849.96	10	\$993.01	0%	0%	\$0.07	0.00	0.00	Ontario Power TRM
Stone Clay Glass Products	Process	Dairy - Milk Precoolers	employee	Existing	372.90	15	\$173.10	0%	0%	\$0.05	0.00	0.00	Ontario Power TRM
Stone Clay Glass Products	Process	Clean Room: Change Filter Strategy	employee	Existing	83.79	15	\$0.62	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Process	Clean Room: Chiller Optimize	employee	Existing	110.71	15	\$10.25	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Process	Clean Room: Clean Room HVAC	employee	Existing	67.22	15	\$12.37	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Process	Elec Chip Fab: Solidstate Chiller	employee	Existing	67.12	15	\$38.86	0%	0%	\$0.05	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Process	Elec Chip Fab: Eliminate Exhaust	employee	Existing	10.47	15	\$2.22	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Process	Elec Chip Fab: Exhaust Injector	employee	Existing	20.92	15	\$10.72	0%	0%	\$0.04	0.00	0.00	7th Power Plan

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Stone Clay Glass Products	Process	Elec Chip Fab: Reduce Gas Pressure	employee	Existing	20.95	15	\$0.22	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Motors	Panel: Hydraulic Press	employee	Existing	6,278.64	10	\$1,475.40	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Motors	Wood: Replace Pneumatic Conveyor	employee	Existing	6,702.32	10	\$110.49	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Process	Metal: New Arc Furnace	employee	Existing	5,476.92	10	\$574.93	0%	0%	-\$0.20	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Process	Paper: Premium Control Large Material	employee	Existing	611.22	10	\$306.48	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Process	Paper: Efficient Pulp Screen	employee	Existing	490.70	10	\$100.95	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Process	Kraft: Effluent Treatment System	employee	Existing	490.70	10	\$41.39	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Motors	Kraft: Efficient Agitator	employee	Existing	11,486.93	10	\$1,100.98	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Process	Mech Pulp: Premium Process	employee	Existing	5.49	5	\$0.71	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Motors	Mech Pulp: Refiner Plate Improvement	employee	Existing	96.21	1	\$4.20	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Cooling	Transformer - High Efficiency	employee	Existing	41.96	10	\$122.81	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Heating	Transformer - High Efficiency	employee	Existing	187.90	10	\$122.81	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Ventilation	Transformer - High Efficiency	employee	Existing	5.30	10	\$122.81	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Interior Lighting	Transformer - High Efficiency	employee	Existing	26.22	10	\$122.81	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Exterior Lighting	Transformer - High Efficiency	employee	Existing	5.66	10	\$122.81	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Motors	Transformer - High Efficiency	employee	Existing	476.04	10	\$122.81	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Process	Transformer - High Efficiency	employee	Existing	244.78	10	\$122.81	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Miscellaneous	Transformer - High Efficiency	employee	Existing	44.70	10	\$122.81	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Cooling	Strategic Energy Management	employee	Existing	116.00	3	\$754.26	0%	0%	\$0.08	0.00	0.00	AEG Research

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Stone Clay Glass Products	Heating	Strategic Energy Management	employee	Existing	537.19	3	\$754.26	0%	0%	\$0.08	0.00	0.00	AEG Research
Stone Clay Glass Products	Ventilation	Strategic Energy Management	employee	Existing	15.16	3	\$754.26	0%	0%	\$0.08	0.00	0.00	AEG Research
Stone Clay Glass Products	Interior Lighting	Strategic Energy Management	employee	Existing	74.70	3	\$754.26	0%	0%	\$0.08	0.00	0.00	AEG Research
Stone Clay Glass Products	Exterior Lighting	Strategic Energy Management	employee	Existing	16.24	3	\$754.26	0%	0%	\$0.08	0.00	0.00	AEG Research
Stone Clay Glass Products	Motors	Strategic Energy Management	employee	Existing	1,363.34	3	\$754.26	0%	0%	\$0.08	0.00	0.00	AEG Research
Stone Clay Glass Products	Process	Strategic Energy Management	employee	Existing	700.91	3	\$754.26	0%	0%	\$0.08	0.00	0.00	AEG Research
Stone Clay Glass Products	Miscellaneous	Strategic Energy Management	employee	Existing	127.90	3	\$754.26	0%	0%	\$0.08	0.00	0.00	AEG Research
Stone Clay Glass Products	Interior Lighting	Commissioning	employee	Existing	86.19	3	\$1,234.02	0%	0%	\$0.15	0.00	0.00	AEG Research
Stone Clay Glass Products	Exterior Lighting	Commissioning	employee	Existing	18.74	3	\$1,234.02	0%	0%	\$0.15	0.00	0.00	AEG Research
Stone Clay Glass Products	Motors	Commissioning	employee	Existing	1,573.09	3	\$1,234.02	0%	0%	\$0.15	0.00	0.00	AEG Research
Stone Clay Glass Products	Process	Commissioning	employee	Existing	808.74	3	\$1,234.02	0%	0%	\$0.15	0.00	0.00	AEG Research
Stone Clay Glass Products	Miscellaneous	Commissioning	employee	Existing	147.58	3	\$1,234.02	0%	0%	\$0.15	0.00	0.00	AEG Research
Stone Clay Glass Products	Interior Lighting	Retrocommissioning	employee	Existing	87.40	3	\$783.38	10%	40%	\$0.10	2.32	3.32	AEG Research
Stone Clay Glass Products	Exterior Lighting	Retrocommissioning	employee	Existing	18.88	3	\$783.38	10%	40%	\$0.10	0.51	0.74	AEG Research
Stone Clay Glass Products	Motors	Retrocommissioning	employee	Existing	1,586.81	3	\$783.38	10%	40%	\$0.10	51.51	53.48	AEG Research
Stone Clay Glass Products	Process	Retrocommissioning	employee	Existing	815.94	3	\$783.38	10%	40%	\$0.10	27.12	27.15	AEG Research
Stone Clay Glass Products	Miscellaneous	Retrocommissioning	employee	Existing	149.02	3	\$783.38	10%	40%	\$0.10	6.27	4.88	AEG Research
Stone Clay Glass Products	Motors	Municipal Sewage Treatment	employee	Existing	100.97	12	\$56.68	0%	0%	\$0.06	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Motors	Municipal Water Supply Treatment	employee	Existing	0.00	12	\$0.00	0%	0%	\$0.00	0.00	0.00	7th Power Plan

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Stone Clay Glass Products	Cooling	Insulation - Ceiling	sqft	New	0.11	45	\$1.28	15%	25%	\$0.16	0.15	0.15	Building Energy Simulation Tool
Stone Clay Glass Products	Heating	Insulation - Ceiling	sqft	New	0.52	45	\$1.28	15%	25%	\$0.16	0.72	0.72	Building Energy Simulation Tool
Stone Clay Glass Products	Ventilation	Insulation - Ceiling	sqft	New	0.01	45	\$1.28	15%	25%	\$0.16	0.09	0.10	Building Energy Simulation Tool
Stone Clay Glass Products	Cooling	Insulation - Ducting	sqft	New	0.04	20	\$0.84	15%	25%	\$1.11	0.06	0.06	Building Energy Simulation Tool
Stone Clay Glass Products	Heating	Insulation - Ducting	sqft	New	0.02	20	\$0.84	15%	25%	\$1.11	0.03	0.03	Building Energy Simulation Tool
Stone Clay Glass Products	Ventilation	Insulation - Ducting	sqft	New	0.00	20	\$0.84	15%	25%	\$1.11	0.00	0.00	Building Energy Simulation Tool
Stone Clay Glass Products	Cooling	Insulation - Wall Cavity	sqft	New	0.00	45	\$0.15	45%	50%	\$0.02	0.00	0.00	Building Energy Simulation Tool
Stone Clay Glass Products	Heating	Insulation - Wall Cavity	sqft	New	0.71	45	\$0.15	45%	50%	\$0.02	0.50	0.50	Building Energy Simulation Tool
Stone Clay Glass Products	Ventilation	Insulation - Wall Cavity	sqft	New	0.01	45	\$0.15	45%	50%	\$0.02	0.06	0.06	Building Energy Simulation Tool
Stone Clay Glass Products	Cooling	HVAC - Duct Repair and Sealing	sqft	New	0.01	18	\$0.00	15%	25%	\$0.00	0.02	0.02	Building Energy Simulation Tool
Stone Clay Glass Products	Heating	HVAC - Duct Repair and Sealing	sqft	New	0.05	18	\$0.00	15%	25%	\$0.00	0.06	0.06	Building Energy Simulation Tool
Stone Clay Glass Products	Ventilation	HVAC - Duct Repair and Sealing	sqft	New	0.00	18	\$0.00	15%	25%	\$0.00	0.01	0.01	Building Energy Simulation Tool
Stone Clay Glass Products	Cooling	Chiller - Chilled Water Reset	sqft	New	0.04	10	\$0.01	15%	45%	\$0.03	0.02	0.02	AEG-BEST
Stone Clay Glass Products	Cooling	Chiller - Chilled Water Variable-Flow System	sqft	New	0.21	15	\$0.50	15%	60%	\$0.24	0.22	0.23	AEG-BEST
Stone Clay Glass Products	Cooling	Chiller - Variable Speed Fans	sqft	New	0.08	15	\$0.03	15%	75%	\$0.04	0.11	0.11	New Jersey TRM
Stone Clay Glass Products	Cooling	HVAC - Economizer	sqft	New	0.53	10	\$0.25	18%	30%	\$0.06	0.10	0.10	AEG-BEST
Stone Clay Glass Products	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.25	15%	35%	\$12.47	0.02	0.02	7th Power Plan
Stone Clay Glass Products	Cooling	Destratification Fans (HVLS)	sqft	New	0.14	15	\$0.63	15%	50%	\$0.05	0.45	0.47	AEG Research
Stone Clay Glass Products	Heating	Destratification Fans (HVLS)	sqft	New	1.30	15	\$0.63	15%	50%	\$0.05	4.37	4.38	AEG Research

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Stone Clay Glass Products	Cooling	RTU - Maintenance	sqft	New	0.08	3	\$0.07	15%	75%	\$0.28	0.07	0.07	AEG Research
Stone Clay Glass Products	Cooling	Thermostat - WiFi/Interactive	sqft	New	0.26	5	\$0.66	5%	15%	\$0.09	0.04	0.05	7th Power Plan
Stone Clay Glass Products	Heating	Thermostat - WiFi/Interactive	sqft	New	1.22	5	\$0.66	5%	15%	\$0.09	0.22	0.22	7th Power Plan
Stone Clay Glass Products	Ventilation	Thermostat - WiFi/Interactive	sqft	New	0.03	5	\$0.66	5%	15%	\$0.09	0.03	0.03	7th Power Plan
Stone Clay Glass Products	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	1.02	15	\$0.35	22%	41%	\$0.03	3.13	3.84	7th Power Plan
Stone Clay Glass Products	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	1.39	15	\$0.58	22%	41%	\$0.03	4.25	5.28	7th Power Plan
Stone Clay Glass Products	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	New	0.02	15	\$0.00	1%	2%	\$0.01	0.01	0.01	7th Power Plan
Stone Clay Glass Products	Interior Lighting	Interior Lighting - Timeclocks and Timers	sqft	New	0.00	8	\$0.00	7%	7%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Stone Clay Glass Products	Interior Lighting	Interior Lighting - Skylights	sqft	New	0.00	15	\$1.01	18%	24%	\$0.00	0.00	0.00	AEG Research
Stone Clay Glass Products	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	sqft	New	0.03	16	\$1.81	5%	40%	\$4.03	0.33	0.46	7th Power Plan
Stone Clay Glass Products	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	New	0.03	11	\$0.00	15%	50%	\$0.01	0.30	0.40	Illinois TRM
Stone Clay Glass Products	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	sqft	New	0.04	8	\$0.03	15%	25%	\$0.08	0.28	0.43	7th Power Plan
Stone Clay Glass Products	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	New	0.02	8	\$0.02	44%	60%	\$0.08	0.24	0.36	Pacific Gas and Electric Research
Stone Clay Glass Products	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	New	0.03	7	\$1.19	15%	30%	\$4.40	0.24	0.37	AEG Research
Stone Clay Glass Products	Process	Process - Conductivity Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Process	Process - Timers and Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Motors	Process - Timers and Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Process	Refrigeration - Floating Head Pressure	employee	New	55.97	15	\$38.44	20%	50%	\$0.08	0.46	0.46	RTF Workbook
Stone Clay Glass Products	Process	Refrigeration - System Optimization	employee	New	89.62	15	\$13.44	20%	50%	\$0.02	0.73	0.73	AEG Research

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Stone Clay Glass Products	Motors	Pumping System - Equipment Upgrade	employee	New	787.30	10	\$112.76	9%	38%	\$0.02	5.01	5.02	7th Power Plan
Stone Clay Glass Products	Motors	Pumping System - System Optimization	employee	New	586.87	12	\$171.84	9%	38%	\$0.03	5.05	5.05	UNIDO Study on Industrial Energy Efficiency
Stone Clay Glass Products	Motors	Pumping System - Variable Speed Drive	employee	New	584.10	10	\$178.78	9%	38%	\$0.04	4.51	4.51	UNIDO Study on Industrial Energy Efficiency
Stone Clay Glass Products	Motors	Fan System - Equipment Upgrade	employee	New	612.33	10	\$59.84	9%	38%	\$0.02	4.72	4.72	UNIDO Study on Industrial Energy Efficiency
Stone Clay Glass Products	Motors	Fan System - Flow Optimization	employee	New	722.06	10	\$99.01	9%	38%	\$0.02	5.57	5.56	UNIDO Study on Industrial Energy Efficiency
Stone Clay Glass Products	Motors	Fan System - Variable Speed Drive	employee	New	1,079.49	10	\$498.23	9%	38%	\$0.06	8.34	8.36	UNIDO Study on Industrial Energy Efficiency
Stone Clay Glass Products	Motors	Compressed Air - Equipment Upgrade	employee	New	351.70	10	\$25.59	17%	50%	\$0.01	2.61	2.61	7th Power Plan
Stone Clay Glass Products	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	New	0.00	15	\$0.00	16%	38%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Stone Clay Glass Products	Motors	Compressed Air - Refrigerated Cycling Dryers	employee	New	0.00	10	\$0.00	16%	30%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Stone Clay Glass Products	Motors	Compressed Air - System Controls	employee	New	79.11	10	\$18.30	9%	38%	\$0.03	0.50	0.51	UNIDO Study on Industrial Energy Efficiency
Stone Clay Glass Products	Motors	Compressed Air - Leak Management Program	employee	New	200.68	10	\$18.39	18%	75%	\$0.02	2.55	2.55	7th Power Plan
Stone Clay Glass Products	Motors	Compressed Air - Variable Speed Drive	employee	New	146.01	15	\$112.18	26%	45%	\$0.08	0.76	0.77	UNIDO Study on Industrial Energy Efficiency
Stone Clay Glass Products	Motors	Compressed Air - Low Pressure-Drop Filters	employee	New	4.87	10	\$1.73	17%	50%	\$0.05	0.04	0.04	Illinois TRM
Stone Clay Glass Products	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	New	29.74	10	\$5.61	17%	50%	\$0.03	0.22	0.22	UNIDO Study on Industrial Energy Efficiency
Stone Clay Glass Products	Motors	Compressed Air - Outside Air Intake	employee	New	0.00	20	\$0.00	17%	50%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Stone Clay Glass Products	Motors	Compressed Air - Receiver Capacity Addition	employee	New	29.60	15	\$15.43	17%	50%	\$0.06	0.27	0.27	UNIDO Study on Industrial Energy Efficiency
Stone Clay Glass Products	Motors	Material Handling - Variable Speed Drive	employee	New	4,239.47	10	\$1,476.28	25%	45%	\$0.05	22.97	22.98	7th Power Plan
Stone Clay Glass Products	Motors	Motors - Green Rewind (<100 HP)	employee	New	59.31	10	\$25.07	10%	50%	\$0.06	3.22	3.22	7th Power Plan
Stone Clay Glass Products	Motors	Motors - Green Rewind (100 HP+)	employee	New	33.42	10	\$8.90	6%	25%	\$0.04	0.86	0.86	7th Power Plan

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Stone Clay Glass Products	Motors	Switch from Belt Drive to Direct Drive	employee	New	505.08	12	\$110.04	16%	25%	\$0.03	7.24	7.24	2015-mdu-irp-report---volume-iii.pdf
Stone Clay Glass Products	Motors	Motors - Synchronous Belts	employee	New	133.90	10	\$33.10	16%	36%	\$0.03	2.99	3.00	7th Power Plan
Stone Clay Glass Products	Miscellaneous	Agriculture - Engine Block Timer	employee	New	1,181.15	3	\$14.57	0%	0%	\$0.00	0.00	0.00	Vermont TRM
Stone Clay Glass Products	Motors	Agriculture - Live Stock Waterer	employee	New	1,909.99	10	\$993.01	0%	0%	\$0.07	0.00	0.00	Ontario Power TRM
Stone Clay Glass Products	Process	Dairy - Milk Precoolers	employee	New	373.15	15	\$173.10	0%	0%	\$0.05	0.00	0.00	Ontario Power TRM
Stone Clay Glass Products	Process	Clean Room: Change Filter Strategy	employee	New	83.79	15	\$0.62	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Process	Clean Room: Chiller Optimize	employee	New	110.71	15	\$10.25	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Process	Clean Room: Clean Room HVAC	employee	New	67.17	15	\$12.37	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Process	Elec Chip Fab: Solidstate Chiller	employee	New	67.17	15	\$38.86	0%	0%	\$0.05	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Process	Elec Chip Fab: Eliminate Exhaust	employee	New	10.47	15	\$2.22	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Process	Elec Chip Fab: Exhaust Injector	employee	New	20.93	15	\$10.72	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Process	Elec Chip Fab: Reduce Gas Pressure	employee	New	20.95	15	\$0.22	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Motors	Panel: Hydraulic Press	employee	New	6,368.10	10	\$1,475.40	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Motors	Wood: Replace Pneumatic Conveyor	employee	New	6,702.32	10	\$110.49	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Process	Metal: New Arc Furnace	employee	New	5,472.84	10	\$574.93	0%	0%	-\$0.20	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Process	Paper: Premium Control Large Material	employee	New	611.90	10	\$306.48	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Process	Paper: Efficient Pulp Screen	employee	New	490.34	10	\$100.95	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Process	Kraft: Effluent Treatment System	employee	New	490.34	10	\$41.39	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Motors	Kraft: Efficient Agitator	employee	New	11,523.01	10	\$1,100.98	0%	0%	\$0.01	0.00	0.00	7th Power Plan

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Stone Clay Glass Products	Process	Mech Pulp: Premium Process	employee	New	5.49	5	\$0.71	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Motors	Mech Pulp: Refiner Plate Improvement	employee	New	99.33	1	\$4.20	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Cooling	Transformer - High Efficiency	employee	New	38.62	10	\$121.14	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Heating	Transformer - High Efficiency	employee	New	181.11	10	\$121.14	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Ventilation	Transformer - High Efficiency	employee	New	3.73	10	\$121.14	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Interior Lighting	Transformer - High Efficiency	employee	New	23.93	10	\$121.14	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Exterior Lighting	Transformer - High Efficiency	employee	New	5.30	10	\$121.14	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Motors	Transformer - High Efficiency	employee	New	491.49	10	\$121.14	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Process	Transformer - High Efficiency	employee	New	245.05	10	\$121.14	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Miscellaneous	Transformer - High Efficiency	employee	New	42.34	10	\$121.14	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Cooling	Strategic Energy Management	employee	New	109.78	3	\$744.02	0%	0%	\$0.08	0.00	0.00	AEG Research
Stone Clay Glass Products	Heating	Strategic Energy Management	employee	New	521.38	3	\$744.02	0%	0%	\$0.08	0.00	0.00	AEG Research
Stone Clay Glass Products	Ventilation	Strategic Energy Management	employee	New	10.73	3	\$744.02	0%	0%	\$0.08	0.00	0.00	AEG Research
Stone Clay Glass Products	Interior Lighting	Strategic Energy Management	employee	New	68.90	3	\$744.02	0%	0%	\$0.08	0.00	0.00	AEG Research
Stone Clay Glass Products	Exterior Lighting	Strategic Energy Management	employee	New	15.32	3	\$744.02	0%	0%	\$0.08	0.00	0.00	AEG Research
Stone Clay Glass Products	Motors	Strategic Energy Management	employee	New	1,419.86	3	\$744.02	0%	0%	\$0.08	0.00	0.00	AEG Research
Stone Clay Glass Products	Process	Strategic Energy Management	employee	New	707.93	3	\$744.02	0%	0%	\$0.08	0.00	0.00	AEG Research
Stone Clay Glass Products	Miscellaneous	Strategic Energy Management	employee	New	122.33	3	\$744.02	0%	0%	\$0.08	0.00	0.00	AEG Research
Stone Clay Glass Products	Interior Lighting	Commissioning	employee	New	79.50	3	\$1,239.34	10%	40%	\$0.15	0.06	0.09	AEG Research

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Stone Clay Glass Products	Exterior Lighting	Commissioning	employee	New	17.68	3	\$1,239.34	10%	40%	\$0.15	0.01	0.02	AEG Research
Stone Clay Glass Products	Motors	Commissioning	employee	New	1,638.30	3	\$1,239.34	10%	40%	\$0.15	1.25	1.28	AEG Research
Stone Clay Glass Products	Process	Commissioning	employee	New	816.85	3	\$1,239.34	10%	40%	\$0.15	0.62	0.62	AEG Research
Stone Clay Glass Products	Miscellaneous	Commissioning	employee	New	141.15	3	\$1,239.34	10%	40%	\$0.15	0.13	0.08	AEG Research
Stone Clay Glass Products	Interior Lighting	Retrocommissioning	employee	New	79.78	3	\$786.76	0%	0%	\$0.10	0.00	0.00	AEG Research
Stone Clay Glass Products	Exterior Lighting	Retrocommissioning	employee	New	17.68	3	\$786.76	0%	0%	\$0.10	0.00	0.00	AEG Research
Stone Clay Glass Products	Motors	Retrocommissioning	employee	New	1,638.30	3	\$786.76	0%	0%	\$0.10	0.00	0.00	AEG Research
Stone Clay Glass Products	Process	Retrocommissioning	employee	New	816.85	3	\$786.76	0%	0%	\$0.10	0.00	0.00	AEG Research
Stone Clay Glass Products	Miscellaneous	Retrocommissioning	employee	New	141.15	3	\$786.76	0%	0%	\$0.10	0.00	0.00	AEG Research
Stone Clay Glass Products	Motors	Municipal Sewage Treatment	employee	New	103.79	12	\$56.68	0%	0%	\$0.06	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Motors	Municipal Water Supply Treatment	employee	New	0.00	12	\$0.00	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Cooling	Insulation - Ceiling	sqft	Existing	0.12	45	\$1.28	15%	25%	\$0.14	0.27	0.29	Building Energy Simulation Tool
Transportation Equipment Mfg	Heating	Insulation - Ceiling	sqft	Existing	0.54	45	\$1.28	15%	25%	\$0.14	1.30	1.34	Building Energy Simulation Tool
Transportation Equipment Mfg	Ventilation	Insulation - Ceiling	sqft	Existing	0.02	45	\$1.28	15%	25%	\$0.14	0.18	0.22	Building Energy Simulation Tool
Transportation Equipment Mfg	Cooling	Insulation - Ducting	sqft	Existing	0.05	20	\$0.84	15%	25%	\$1.04	0.10	0.11	Building Energy Simulation Tool
Transportation Equipment Mfg	Heating	Insulation - Ducting	sqft	Existing	0.02	20	\$0.84	15%	25%	\$1.04	0.05	0.06	Building Energy Simulation Tool
Transportation Equipment Mfg	Ventilation	Insulation - Ducting	sqft	Existing	0.00	20	\$0.84	15%	25%	\$1.04	0.01	0.01	Building Energy Simulation Tool
Transportation Equipment Mfg	Cooling	Insulation - Wall Cavity	sqft	Existing	0.00	45	\$0.15	45%	50%	\$0.02	0.00	0.00	Building Energy Simulation Tool
Transportation Equipment Mfg	Heating	Insulation - Wall Cavity	sqft	Existing	0.76	45	\$0.15	45%	50%	\$0.02	0.94	0.94	Building Energy Simulation Tool

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Transportation Equipment Mfg	Ventilation	Insulation - Wall Cavity	sqft	Existing	0.02	45	\$0.15	45%	50%	\$0.02	0.12	0.15	Building Energy Simulation Tool
Transportation Equipment Mfg	Cooling	HVAC - Duct Repair and Sealing	sqft	Existing	0.02	18	\$0.00	15%	25%	\$0.00	0.04	0.04	Building Energy Simulation Tool
Transportation Equipment Mfg	Heating	HVAC - Duct Repair and Sealing	sqft	Existing	0.05	18	\$0.00	15%	25%	\$0.00	0.13	0.13	Building Energy Simulation Tool
Transportation Equipment Mfg	Ventilation	HVAC - Duct Repair and Sealing	sqft	Existing	0.00	18	\$0.00	15%	25%	\$0.00	0.02	0.02	Building Energy Simulation Tool
Transportation Equipment Mfg	Cooling	Chiller - Chilled Water Reset	sqft	Existing	0.05	10	\$0.01	15%	45%	\$0.03	0.09	0.10	AEG-BEST
Transportation Equipment Mfg	Cooling	Chiller - Chilled Water Variable-Flow System	sqft	Existing	0.25	15	\$0.50	15%	60%	\$0.20	0.70	0.78	AEG-BEST
Transportation Equipment Mfg	Cooling	Chiller - Variable Speed Fans	sqft	Existing	0.09	15	\$0.03	15%	75%	\$0.03	0.36	0.39	New Jersey TRM
Transportation Equipment Mfg	Cooling	HVAC - Economizer	sqft	Existing	0.24	10	\$0.25	18%	30%	\$0.13	0.34	0.38	AEG-BEST
Transportation Equipment Mfg	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.25	15%	35%	\$10.43	0.05	0.07	7th Power Plan
Transportation Equipment Mfg	Cooling	Destratification Fans (HVLS)	sqft	Existing	0.16	15	\$0.63	15%	50%	\$0.04	1.32	1.44	AEG Research
Transportation Equipment Mfg	Heating	Destratification Fans (HVLS)	sqft	Existing	1.39	15	\$0.63	15%	50%	\$0.04	12.88	12.99	AEG Research
Transportation Equipment Mfg	Cooling	RTU - Maintenance	sqft	Existing	0.08	3	\$0.07	15%	75%	\$0.27	0.65	0.75	AEG Research
Transportation Equipment Mfg	Cooling	Thermostat - WiFi/Interactive	sqft	Existing	0.28	5	\$0.66	5%	15%	\$0.09	0.61	0.66	7th Power Plan
Transportation Equipment Mfg	Heating	Thermostat - WiFi/Interactive	sqft	Existing	1.27	5	\$0.66	5%	15%	\$0.09	3.05	3.16	7th Power Plan
Transportation Equipment Mfg	Ventilation	Thermostat - WiFi/Interactive	sqft	Existing	0.04	5	\$0.66	5%	15%	\$0.09	0.43	0.51	7th Power Plan
Transportation Equipment Mfg	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.49	15	\$0.35	7%	33%	\$0.06	5.28	6.66	7th Power Plan
Transportation Equipment Mfg	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.67	15	\$0.58	7%	33%	\$0.07	6.99	9.11	7th Power Plan
Transportation Equipment Mfg	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	Existing	0.02	15	\$0.00	1%	2%	\$0.01	0.03	0.04	7th Power Plan
Transportation Equipment Mfg	Interior Lighting	Interior Lighting - Timers and Timers	sqft	Existing	0.00	8	\$0.00	7%	7%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx

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Transportation Equipment Mfg	Interior Lighting	Interior Lighting - Skylights	sqft	Existing	0.00	15	\$1.01	15%	23%	\$0.00	0.00	0.00	AEG Research
Transportation Equipment Mfg	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	sqft	Existing	0.03	16	\$1.81	5%	40%	\$4.03	0.75	1.22	7th Power Plan
Transportation Equipment Mfg	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	Existing	0.04	11	\$0.00	15%	50%	\$0.01	0.86	1.23	Illinois TRM
Transportation Equipment Mfg	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	sqft	Existing	0.05	8	\$0.03	15%	25%	\$0.08	1.04	1.60	7th Power Plan
Transportation Equipment Mfg	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	Existing	0.03	8	\$0.02	33%	60%	\$0.08	1.44	2.28	Pacific Gas and Electric Research
Transportation Equipment Mfg	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	Existing	0.03	7	\$1.19	15%	30%	\$4.46	0.90	1.51	AEG Research
Transportation Equipment Mfg	Process	Process - Conductivity Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Process	Process - Timers and Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Motors	Process - Timers and Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Process	Refrigeration - Floating Head Pressure	employee	Existing	66.92	15	\$65.23	20%	50%	\$0.11	0.95	0.95	RTF Workbook
Transportation Equipment Mfg	Process	Refrigeration - System Optimization	employee	Existing	107.47	15	\$45.93	20%	50%	\$0.05	1.52	1.52	AEG Research
Transportation Equipment Mfg	Motors	Pumping System - Equipment Upgrade	employee	Existing	282.38	10	\$41.39	9%	38%	\$0.02	3.80	3.88	7th Power Plan
Transportation Equipment Mfg	Motors	Pumping System - System Optimization	employee	Existing	208.98	12	\$63.07	9%	38%	\$0.04	2.73	2.80	UNIDO Study on Industrial Energy Efficiency
Transportation Equipment Mfg	Motors	Pumping System - Variable Speed Drive	employee	Existing	206.39	10	\$65.62	9%	38%	\$0.04	2.68	2.78	UNIDO Study on Industrial Energy Efficiency
Transportation Equipment Mfg	Motors	Fan System - Equipment Upgrade	employee	Existing	74.43	10	\$7.45	9%	38%	\$0.01	0.98	0.99	UNIDO Study on Industrial Energy Efficiency
Transportation Equipment Mfg	Motors	Fan System - Flow Optimization	employee	Existing	87.82	10	\$12.33	9%	38%	\$0.02	1.15	1.17	UNIDO Study on Industrial Energy Efficiency
Transportation Equipment Mfg	Motors	Fan System - Variable Speed Drive	employee	Existing	127.60	10	\$62.06	9%	38%	\$0.06	1.64	1.74	UNIDO Study on Industrial Energy Efficiency
Transportation Equipment Mfg	Motors	Compressed Air - Equipment Upgrade	employee	Existing	514.79	10	\$37.46	17%	50%	\$0.01	8.14	8.14	7th Power Plan

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Transportation Equipment Mfg	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	Existing	0.00	15	\$0.00	16%	38%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Transportation Equipment Mfg	Motors	Compressed Air - Refrigerated Cycling Dryers	employee	Existing	0.00	10	\$0.00	16%	30%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Transportation Equipment Mfg	Motors	Compressed Air - System Controls	employee	Existing	112.09	10	\$26.78	9%	38%	\$0.03	1.50	1.56	UNIDO Study on Industrial Energy Efficiency
Transportation Equipment Mfg	Motors	Compressed Air - Leak Management Program	employee	Existing	290.12	10	\$26.92	18%	75%	\$0.01	7.84	7.91	7th Power Plan
Transportation Equipment Mfg	Motors	Compressed Air - Variable Speed Drive	employee	Existing	203.65	15	\$164.21	26%	45%	\$0.08	1.79	1.92	UNIDO Study on Industrial Energy Efficiency
Transportation Equipment Mfg	Motors	Compressed Air - Low Pressure-Drop Filters	employee	Existing	6.79	10	\$2.53	17%	50%	\$0.05	0.10	0.11	Illinois TRM
Transportation Equipment Mfg	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	Existing	42.27	10	\$8.21	17%	50%	\$0.03	0.66	0.68	UNIDO Study on Industrial Energy Efficiency
Transportation Equipment Mfg	Motors	Compressed Air - Outside Air Intake	employee	Existing	0.00	20	\$0.00	17%	50%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Transportation Equipment Mfg	Motors	Compressed Air - Receiver Capacity Addition	employee	Existing	41.78	15	\$22.58	17%	50%	\$0.06	0.65	0.68	UNIDO Study on Industrial Energy Efficiency
Transportation Equipment Mfg	Motors	Material Handling - Variable Speed Drive	employee	Existing	1,251.69	10	\$453.78	25%	45%	\$0.05	11.39	11.83	7th Power Plan
Transportation Equipment Mfg	Motors	Motors - Green Rewind (<100 HP)	employee	Existing	18.06	10	\$8.04	10%	50%	\$0.06	1.63	1.72	7th Power Plan
Transportation Equipment Mfg	Motors	Motors - Green Rewind (100 HP+)	employee	Existing	10.32	10	\$2.85	6%	25%	\$0.04	0.45	0.46	7th Power Plan
Transportation Equipment Mfg	Motors	Switch from Belt Drive to Direct Drive	employee	Existing	157.60	12	\$35.27	16%	25%	\$0.03	3.43	3.51	2015-mdu-irp-report---volume-iii.pdf
Transportation Equipment Mfg	Motors	Motors - Synchronous Belts	employee	Existing	41.45	10	\$10.61	16%	36%	\$0.03	1.94	2.02	7th Power Plan
Transportation Equipment Mfg	Miscellaneous	Agriculture - Engine Block Timer	employee	Existing	1,087.00	3	\$13.41	0%	0%	\$0.00	0.00	0.00	Vermont TRM
Transportation Equipment Mfg	Motors	Agriculture - Live Stock Waterer	employee	Existing	666.06	10	\$364.47	0%	0%	\$0.07	0.00	0.00	Ontario Power TRM
Transportation Equipment Mfg	Process	Dairy - Milk Precoolers	employee	Existing	446.11	15	\$207.57	0%	0%	\$0.05	0.00	0.00	Ontario Power TRM
Transportation Equipment Mfg	Process	Clean Room: Change Filter Strategy	employee	Existing	194.71	15	\$1.44	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Process	Clean Room: Chiller Optimize	employee	Existing	132.75	15	\$12.29	0%	0%	\$0.01	0.00	0.00	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Transportation Equipment Mfg	Process	Clean Room: Clean Room HVAC	employee	Existing	80.60	15	\$14.84	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Process	Elec Chip Fab: Solidstate Chiller	employee	Existing	80.30	15	\$46.60	0%	0%	\$0.06	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Process	Elec Chip Fab: Eliminate Exhaust	employee	Existing	24.34	15	\$5.17	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Process	Elec Chip Fab: Exhaust Injector	employee	Existing	48.49	15	\$24.92	0%	0%	\$0.05	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Process	Elec Chip Fab: Reduce Gas Pressure	employee	Existing	48.68	15	\$0.50	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Motors	Panel: Hydraulic Press	employee	Existing	1,894.89	10	\$453.51	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Motors	Wood: Replace Pneumatic Conveyor	employee	Existing	2,060.15	10	\$33.96	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Process	Metal: New Arc Furnace	employee	Existing	1,825.88	10	\$191.67	0%	0%	-\$0.03	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Process	Paper: Premium Control Large Material	employee	Existing	276.53	10	\$139.19	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Process	Paper: Efficient Pulp Screen	employee	Existing	222.86	10	\$45.85	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Process	Kraft: Effluent Treatment System	employee	Existing	222.86	10	\$18.80	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Motors	Kraft: Efficient Agitator	employee	Existing	3,456.03	10	\$338.42	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Process	Mech Pulp: Premium Process	employee	Existing	2.49	5	\$0.32	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Motors	Mech Pulp: Refiner Plate Improvement	employee	Existing	29.01	1	\$1.29	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Cooling	Transformer - High Efficiency	employee	Existing	67.71	10	\$87.81	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Heating	Transformer - High Efficiency	employee	Existing	300.83	10	\$87.81	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Ventilation	Transformer - High Efficiency	employee	Existing	8.48	10	\$87.81	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Interior Lighting	Transformer - High Efficiency	employee	Existing	37.16	10	\$87.81	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Exterior Lighting	Transformer - High Efficiency	employee	Existing	8.03	10	\$87.81	15%	15%	\$0.02	0.00	0.00	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Transportation Equipment Mfg	Motors	Transformer - High Efficiency	employee	Existing	149.69	10	\$87.81	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Process	Transformer - High Efficiency	employee	Existing	110.75	10	\$87.81	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Miscellaneous	Transformer - High Efficiency	employee	Existing	41.14	10	\$87.81	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Cooling	Strategic Energy Management	employee	Existing	185.72	3	\$539.30	0%	5%	\$0.08	0.07	0.08	AEG Research
Transportation Equipment Mfg	Heating	Strategic Energy Management	employee	Existing	860.07	3	\$539.30	0%	5%	\$0.08	0.37	0.39	AEG Research
Transportation Equipment Mfg	Ventilation	Strategic Energy Management	employee	Existing	24.27	3	\$539.30	0%	5%	\$0.08	0.05	0.06	AEG Research
Transportation Equipment Mfg	Interior Lighting	Strategic Energy Management	employee	Existing	105.75	3	\$539.30	0%	5%	\$0.08	0.18	0.27	AEG Research
Transportation Equipment Mfg	Exterior Lighting	Strategic Energy Management	employee	Existing	23.02	3	\$539.30	0%	5%	\$0.08	0.04	0.06	AEG Research
Transportation Equipment Mfg	Motors	Strategic Energy Management	employee	Existing	428.22	3	\$539.30	0%	5%	\$0.08	0.91	0.96	AEG Research
Transportation Equipment Mfg	Process	Strategic Energy Management	employee	Existing	316.74	3	\$539.30	0%	5%	\$0.08	0.69	0.70	AEG Research
Transportation Equipment Mfg	Miscellaneous	Strategic Energy Management	employee	Existing	117.55	3	\$539.30	0%	5%	\$0.08	0.32	0.25	AEG Research
Transportation Equipment Mfg	Interior Lighting	Commissioning	employee	Existing	121.89	3	\$523.48	0%	0%	\$0.14	0.00	0.00	AEG Research
Transportation Equipment Mfg	Exterior Lighting	Commissioning	employee	Existing	26.53	3	\$523.48	0%	0%	\$0.14	0.00	0.00	AEG Research
Transportation Equipment Mfg	Motors	Commissioning	employee	Existing	493.49	3	\$523.48	0%	0%	\$0.14	0.00	0.00	AEG Research
Transportation Equipment Mfg	Process	Commissioning	employee	Existing	365.00	3	\$523.48	0%	0%	\$0.14	0.00	0.00	AEG Research
Transportation Equipment Mfg	Miscellaneous	Commissioning	employee	Existing	135.45	3	\$523.48	0%	0%	\$0.14	0.00	0.00	AEG Research
Transportation Equipment Mfg	Interior Lighting	Retrocommissioning	employee	Existing	123.87	3	\$332.31	5%	39%	\$0.09	1.47	2.11	AEG Research
Transportation Equipment Mfg	Exterior Lighting	Retrocommissioning	employee	Existing	26.78	3	\$332.31	5%	39%	\$0.09	0.33	0.47	AEG Research
Transportation Equipment Mfg	Motors	Retrocommissioning	employee	Existing	498.97	3	\$332.31	5%	39%	\$0.09	7.24	7.57	AEG Research

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Transportation Equipment Mfg	Process	Retrocommissioning	employee	Existing	369.15	3	\$332.31	5%	39%	\$0.09	5.50	5.51	AEG Research
Transportation Equipment Mfg	Miscellaneous	Retrocommissioning	employee	Existing	137.14	3	\$332.31	5%	39%	\$0.09	2.59	2.01	AEG Research
Transportation Equipment Mfg	Motors	Municipal Sewage Treatment	employee	Existing	36.19	12	\$20.81	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Motors	Municipal Water Supply Treatment	employee	Existing	0.00	12	\$0.00	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Cooling	Insulation - Ceiling	sqft	New	0.11	45	\$1.28	15%	25%	\$0.16	0.09	0.09	Building Energy Simulation Tool
Transportation Equipment Mfg	Heating	Insulation - Ceiling	sqft	New	0.52	45	\$1.28	15%	25%	\$0.16	0.46	0.46	Building Energy Simulation Tool
Transportation Equipment Mfg	Ventilation	Insulation - Ceiling	sqft	New	0.01	45	\$1.28	15%	25%	\$0.16	0.06	0.06	Building Energy Simulation Tool
Transportation Equipment Mfg	Cooling	Insulation - Ducting	sqft	New	0.04	20	\$0.84	15%	25%	\$1.11	0.04	0.04	Building Energy Simulation Tool
Transportation Equipment Mfg	Heating	Insulation - Ducting	sqft	New	0.02	20	\$0.84	15%	25%	\$1.11	0.02	0.02	Building Energy Simulation Tool
Transportation Equipment Mfg	Ventilation	Insulation - Ducting	sqft	New	0.00	20	\$0.84	15%	25%	\$1.11	0.00	0.00	Building Energy Simulation Tool
Transportation Equipment Mfg	Cooling	Insulation - Wall Cavity	sqft	New	0.00	45	\$0.15	45%	50%	\$0.02	0.00	0.00	Building Energy Simulation Tool
Transportation Equipment Mfg	Heating	Insulation - Wall Cavity	sqft	New	0.71	45	\$0.15	45%	50%	\$0.02	0.31	0.31	Building Energy Simulation Tool
Transportation Equipment Mfg	Ventilation	Insulation - Wall Cavity	sqft	New	0.01	45	\$0.15	45%	50%	\$0.02	0.04	0.04	Building Energy Simulation Tool
Transportation Equipment Mfg	Cooling	HVAC - Duct Repair and Sealing	sqft	New	0.01	18	\$0.00	15%	25%	\$0.00	0.01	0.01	Building Energy Simulation Tool
Transportation Equipment Mfg	Heating	HVAC - Duct Repair and Sealing	sqft	New	0.05	18	\$0.00	15%	25%	\$0.00	0.04	0.04	Building Energy Simulation Tool
Transportation Equipment Mfg	Ventilation	HVAC - Duct Repair and Sealing	sqft	New	0.00	18	\$0.00	15%	25%	\$0.00	0.00	0.01	Building Energy Simulation Tool
Transportation Equipment Mfg	Cooling	Chiller - Chilled Water Reset	sqft	New	0.04	10	\$0.01	15%	45%	\$0.03	0.01	0.01	AEG-BEST
Transportation Equipment Mfg	Cooling	Chiller - Chilled Water Variable-Flow System	sqft	New	0.21	15	\$0.50	15%	60%	\$0.24	0.14	0.15	AEG-BEST
Transportation Equipment Mfg	Cooling	Chiller - Variable Speed Fans	sqft	New	0.08	15	\$0.03	15%	75%	\$0.04	0.07	0.07	New Jersey TRM

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Transportation Equipment Mfg	Cooling	HVAC - Economizer	sqft	New	0.23	10	\$0.25	18%	30%	\$0.14	0.06	0.06	AEG-BEST
Transportation Equipment Mfg	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.25	15%	35%	\$12.47	0.01	0.01	7th Power Plan
Transportation Equipment Mfg	Cooling	Destratification Fans (HVLS)	sqft	New	0.14	15	\$0.63	15%	50%	\$0.05	0.29	0.30	AEG Research
Transportation Equipment Mfg	Heating	Destratification Fans (HVLS)	sqft	New	1.30	15	\$0.63	15%	50%	\$0.05	2.77	2.78	AEG Research
Transportation Equipment Mfg	Cooling	RTU - Maintenance	sqft	New	0.08	3	\$0.07	15%	75%	\$0.28	0.04	0.05	AEG Research
Transportation Equipment Mfg	Cooling	Thermostat - WiFi/Interactive	sqft	New	0.26	5	\$0.66	5%	15%	\$0.09	0.03	0.03	7th Power Plan
Transportation Equipment Mfg	Heating	Thermostat - WiFi/Interactive	sqft	New	1.22	5	\$0.66	5%	15%	\$0.09	0.14	0.14	7th Power Plan
Transportation Equipment Mfg	Ventilation	Thermostat - WiFi/Interactive	sqft	New	0.03	5	\$0.66	5%	15%	\$0.09	0.02	0.02	7th Power Plan
Transportation Equipment Mfg	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.45	15	\$0.35	22%	41%	\$0.06	1.76	2.16	7th Power Plan
Transportation Equipment Mfg	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.61	15	\$0.58	22%	41%	\$0.07	2.39	2.96	7th Power Plan
Transportation Equipment Mfg	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	New	0.02	15	\$0.00	1%	2%	\$0.01	0.01	0.01	7th Power Plan
Transportation Equipment Mfg	Interior Lighting	Interior Lighting - Timeclocks and Timers	sqft	New	0.00	8	\$0.00	7%	7%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Transportation Equipment Mfg	Interior Lighting	Interior Lighting - Skylights	sqft	New	0.00	15	\$1.01	18%	24%	\$0.00	0.00	0.00	AEG Research
Transportation Equipment Mfg	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	sqft	New	0.03	16	\$1.81	5%	40%	\$4.03	0.19	0.26	7th Power Plan
Transportation Equipment Mfg	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	New	0.03	11	\$0.00	15%	50%	\$0.01	0.17	0.23	Illinois TRM
Transportation Equipment Mfg	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	sqft	New	0.04	8	\$0.03	15%	25%	\$0.08	0.16	0.24	7th Power Plan
Transportation Equipment Mfg	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	New	0.02	8	\$0.02	44%	60%	\$0.08	0.14	0.20	Pacific Gas and Electric Research
Transportation Equipment Mfg	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	New	0.03	7	\$1.19	15%	30%	\$4.40	0.14	0.21	AEG Research
Transportation Equipment Mfg	Process	Process - Conductivity Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A

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Transportation Equipment Mfg	Process	Process - Timers and Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Motors	Process - Timers and Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Process	Refrigeration - Floating Head Pressure	employee	New	67.04	15	\$46.10	20%	50%	\$0.08	0.22	0.22	RTF Workbook
Transportation Equipment Mfg	Process	Refrigeration - System Optimization	employee	New	107.47	15	\$16.12	20%	50%	\$0.02	0.35	0.35	AEG Research
Transportation Equipment Mfg	Motors	Pumping System - Equipment Upgrade	employee	New	286.91	10	\$41.39	9%	38%	\$0.02	0.72	0.72	7th Power Plan
Transportation Equipment Mfg	Motors	Pumping System - System Optimization	employee	New	213.69	12	\$63.07	9%	38%	\$0.04	0.73	0.73	UNIDO Study on Industrial Energy Efficiency
Transportation Equipment Mfg	Motors	Pumping System - Variable Speed Drive	employee	New	212.30	10	\$65.62	9%	38%	\$0.04	0.65	0.65	UNIDO Study on Industrial Energy Efficiency
Transportation Equipment Mfg	Motors	Fan System - Equipment Upgrade	employee	New	75.51	10	\$7.45	9%	38%	\$0.01	0.23	0.23	UNIDO Study on Industrial Energy Efficiency
Transportation Equipment Mfg	Motors	Fan System - Flow Optimization	employee	New	89.16	10	\$12.33	9%	38%	\$0.02	0.27	0.27	UNIDO Study on Industrial Energy Efficiency
Transportation Equipment Mfg	Motors	Fan System - Variable Speed Drive	employee	New	132.99	10	\$62.06	9%	38%	\$0.06	0.41	0.41	UNIDO Study on Industrial Energy Efficiency
Transportation Equipment Mfg	Motors	Compressed Air - Equipment Upgrade	employee	New	514.79	10	\$37.46	17%	50%	\$0.01	1.51	1.51	7th Power Plan
Transportation Equipment Mfg	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	New	0.00	15	\$0.00	16%	38%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Transportation Equipment Mfg	Motors	Compressed Air - Refrigerated Cycling Dryers	employee	New	0.00	10	\$0.00	16%	30%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Transportation Equipment Mfg	Motors	Compressed Air - System Controls	employee	New	114.83	10	\$26.78	9%	38%	\$0.03	0.29	0.29	UNIDO Study on Industrial Energy Efficiency
Transportation Equipment Mfg	Motors	Compressed Air - Leak Management Program	employee	New	292.24	10	\$26.92	18%	75%	\$0.01	1.47	1.47	7th Power Plan
Transportation Equipment Mfg	Motors	Compressed Air - Variable Speed Drive	employee	New	211.66	15	\$164.21	26%	45%	\$0.08	0.44	0.44	UNIDO Study on Industrial Energy Efficiency
Transportation Equipment Mfg	Motors	Compressed Air - Low Pressure-Drop Filters	employee	New	7.06	10	\$2.53	17%	50%	\$0.05	0.02	0.02	Illinois TRM
Transportation Equipment Mfg	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	New	43.20	10	\$8.21	17%	50%	\$0.03	0.13	0.13	UNIDO Study on Industrial Energy Efficiency
Transportation Equipment Mfg	Motors	Compressed Air - Outside Air Intake	employee	New	0.00	20	\$0.00	17%	50%	\$0.00	0.00	0.00	Michigan Energy Measures Database

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Transportation Equipment Mfg	Motors	Compressed Air - Receiver Capacity Addition	employee	New	42.94	15	\$22.58	17%	50%	\$0.06	0.16	0.16	UNIDO Study on Industrial Energy Efficiency
Transportation Equipment Mfg	Motors	Material Handling - Variable Speed Drive	employee	New	1,290.01	10	\$453.78	25%	45%	\$0.05	2.77	2.77	7th Power Plan
Transportation Equipment Mfg	Motors	Motors - Green Rewind (<100 HP)	employee	New	18.80	10	\$8.04	10%	50%	\$0.06	0.40	0.40	7th Power Plan
Transportation Equipment Mfg	Motors	Motors - Green Rewind (100 HP+)	employee	New	10.61	10	\$2.85	6%	25%	\$0.04	0.11	0.11	7th Power Plan
Transportation Equipment Mfg	Motors	Switch from Belt Drive to Direct Drive	employee	New	160.69	12	\$35.27	16%	25%	\$0.03	0.91	0.91	2015-mdu-irp-report---volume-iii.pdf
Transportation Equipment Mfg	Motors	Motors - Synchronous Belts	employee	New	42.52	10	\$10.61	16%	36%	\$0.03	0.38	0.38	7th Power Plan
Transportation Equipment Mfg	Miscellaneous	Agriculture - Engine Block Timer	employee	New	1,087.00	3	\$13.41	0%	0%	\$0.00	0.00	0.00	Vermont TRM
Transportation Equipment Mfg	Motors	Agriculture - Live Stock Waterer	employee	New	695.02	10	\$364.47	0%	0%	\$0.07	0.00	0.00	Ontario Power TRM
Transportation Equipment Mfg	Process	Dairy - Milk Precoolers	employee	New	446.92	15	\$207.57	0%	0%	\$0.05	0.00	0.00	Ontario Power TRM
Transportation Equipment Mfg	Process	Clean Room: Change Filter Strategy	employee	New	194.71	15	\$1.44	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Process	Clean Room: Chiller Optimize	employee	New	132.75	15	\$12.29	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Process	Clean Room: Clean Room HVAC	employee	New	80.44	15	\$14.84	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Process	Elec Chip Fab: Solidstate Chiller	employee	New	80.44	15	\$46.60	0%	0%	\$0.06	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Process	Elec Chip Fab: Eliminate Exhaust	employee	New	24.29	15	\$5.17	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Process	Elec Chip Fab: Exhaust Injector	employee	New	48.58	15	\$24.92	0%	0%	\$0.05	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Process	Elec Chip Fab: Reduce Gas Pressure	employee	New	48.68	15	\$0.50	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Motors	Panel: Hydraulic Press	employee	New	1,941.19	10	\$453.51	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Motors	Wood: Replace Pneumatic Conveyor	employee	New	2,060.15	10	\$33.96	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Process	Metal: New Arc Furnace	employee	New	1,822.29	10	\$191.67	0%	0%	-\$0.03	0.00	0.00	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Transportation Equipment Mfg	Process	Paper: Premium Control Large Material	employee	New	277.34	10	\$139.19	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Process	Paper: Efficient Pulp Screen	employee	New	222.42	10	\$45.85	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Process	Kraft: Effluent Treatment System	employee	New	222.42	10	\$18.80	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Motors	Kraft: Efficient Agitator	employee	New	3,506.19	10	\$338.42	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Process	Mech Pulp: Premium Process	employee	New	2.49	5	\$0.32	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Motors	Mech Pulp: Refiner Plate Improvement	employee	New	30.27	1	\$1.29	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Cooling	Transformer - High Efficiency	employee	New	62.06	10	\$84.99	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Heating	Transformer - High Efficiency	employee	New	289.97	10	\$84.99	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Ventilation	Transformer - High Efficiency	employee	New	5.97	10	\$84.99	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Interior Lighting	Transformer - High Efficiency	employee	New	33.96	10	\$84.99	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Exterior Lighting	Transformer - High Efficiency	employee	New	7.53	10	\$84.99	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Motors	Transformer - High Efficiency	employee	New	156.20	10	\$84.99	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Process	Transformer - High Efficiency	employee	New	111.07	10	\$84.99	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Miscellaneous	Transformer - High Efficiency	employee	New	38.97	10	\$84.99	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Cooling	Strategic Energy Management	employee	New	175.76	3	\$521.96	0%	5%	\$0.08	0.00	0.00	AEG Research
Transportation Equipment Mfg	Heating	Strategic Energy Management	employee	New	834.75	3	\$521.96	0%	5%	\$0.08	0.01	0.01	AEG Research
Transportation Equipment Mfg	Ventilation	Strategic Energy Management	employee	New	17.19	3	\$521.96	0%	5%	\$0.08	0.00	0.00	AEG Research
Transportation Equipment Mfg	Interior Lighting	Strategic Energy Management	employee	New	97.76	3	\$521.96	0%	5%	\$0.08	0.00	0.01	AEG Research
Transportation Equipment Mfg	Exterior Lighting	Strategic Energy Management	employee	New	21.74	3	\$521.96	0%	5%	\$0.08	0.00	0.00	AEG Research

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Transportation Equipment Mfg	Motors	Strategic Energy Management	employee	New	451.24	3	\$521.96	0%	5%	\$0.08	0.02	0.02	AEG Research
Transportation Equipment Mfg	Process	Strategic Energy Management	employee	New	320.87	3	\$521.96	0%	5%	\$0.08	0.02	0.02	AEG Research
Transportation Equipment Mfg	Miscellaneous	Strategic Energy Management	employee	New	112.58	3	\$521.96	0%	5%	\$0.08	0.01	0.00	AEG Research
Transportation Equipment Mfg	Interior Lighting	Commissioning	employee	New	112.77	3	\$531.02	5%	39%	\$0.15	0.04	0.06	AEG Research
Transportation Equipment Mfg	Exterior Lighting	Commissioning	employee	New	25.08	3	\$531.02	5%	39%	\$0.15	0.01	0.01	AEG Research
Transportation Equipment Mfg	Motors	Commissioning	employee	New	520.54	3	\$531.02	5%	39%	\$0.15	0.18	0.18	AEG Research
Transportation Equipment Mfg	Process	Commissioning	employee	New	370.15	3	\$531.02	5%	39%	\$0.15	0.13	0.13	AEG Research
Transportation Equipment Mfg	Miscellaneous	Commissioning	employee	New	129.87	3	\$531.02	5%	39%	\$0.15	0.05	0.03	AEG Research
Transportation Equipment Mfg	Interior Lighting	Retrocommissioning	employee	New	113.20	3	\$337.11	0%	0%	\$0.09	0.00	0.00	AEG Research
Transportation Equipment Mfg	Exterior Lighting	Retrocommissioning	employee	New	25.09	3	\$337.11	0%	0%	\$0.09	0.00	0.00	AEG Research
Transportation Equipment Mfg	Motors	Retrocommissioning	employee	New	520.67	3	\$337.11	0%	0%	\$0.09	0.00	0.00	AEG Research
Transportation Equipment Mfg	Process	Retrocommissioning	employee	New	370.24	3	\$337.11	0%	0%	\$0.09	0.00	0.00	AEG Research
Transportation Equipment Mfg	Miscellaneous	Retrocommissioning	employee	New	129.90	3	\$337.11	0%	0%	\$0.09	0.00	0.00	AEG Research
Transportation Equipment Mfg	Motors	Municipal Sewage Treatment	employee	New	37.68	12	\$20.81	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Motors	Municipal Water Supply Treatment	employee	New	0.00	12	\$0.00	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Wastewater	Cooling	Insulation - Ceiling	sqft	Existing	0.12	45	\$1.28	15%	25%	\$0.14	0.22	0.24	Building Energy Simulation Tool
Wastewater	Heating	Insulation - Ceiling	sqft	Existing	0.54	45	\$1.28	15%	25%	\$0.14	1.09	1.12	Building Energy Simulation Tool
Wastewater	Ventilation	Insulation - Ceiling	sqft	Existing	0.02	45	\$1.28	15%	25%	\$0.14	0.15	0.18	Building Energy Simulation Tool
Wastewater	Cooling	Insulation - Ducting	sqft	Existing	0.05	20	\$0.84	15%	25%	\$1.04	0.08	0.09	Building Energy Simulation Tool

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Wastewater	Heating	Insulation - Ducting	sqft	Existing	0.02	20	\$0.84	15%	25%	\$1.04	0.04	0.05	Building Energy Simulation Tool
Wastewater	Ventilation	Insulation - Ducting	sqft	Existing	0.00	20	\$0.84	15%	25%	\$1.04	0.01	0.01	Building Energy Simulation Tool
Wastewater	Cooling	Insulation - Wall Cavity	sqft	Existing	0.00	45	\$0.15	45%	50%	\$0.02	0.00	0.00	Building Energy Simulation Tool
Wastewater	Heating	Insulation - Wall Cavity	sqft	Existing	0.76	45	\$0.15	45%	50%	\$0.02	0.78	0.79	Building Energy Simulation Tool
Wastewater	Ventilation	Insulation - Wall Cavity	sqft	Existing	0.02	45	\$0.15	45%	50%	\$0.02	0.10	0.12	Building Energy Simulation Tool
Wastewater	Cooling	HVAC - Duct Repair and Sealing	sqft	Existing	0.02	18	\$0.00	15%	25%	\$0.00	0.03	0.03	Building Energy Simulation Tool
Wastewater	Heating	HVAC - Duct Repair and Sealing	sqft	Existing	0.05	18	\$0.00	15%	25%	\$0.00	0.11	0.11	Building Energy Simulation Tool
Wastewater	Ventilation	HVAC - Duct Repair and Sealing	sqft	Existing	0.00	18	\$0.00	15%	25%	\$0.00	0.01	0.02	Building Energy Simulation Tool
Wastewater	Cooling	Chiller - Chilled Water Reset	sqft	Existing	0.05	10	\$0.01	15%	45%	\$0.03	0.07	0.08	AEG-BEST
Wastewater	Cooling	Chiller - Chilled Water Variable-Flow System	sqft	Existing	0.25	15	\$0.50	15%	60%	\$0.20	0.58	0.65	AEG-BEST
Wastewater	Cooling	Chiller - Variable Speed Fans	sqft	Existing	0.09	15	\$0.03	15%	75%	\$0.03	0.30	0.33	New Jersey TRM
Wastewater	Cooling	HVAC - Economizer	sqft	Existing	0.16	10	\$0.25	18%	30%	\$0.20	0.28	0.32	AEG-BEST
Wastewater	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.25	15%	35%	\$10.43	0.04	0.06	7th Power Plan
Wastewater	Cooling	Destratification Fans (HVLS)	sqft	Existing	0.16	15	\$0.63	15%	50%	\$0.04	1.11	1.20	AEG Research
Wastewater	Heating	Destratification Fans (HVLS)	sqft	Existing	1.39	15	\$0.63	15%	50%	\$0.04	10.77	10.86	AEG Research
Wastewater	Cooling	RTU - Maintenance	sqft	Existing	0.08	3	\$0.07	15%	75%	\$0.27	0.54	0.63	AEG Research
Wastewater	Cooling	Thermostat - WiFi/Interactive	sqft	Existing	0.28	5	\$0.66	5%	15%	\$0.09	0.51	0.55	7th Power Plan
Wastewater	Heating	Thermostat - WiFi/Interactive	sqft	Existing	1.27	5	\$0.66	5%	15%	\$0.09	2.55	2.64	7th Power Plan
Wastewater	Ventilation	Thermostat - WiFi/Interactive	sqft	Existing	0.04	5	\$0.66	5%	15%	\$0.09	0.36	0.43	7th Power Plan
Wastewater	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.31	15	\$0.35	7%	33%	\$0.09	5.52	6.97	7th Power Plan
Wastewater	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.43	15	\$0.58	7%	33%	\$0.11	7.32	9.53	7th Power Plan

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Wastewater	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	Existing	0.02	15	\$0.00	1%	2%	\$0.01	0.03	0.04	7th Power Plan
Wastewater	Interior Lighting	Interior Lighting - Timeclocks and Timers	sqft	Existing	0.00	8	\$0.00	7%	7%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Wastewater	Interior Lighting	Interior Lighting - Skylights	sqft	Existing	0.00	15	\$1.01	15%	23%	\$0.00	0.00	0.00	AEG Research
Wastewater	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	sqft	Existing	0.03	16	\$1.81	5%	40%	\$4.03	0.81	1.31	7th Power Plan
Wastewater	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	Existing	0.04	11	\$0.00	15%	50%	\$0.01	0.92	1.32	Illinois TRM
Wastewater	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	sqft	Existing	0.05	8	\$0.03	15%	25%	\$0.08	1.11	1.71	7th Power Plan
Wastewater	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	Existing	0.03	8	\$0.02	33%	60%	\$0.08	1.54	2.44	Pacific Gas and Electric Research
Wastewater	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	Existing	0.03	7	\$1.19	15%	30%	\$4.46	0.96	1.61	AEG Research
Wastewater	Process	Process - Conductivity Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Wastewater	Process	Process - Timers and Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Wastewater	Motors	Process - Timers and Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Wastewater	Process	Refrigeration - Floating Head Pressure	employee	Existing	0.00	15	\$247.91	20%	50%	\$0.00	0.00	0.00	RTF Workbook
Wastewater	Process	Refrigeration - System Optimization	employee	Existing	0.00	15	\$174.57	20%	50%	\$0.00	0.00	0.00	AEG Research
Wastewater	Motors	Pumping System - Equipment Upgrade	employee	Existing	5,692.52	10	\$839.77	9%	38%	\$0.02	64.10	66.33	7th Power Plan
Wastewater	Motors	Pumping System - System Optimization	employee	Existing	4,190.46	12	\$1,279.81	9%	38%	\$0.03	45.71	47.56	UNIDO Study on Industrial Energy Efficiency
Wastewater	Motors	Pumping System - Variable Speed Drive	employee	Existing	4,135.53	10	\$1,331.48	9%	38%	\$0.04	44.90	47.16	UNIDO Study on Industrial Energy Efficiency
Wastewater	Motors	Fan System - Equipment Upgrade	employee	Existing	7,978.98	10	\$779.75	9%	38%	\$0.02	88.64	88.78	UNIDO Study on Industrial Energy Efficiency
Wastewater	Motors	Fan System - Flow Optimization	employee	Existing	9,281.43	10	\$1,290.13	9%	38%	\$0.02	102.51	103.92	UNIDO Study on Industrial Energy Efficiency
Wastewater	Motors	Fan System - Variable Speed Drive	employee	Existing	13,379.74	10	\$6,491.85	9%	38%	\$0.06	144.43	153.45	UNIDO Study on Industrial Energy Efficiency

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Wastewater	Motors	Compressed Air - Equipment Upgrade	employee	Existing	544.65	10	\$39.63	17%	50%	\$0.01	7.25	7.25	7th Power Plan
Wastewater	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	Existing	0.00	15	\$0.00	16%	38%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Wastewater	Motors	Compressed Air - Refrigerated Cycling Dryers	employee	Existing	0.00	10	\$0.00	16%	30%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Wastewater	Motors	Compressed Air - System Controls	employee	Existing	116.71	10	\$28.34	9%	38%	\$0.03	1.30	1.38	UNIDO Study on Industrial Energy Efficiency
Wastewater	Motors	Compressed Air - Leak Management Program	employee	Existing	310.79	10	\$28.49	18%	75%	\$0.02	7.09	7.10	7th Power Plan
Wastewater	Motors	Compressed Air - Variable Speed Drive	employee	Existing	215.58	15	\$173.73	26%	45%	\$0.08	1.60	1.71	UNIDO Study on Industrial Energy Efficiency
Wastewater	Motors	Compressed Air - Low Pressure-Drop Filters	employee	Existing	7.19	10	\$2.68	17%	50%	\$0.05	0.09	0.10	Illinois TRM
Wastewater	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	Existing	44.15	10	\$8.69	17%	50%	\$0.03	0.58	0.61	UNIDO Study on Industrial Energy Efficiency
Wastewater	Motors	Compressed Air - Outside Air Intake	employee	Existing	0.00	20	\$0.00	17%	50%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Wastewater	Motors	Compressed Air - Receiver Capacity Addition	employee	Existing	43.57	15	\$23.89	17%	50%	\$0.06	0.57	0.60	UNIDO Study on Industrial Energy Efficiency
Wastewater	Motors	Material Handling - Variable Speed Drive	employee	Existing	1,204.32	10	\$443.99	25%	45%	\$0.05	9.14	9.67	7th Power Plan
Wastewater	Motors	Motors - Green Rewind (<100 HP)	employee	Existing	187.53	10	\$83.23	10%	50%	\$0.06	14.22	15.08	7th Power Plan
Wastewater	Motors	Motors - Green Rewind (100 HP+)	employee	Existing	105.51	10	\$29.54	6%	25%	\$0.04	3.82	4.01	7th Power Plan
Wastewater	Motors	Switch from Belt Drive to Direct Drive	employee	Existing	1,611.31	12	\$365.34	16%	25%	\$0.03	29.35	30.41	2015-mdu-irp-report---volume-iii.pdf
Wastewater	Motors	Motors - Synchronous Belts	employee	Existing	423.50	10	\$109.91	16%	36%	\$0.03	16.54	17.52	7th Power Plan
Wastewater	Miscellaneous	Agriculture - Engine Block Timer	employee	Existing	2,074.94	3	\$25.60	0%	0%	\$0.00	0.00	0.00	Vermont TRM
Wastewater	Motors	Agriculture - Live Stock Waterer	employee	Existing	13,206.54	10	\$7,395.64	0%	0%	\$0.07	0.00	0.00	Ontario Power TRM
Wastewater	Process	Dairy - Milk Precoolers	employee	Existing	0.00	15	\$788.86	0%	0%	\$0.00	0.00	0.00	Ontario Power TRM
Wastewater	Process	Clean Room: Change Filter Strategy	employee	Existing	0.00	15	\$10.04	0%	0%	\$0.00	0.00	0.00	7th Power Plan

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Wastewater	Process	Clean Room: Chiller Optimize	employee	Existing	0.00	15	\$46.71	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Wastewater	Process	Clean Room: Clean Room HVAC	employee	Existing	0.00	15	\$56.39	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Wastewater	Process	Elec Chip Fab: Solidstate Chiller	employee	Existing	0.00	15	\$177.11	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Wastewater	Process	Elec Chip Fab: Eliminate Exhaust	employee	Existing	0.00	15	\$36.13	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Wastewater	Process	Elec Chip Fab: Exhaust Injector	employee	Existing	0.00	15	\$174.26	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Wastewater	Process	Elec Chip Fab: Reduce Gas Pressure	employee	Existing	0.00	15	\$3.49	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Wastewater	Motors	Panel: Hydraulic Press	employee	Existing	1,823.99	10	\$443.72	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Wastewater	Motors	Wood: Replace Pneumatic Conveyor	employee	Existing	2,015.72	10	\$33.23	0%	0%	-\$0.01	0.00	0.00	7th Power Plan
Wastewater	Process	Metal: New Arc Furnace	employee	Existing	0.00	10	\$160.78	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Wastewater	Process	Paper: Premium Control Large Material	employee	Existing	1,078.70	10	\$539.63	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Wastewater	Process	Paper: Efficient Pulp Screen	employee	Existing	864.01	10	\$177.76	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Wastewater	Process	Kraft: Effluent Treatment System	employee	Existing	864.01	10	\$72.88	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Wastewater	Motors	Kraft: Efficient Agitator	employee	Existing	3,465.72	10	\$331.12	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Wastewater	Process	Mech Pulp: Premium Process	employee	Existing	9.67	5	\$1.25	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Wastewater	Motors	Mech Pulp: Refiner Plate Improvement	employee	Existing	27.73	1	\$1.26	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Wastewater	Cooling	Transformer - High Efficiency	employee	Existing	67.21	10	\$262.35	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Wastewater	Heating	Transformer - High Efficiency	employee	Existing	298.60	10	\$262.35	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Wastewater	Ventilation	Transformer - High Efficiency	employee	Existing	8.42	10	\$262.35	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Wastewater	Interior Lighting	Transformer - High Efficiency	employee	Existing	47.27	10	\$262.35	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Wastewater	Exterior Lighting	Transformer - High Efficiency	employee	Existing	10.21	10	\$262.35	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Wastewater	Motors	Transformer - High Efficiency	employee	Existing	1,514.93	10	\$262.35	15%	15%	\$0.02	0.00	0.00	7th Power Plan

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Wastewater	Process	Transformer - High Efficiency	employee	Existing	86.40	10	\$262.35	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Wastewater	Miscellaneous	Transformer - High Efficiency	employee	Existing	78.53	10	\$262.35	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Wastewater	Cooling	Strategic Energy Management	employee	Existing	184.34	3	\$1,611.24	0%	5%	\$0.08	0.06	0.07	AEG Research
Wastewater	Heating	Strategic Energy Management	employee	Existing	853.69	3	\$1,611.24	0%	5%	\$0.08	0.31	0.32	AEG Research
Wastewater	Ventilation	Strategic Energy Management	employee	Existing	24.09	3	\$1,611.24	0%	5%	\$0.08	0.04	0.05	AEG Research
Wastewater	Interior Lighting	Strategic Energy Management	employee	Existing	134.51	3	\$1,611.24	0%	5%	\$0.08	0.20	0.28	AEG Research
Wastewater	Exterior Lighting	Strategic Energy Management	employee	Existing	29.24	3	\$1,611.24	0%	5%	\$0.08	0.04	0.06	AEG Research
Wastewater	Motors	Strategic Energy Management	employee	Existing	4,334.13	3	\$1,611.24	0%	5%	\$0.08	7.63	8.20	AEG Research
Wastewater	Process	Strategic Energy Management	employee	Existing	247.11	3	\$1,611.24	0%	5%	\$0.08	0.45	0.46	AEG Research
Wastewater	Miscellaneous	Strategic Energy Management	employee	Existing	224.39	3	\$1,611.24	0%	5%	\$0.08	0.52	0.41	AEG Research
Wastewater	Interior Lighting	Commissioning	employee	Existing	155.04	3	\$2,868.93	0%	0%	\$0.15	0.00	0.00	AEG Research
Wastewater	Exterior Lighting	Commissioning	employee	Existing	33.70	3	\$2,868.93	0%	0%	\$0.15	0.00	0.00	AEG Research
Wastewater	Motors	Commissioning	employee	Existing	4,994.78	3	\$2,868.93	0%	0%	\$0.15	0.00	0.00	AEG Research
Wastewater	Process	Commissioning	employee	Existing	284.76	3	\$2,868.93	0%	0%	\$0.15	0.00	0.00	AEG Research
Wastewater	Miscellaneous	Commissioning	employee	Existing	258.55	3	\$2,868.93	0%	0%	\$0.15	0.00	0.00	AEG Research
Wastewater	Interior Lighting	Retrocommissioning	employee	Existing	157.55	3	\$1,821.26	5%	39%	\$0.10	1.58	2.26	AEG Research
Wastewater	Exterior Lighting	Retrocommissioning	employee	Existing	34.03	3	\$1,821.26	5%	39%	\$0.10	0.35	0.50	AEG Research
Wastewater	Motors	Retrocommissioning	employee	Existing	5,049.75	3	\$1,821.26	5%	39%	\$0.10	60.90	64.83	AEG Research
Wastewater	Process	Retrocommissioning	employee	Existing	288.00	3	\$1,821.26	5%	39%	\$0.10	3.62	3.62	AEG Research
Wastewater	Miscellaneous	Retrocommissioning	employee	Existing	261.78	3	\$1,821.26	5%	39%	\$0.10	4.16	3.24	AEG Research
Wastewater	Motors	Municipal Sewage Treatment	employee	Existing	737.01	12	\$422.17	15%	35%	\$0.06	5.59	5.92	7th Power Plan
Wastewater	Motors	Municipal Water Supply Treatment	employee	Existing	0.00	12	\$0.00	0%	0%	\$0.00	0.00	0.00	7th Power Plan

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Wastewater	Cooling	Insulation - Ceiling	sqft	New	0.11	45	\$1.28	15%	25%	\$0.16	0.08	0.08	Building Energy Simulation Tool
Wastewater	Heating	Insulation - Ceiling	sqft	New	0.52	45	\$1.28	15%	25%	\$0.16	0.38	0.38	Building Energy Simulation Tool
Wastewater	Ventilation	Insulation - Ceiling	sqft	New	0.01	45	\$1.28	15%	25%	\$0.16	0.05	0.05	Building Energy Simulation Tool
Wastewater	Cooling	Insulation - Ducting	sqft	New	0.04	20	\$0.84	15%	25%	\$1.11	0.03	0.03	Building Energy Simulation Tool
Wastewater	Heating	Insulation - Ducting	sqft	New	0.02	20	\$0.84	15%	25%	\$1.11	0.02	0.02	Building Energy Simulation Tool
Wastewater	Ventilation	Insulation - Ducting	sqft	New	0.00	20	\$0.84	15%	25%	\$1.11	0.00	0.00	Building Energy Simulation Tool
Wastewater	Cooling	Insulation - Wall Cavity	sqft	New	0.00	45	\$0.15	45%	50%	\$0.02	0.00	0.00	Building Energy Simulation Tool
Wastewater	Heating	Insulation - Wall Cavity	sqft	New	0.71	45	\$0.15	45%	50%	\$0.02	0.26	0.26	Building Energy Simulation Tool
Wastewater	Ventilation	Insulation - Wall Cavity	sqft	New	0.01	45	\$0.15	45%	50%	\$0.02	0.03	0.03	Building Energy Simulation Tool
Wastewater	Cooling	HVAC - Duct Repair and Sealing	sqft	New	0.01	18	\$0.00	15%	25%	\$0.00	0.01	0.01	Building Energy Simulation Tool
Wastewater	Heating	HVAC - Duct Repair and Sealing	sqft	New	0.05	18	\$0.00	15%	25%	\$0.00	0.03	0.03	Building Energy Simulation Tool
Wastewater	Ventilation	HVAC - Duct Repair and Sealing	sqft	New	0.00	18	\$0.00	15%	25%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Wastewater	Cooling	Chiller - Chilled Water Reset	sqft	New	0.04	10	\$0.01	15%	45%	\$0.03	0.01	0.01	AEG-BEST
Wastewater	Cooling	Chiller - Chilled Water Variable-Flow System	sqft	New	0.21	15	\$0.50	15%	60%	\$0.24	0.12	0.12	AEG-BEST
Wastewater	Cooling	Chiller - Variable Speed Fans	sqft	New	0.08	15	\$0.03	15%	75%	\$0.04	0.06	0.06	New Jersey TRM
Wastewater	Cooling	HVAC - Economizer	sqft	New	0.14	10	\$0.25	18%	30%	\$0.22	0.05	0.05	AEG-BEST
Wastewater	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.25	15%	35%	\$12.47	0.01	0.01	7th Power Plan
Wastewater	Cooling	Destratification Fans (HVLS)	sqft	New	0.14	15	\$0.63	15%	50%	\$0.05	0.24	0.25	AEG Research
Wastewater	Heating	Destratification Fans (HVLS)	sqft	New	1.30	15	\$0.63	15%	50%	\$0.05	2.31	2.32	AEG Research
Wastewater	Cooling	RTU - Maintenance	sqft	New	0.08	3	\$0.07	15%	75%	\$0.28	0.04	0.04	AEG Research
Wastewater	Cooling	Thermostat - WiFi/Interactive	sqft	New	0.26	5	\$0.66	5%	15%	\$0.09	0.02	0.02	7th Power Plan

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Wastewater	Heating	Thermostat - WiFi/Interactive	sqft	New	1.22	5	\$0.66	5%	15%	\$0.09	0.12	0.12	7th Power Plan
Wastewater	Ventilation	Thermostat - WiFi/Interactive	sqft	New	0.03	5	\$0.66	5%	15%	\$0.09	0.01	0.02	7th Power Plan
Wastewater	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.29	15	\$0.35	22%	41%	\$0.09	1.88	2.31	7th Power Plan
Wastewater	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.39	15	\$0.58	22%	41%	\$0.11	2.56	3.17	7th Power Plan
Wastewater	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	New	0.02	15	\$0.00	1%	2%	\$0.01	0.01	0.01	7th Power Plan
Wastewater	Interior Lighting	Interior Lighting - Timeclocks and Timers	sqft	New	0.00	8	\$0.00	7%	7%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Wastewater	Interior Lighting	Interior Lighting - Skylights	sqft	New	0.00	15	\$1.01	18%	24%	\$0.00	0.00	0.00	AEG Research
Wastewater	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	sqft	New	0.03	16	\$1.81	5%	40%	\$4.03	0.20	0.27	7th Power Plan
Wastewater	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	New	0.03	11	\$0.00	15%	50%	\$0.01	0.18	0.24	Illinois TRM
Wastewater	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	sqft	New	0.04	8	\$0.03	15%	25%	\$0.08	0.17	0.26	7th Power Plan
Wastewater	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	New	0.02	8	\$0.02	44%	60%	\$0.08	0.14	0.22	Pacific Gas and Electric Research
Wastewater	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	New	0.03	7	\$1.19	15%	30%	\$4.40	0.15	0.22	AEG Research
Wastewater	Process	Process - Conductivity Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Wastewater	Process	Process - Timers and Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Wastewater	Motors	Process - Timers and Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Wastewater	Process	Refrigeration - Floating Head Pressure	employee	New	0.00	15	\$175.20	20%	50%	\$0.00	0.00	0.00	RTF Workbook
Wastewater	Process	Refrigeration - System Optimization	employee	New	0.00	15	\$61.26	20%	50%	\$0.00	0.00	0.00	AEG Research
Wastewater	Motors	Pumping System - Equipment Upgrade	employee	New	5,789.13	10	\$839.77	9%	38%	\$0.02	12.29	12.37	7th Power Plan
Wastewater	Motors	Pumping System - System Optimization	employee	New	4,300.86	12	\$1,279.81	9%	38%	\$0.03	12.35	12.36	UNIDO Study on Industrial Energy Efficiency

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Wastewater	Motors	Pumping System - Variable Speed Drive	employee	New	4,269.59	10	\$1,331.48	9%	38%	\$0.04	11.00	11.02	UNIDO Study on Industrial Energy Efficiency
Wastewater	Motors	Fan System - Equipment Upgrade	employee	New	7,990.65	10	\$779.75	9%	38%	\$0.02	20.52	20.52	UNIDO Study on Industrial Energy Efficiency
Wastewater	Motors	Fan System - Flow Optimization	employee	New	9,360.92	10	\$1,290.13	9%	38%	\$0.02	24.06	24.07	UNIDO Study on Industrial Energy Efficiency
Wastewater	Motors	Fan System - Variable Speed Drive	employee	New	13,901.33	10	\$6,491.85	9%	38%	\$0.06	35.85	35.95	UNIDO Study on Industrial Energy Efficiency
Wastewater	Motors	Compressed Air - Equipment Upgrade	employee	New	544.65	10	\$39.63	17%	50%	\$0.01	1.35	1.35	7th Power Plan
Wastewater	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	New	0.00	15	\$0.00	16%	38%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Wastewater	Motors	Compressed Air - Refrigerated Cycling Dryers	employee	New	0.00	10	\$0.00	16%	30%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Wastewater	Motors	Compressed Air - System Controls	employee	New	120.21	10	\$28.34	9%	38%	\$0.03	0.26	0.26	UNIDO Study on Industrial Energy Efficiency
Wastewater	Motors	Compressed Air - Leak Management Program	employee	New	311.02	10	\$28.49	18%	75%	\$0.02	1.32	1.32	7th Power Plan
Wastewater	Motors	Compressed Air - Variable Speed Drive	employee	New	223.58	15	\$173.73	26%	45%	\$0.08	0.39	0.39	UNIDO Study on Industrial Energy Efficiency
Wastewater	Motors	Compressed Air - Low Pressure-Drop Filters	employee	New	7.45	10	\$2.68	17%	50%	\$0.05	0.02	0.02	Illinois TRM
Wastewater	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	New	45.31	10	\$8.69	17%	50%	\$0.03	0.11	0.11	UNIDO Study on Industrial Energy Efficiency
Wastewater	Motors	Compressed Air - Outside Air Intake	employee	New	0.00	20	\$0.00	17%	50%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Wastewater	Motors	Compressed Air - Receiver Capacity Addition	employee	New	45.00	15	\$23.89	17%	50%	\$0.06	0.14	0.14	UNIDO Study on Industrial Energy Efficiency
Wastewater	Motors	Material Handling - Variable Speed Drive	employee	New	1,248.05	10	\$443.99	25%	45%	\$0.05	2.26	2.26	7th Power Plan
Wastewater	Motors	Motors - Green Rewind (<100 HP)	employee	New	194.61	10	\$83.23	10%	50%	\$0.06	3.52	3.53	7th Power Plan
Wastewater	Motors	Motors - Green Rewind (100 HP+)	employee	New	108.88	10	\$29.54	6%	25%	\$0.04	0.94	0.94	7th Power Plan
Wastewater	Motors	Switch from Belt Drive to Direct Drive	employee	New	1,649.89	12	\$365.34	16%	25%	\$0.03	7.90	7.90	2015-mdu-irp-report---volume-iii.pdf
Wastewater	Motors	Motors - Synchronous Belts	employee	New	436.28	10	\$109.91	16%	36%	\$0.03	3.25	3.28	7th Power Plan

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Wastewater	Miscellaneous	Agriculture - Engine Block Timer	employee	New	2,074.94	3	\$25.60	0%	0%	\$0.00	0.00	0.00	Vermont TRM
Wastewater	Motors	Agriculture - Live Stock Waterer	employee	New	13,893.14	10	\$7,395.64	0%	0%	\$0.07	0.00	0.00	Ontario Power TRM
Wastewater	Process	Dairy - Milk Precoolers	employee	New	0.00	15	\$788.86	0%	0%	\$0.00	0.00	0.00	Ontario Power TRM
Wastewater	Process	Clean Room: Change Filter Strategy	employee	New	0.00	15	\$10.04	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Wastewater	Process	Clean Room: Chiller Optimize	employee	New	0.00	15	\$46.71	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Wastewater	Process	Clean Room: Clean Room HVAC	employee	New	0.00	15	\$56.39	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Wastewater	Process	Elec Chip Fab: Solidstate Chiller	employee	New	0.00	15	\$177.11	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Wastewater	Process	Elec Chip Fab: Eliminate Exhaust	employee	New	0.00	15	\$36.13	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Wastewater	Process	Elec Chip Fab: Exhaust Injector	employee	New	0.00	15	\$174.26	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Wastewater	Process	Elec Chip Fab: Reduce Gas Pressure	employee	New	0.00	15	\$3.49	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Wastewater	Motors	Panel: Hydraulic Press	employee	New	1,879.28	10	\$443.72	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Wastewater	Motors	Wood: Replace Pneumatic Conveyor	employee	New	2,015.72	10	\$33.23	0%	0%	-\$0.01	0.00	0.00	7th Power Plan
Wastewater	Process	Metal: New Arc Furnace	employee	New	0.00	10	\$160.78	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Wastewater	Process	Paper: Premium Control Large Material	employee	New	1,078.70	10	\$539.63	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Wastewater	Process	Paper: Efficient Pulp Screen	employee	New	864.01	10	\$177.76	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Wastewater	Process	Kraft: Effluent Treatment System	employee	New	864.01	10	\$72.88	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Wastewater	Motors	Kraft: Efficient Agitator	employee	New	3,470.78	10	\$331.12	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Wastewater	Process	Mech Pulp: Premium Process	employee	New	9.67	5	\$1.25	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Wastewater	Motors	Mech Pulp: Refiner Plate Improvement	employee	New	29.18	1	\$1.26	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Wastewater	Cooling	Transformer - High Efficiency	employee	New	61.60	10	\$259.80	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Wastewater	Heating	Transformer - High Efficiency	employee	New	287.82	10	\$259.80	15%	15%	\$0.02	0.00	0.00	7th Power Plan

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Wastewater	Ventilation	Transformer - High Efficiency	employee	New	5.92	10	\$259.80	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Wastewater	Interior Lighting	Transformer - High Efficiency	employee	New	43.14	10	\$259.80	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Wastewater	Exterior Lighting	Transformer - High Efficiency	employee	New	9.56	10	\$259.80	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Wastewater	Motors	Transformer - High Efficiency	employee	New	1,593.69	10	\$259.80	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Wastewater	Process	Transformer - High Efficiency	employee	New	86.40	10	\$259.80	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Wastewater	Miscellaneous	Transformer - High Efficiency	employee	New	74.39	10	\$259.80	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Wastewater	Cooling	Strategic Energy Management	employee	New	174.46	3	\$1,595.60	0%	5%	\$0.08	0.00	0.00	AEG Research
Wastewater	Heating	Strategic Energy Management	employee	New	828.57	3	\$1,595.60	0%	5%	\$0.08	0.01	0.01	AEG Research
Wastewater	Ventilation	Strategic Energy Management	employee	New	17.06	3	\$1,595.60	0%	5%	\$0.08	0.00	0.00	AEG Research
Wastewater	Interior Lighting	Strategic Energy Management	employee	New	124.20	3	\$1,595.60	0%	5%	\$0.08	0.00	0.01	AEG Research
Wastewater	Exterior Lighting	Strategic Energy Management	employee	New	27.62	3	\$1,595.60	0%	5%	\$0.08	0.00	0.00	AEG Research
Wastewater	Motors	Strategic Energy Management	employee	New	4,603.98	3	\$1,595.60	0%	5%	\$0.08	0.19	0.20	AEG Research
Wastewater	Process	Strategic Energy Management	employee	New	249.60	3	\$1,595.60	0%	5%	\$0.08	0.01	0.01	AEG Research
Wastewater	Miscellaneous	Strategic Energy Management	employee	New	214.90	3	\$1,595.60	0%	5%	\$0.08	0.01	0.01	AEG Research
Wastewater	Interior Lighting	Commissioning	employee	New	143.27	3	\$2,878.52	5%	39%	\$0.15	0.04	0.06	AEG Research
Wastewater	Exterior Lighting	Commissioning	employee	New	31.86	3	\$2,878.52	5%	39%	\$0.15	0.01	0.01	AEG Research
Wastewater	Motors	Commissioning	employee	New	5,310.99	3	\$2,878.52	5%	39%	\$0.15	1.53	1.59	AEG Research
Wastewater	Process	Commissioning	employee	New	287.93	3	\$2,878.52	5%	39%	\$0.15	0.08	0.08	AEG Research
Wastewater	Miscellaneous	Commissioning	employee	New	247.90	3	\$2,878.52	5%	39%	\$0.15	0.09	0.06	AEG Research
Wastewater	Interior Lighting	Retrocommissioning	employee	New	143.81	3	\$1,827.34	0%	0%	\$0.10	0.00	0.00	AEG Research

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Wastewater	Exterior Lighting	Retrocommissioning	employee	New	31.87	3	\$1,827.34	0%	0%	\$0.10	0.00	0.00	AEG Research
Wastewater	Motors	Retrocommissioning	employee	New	5,312.29	3	\$1,827.34	0%	0%	\$0.10	0.00	0.00	AEG Research
Wastewater	Process	Retrocommissioning	employee	New	288.00	3	\$1,827.34	0%	0%	\$0.10	0.00	0.00	AEG Research
Wastewater	Miscellaneous	Retrocommissioning	employee	New	247.96	3	\$1,827.34	0%	0%	\$0.10	0.00	0.00	AEG Research
Wastewater	Motors	Municipal Sewage Treatment	employee	New	764.49	12	\$422.17	15%	35%	\$0.06	1.54	1.54	7th Power Plan
Wastewater	Motors	Municipal Water Supply Treatment	employee	New	0.00	12	\$0.00	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Water	Cooling	Insulation - Ceiling	sqft	Existing	0.12	45	\$1.28	15%	25%	\$0.14	0.37	0.40	Building Energy Simulation Tool
Water	Heating	Insulation - Ceiling	sqft	Existing	0.54	45	\$1.28	15%	25%	\$0.14	1.81	1.87	Building Energy Simulation Tool
Water	Ventilation	Insulation - Ceiling	sqft	Existing	0.02	45	\$1.28	15%	25%	\$0.14	0.25	0.30	Building Energy Simulation Tool
Water	Cooling	Insulation - Ducting	sqft	Existing	0.05	20	\$0.84	15%	25%	\$1.04	0.13	0.15	Building Energy Simulation Tool
Water	Heating	Insulation - Ducting	sqft	Existing	0.02	20	\$0.84	15%	25%	\$1.04	0.07	0.08	Building Energy Simulation Tool
Water	Ventilation	Insulation - Ducting	sqft	Existing	0.00	20	\$0.84	15%	25%	\$1.04	0.01	0.01	Building Energy Simulation Tool
Water	Cooling	Insulation - Wall Cavity	sqft	Existing	0.00	45	\$0.15	45%	50%	\$0.02	0.00	0.00	Building Energy Simulation Tool
Water	Heating	Insulation - Wall Cavity	sqft	Existing	0.76	45	\$0.15	45%	50%	\$0.02	1.30	1.31	Building Energy Simulation Tool
Water	Ventilation	Insulation - Wall Cavity	sqft	Existing	0.02	45	\$0.15	45%	50%	\$0.02	0.17	0.20	Building Energy Simulation Tool
Water	Cooling	HVAC - Duct Repair and Sealing	sqft	Existing	0.02	18	\$0.00	15%	25%	\$0.00	0.05	0.05	Building Energy Simulation Tool
Water	Heating	HVAC - Duct Repair and Sealing	sqft	Existing	0.05	18	\$0.00	15%	25%	\$0.00	0.18	0.18	Building Energy Simulation Tool
Water	Ventilation	HVAC - Duct Repair and Sealing	sqft	Existing	0.00	18	\$0.00	15%	25%	\$0.00	0.02	0.03	Building Energy Simulation Tool
Water	Cooling	Chiller - Chilled Water Reset	sqft	Existing	0.05	10	\$0.01	15%	45%	\$0.03	0.12	0.13	AEG-BEST
Water	Cooling	Chiller - Chilled Water Variable-Flow System	sqft	Existing	0.25	15	\$0.50	15%	60%	\$0.20	0.96	1.09	AEG-BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Water	Cooling	Chiller - Variable Speed Fans	sqft	Existing	0.09	15	\$0.03	15%	75%	\$0.03	0.50	0.54	New Jersey TRM
Water	Cooling	HVAC - Economizer	sqft	Existing	0.46	10	\$0.25	18%	30%	\$0.07	0.49	0.54	AEG-BEST
Water	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.25	15%	35%	\$10.43	0.07	0.10	7th Power Plan
Water	Cooling	Destratification Fans (HVLS)	sqft	Existing	0.16	15	\$0.63	15%	50%	\$0.04	1.84	2.00	AEG Research
Water	Heating	Destratification Fans (HVLS)	sqft	Existing	1.39	15	\$0.63	15%	50%	\$0.04	17.94	18.10	AEG Research
Water	Cooling	RTU - Maintenance	sqft	Existing	0.08	3	\$0.07	15%	75%	\$0.27	0.90	1.05	AEG Research
Water	Cooling	Thermostat - WiFi/Interactive	sqft	Existing	0.28	5	\$0.66	5%	15%	\$0.09	0.85	0.92	7th Power Plan
Water	Heating	Thermostat - WiFi/Interactive	sqft	Existing	1.27	5	\$0.66	5%	15%	\$0.09	4.25	4.41	7th Power Plan
Water	Ventilation	Thermostat - WiFi/Interactive	sqft	Existing	0.04	5	\$0.66	5%	15%	\$0.09	0.60	0.72	7th Power Plan
Water	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.91	15	\$0.35	7%	33%	\$0.03	9.19	11.61	7th Power Plan
Water	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	1.24	15	\$0.58	7%	33%	\$0.04	12.19	15.88	7th Power Plan
Water	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	Existing	0.02	15	\$0.00	1%	2%	\$0.01	0.05	0.07	7th Power Plan
Water	Interior Lighting	Interior Lighting - Timeclocks and Timers	sqft	Existing	0.00	8	\$0.00	7%	7%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Water	Interior Lighting	Interior Lighting - Skylights	sqft	Existing	0.00	15	\$1.01	15%	23%	\$0.00	0.00	0.00	AEG Research
Water	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	sqft	Existing	0.03	16	\$1.81	5%	40%	\$4.03	1.34	2.18	7th Power Plan
Water	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	Existing	0.04	11	\$0.00	15%	50%	\$0.01	1.53	2.19	Illinois TRM
Water	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	sqft	Existing	0.05	8	\$0.03	15%	25%	\$0.08	1.85	2.85	7th Power Plan
Water	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	Existing	0.03	8	\$0.02	33%	60%	\$0.08	2.57	4.07	Pacific Gas and Electric Research
Water	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	Existing	0.03	7	\$1.19	15%	30%	\$4.46	1.60	2.69	AEG Research
Water	Process	Process - Conductivity Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Water	Process	Process - Timers and Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Water	Motors	Process - Timers and Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Water	Process	Refrigeration - Floating Head Pressure	employee	Existing	0.00	15	\$162.04	20%	50%	\$0.00	0.00	0.00	RTF Workbook
Water	Process	Refrigeration - System Optimization	employee	Existing	0.00	15	\$114.10	20%	50%	\$0.00	0.00	0.00	AEG Research
Water	Motors	Pumping System - Equipment Upgrade	employee	Existing	13,913.43	10	\$1,982.88	9%	38%	\$0.02	404.58	405.37	7th Power Plan
Water	Motors	Pumping System - System Optimization	employee	Existing	9,886.92	12	\$3,021.92	9%	38%	\$0.03	275.99	285.39	UNIDO Study on Industrial Energy Efficiency
Water	Motors	Pumping System - Variable Speed Drive	employee	Existing	9,536.16	10	\$3,143.92	9%	38%	\$0.04	262.59	279.11	UNIDO Study on Industrial Energy Efficiency
Water	Motors	Fan System - Equipment Upgrade	employee	Existing	0.00	10	\$23.85	9%	38%	\$0.00	0.00	0.00	UNIDO Study on Industrial Energy Efficiency
Water	Motors	Fan System - Flow Optimization	employee	Existing	0.00	10	\$39.46	9%	38%	\$0.00	0.00	0.00	UNIDO Study on Industrial Energy Efficiency
Water	Motors	Fan System - Variable Speed Drive	employee	Existing	0.00	10	\$198.55	9%	38%	\$0.00	0.00	0.00	UNIDO Study on Industrial Energy Efficiency
Water	Motors	Compressed Air - Equipment Upgrade	employee	Existing	355.99	10	\$25.90	17%	50%	\$0.01	12.09	12.09	7th Power Plan
Water	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	Existing	0.00	15	\$0.00	16%	38%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Water	Motors	Compressed Air - Refrigerated Cycling Dryers	employee	Existing	0.00	10	\$0.00	16%	30%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Water	Motors	Compressed Air - System Controls	employee	Existing	74.49	10	\$18.52	9%	38%	\$0.03	2.11	2.27	UNIDO Study on Industrial Energy Efficiency
Water	Motors	Compressed Air - Leak Management Program	employee	Existing	203.14	10	\$18.62	18%	75%	\$0.02	11.82	11.83	7th Power Plan
Water	Motors	Compressed Air - Variable Speed Drive	employee	Existing	134.61	15	\$113.55	26%	45%	\$0.08	2.50	2.79	UNIDO Study on Industrial Energy Efficiency
Water	Motors	Compressed Air - Low Pressure-Drop Filters	employee	Existing	4.49	10	\$1.75	17%	50%	\$0.05	0.15	0.16	Illinois TRM
Water	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	Existing	28.83	10	\$5.68	17%	50%	\$0.03	0.96	1.01	UNIDO Study on Industrial Energy Efficiency
Water	Motors	Compressed Air - Outside Air Intake	employee	Existing	0.00	20	\$0.00	17%	50%	\$0.00	0.00	0.00	Michigan Energy Measures Database

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Water	Motors	Compressed Air - Receiver Capacity Addition	employee	Existing	27.83	15	\$15.61	17%	50%	\$0.06	0.92	0.99	UNIDO Study on Industrial Energy Efficiency
Water	Motors	Material Handling - Variable Speed Drive	employee	Existing	500.65	10	\$193.33	25%	45%	\$0.05	9.55	10.41	7th Power Plan
Water	Motors	Motors - Green Rewind (<100 HP)	employee	Existing	146.53	10	\$68.00	10%	50%	\$0.06	22.35	24.39	7th Power Plan
Water	Motors	Motors - Green Rewind (100 HP+)	employee	Existing	84.17	10	\$24.14	6%	25%	\$0.04	6.18	6.57	7th Power Plan
Water	Motors	Switch from Belt Drive to Direct Drive	employee	Existing	1,315.48	12	\$298.49	16%	25%	\$0.03	49.07	50.52	2015-mdu-irp-report---volume-iii.pdf
Water	Motors	Motors - Synchronous Belts	employee	Existing	337.90	10	\$89.80	16%	36%	\$0.03	26.78	28.78	7th Power Plan
Water	Miscellaneous	Agriculture - Engine Block Timer	employee	Existing	1,356.23	3	\$16.73	0%	0%	\$0.00	0.00	0.00	Vermont TRM
Water	Motors	Agriculture - Live Stock Waterer	employee	Existing	30,679.89	10	\$17,462.80	0%	0%	\$0.07	0.00	0.00	Ontario Power TRM
Water	Process	Dairy - Milk Precoolers	employee	Existing	0.00	15	\$515.61	0%	0%	\$0.00	0.00	0.00	Ontario Power TRM
Water	Process	Clean Room: Change Filter Strategy	employee	Existing	0.00	15	\$6.56	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Water	Process	Clean Room: Chiller Optimize	employee	Existing	0.00	15	\$30.53	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Water	Process	Clean Room: Clean Room HVAC	employee	Existing	0.00	15	\$36.86	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Water	Process	Elec Chip Fab: Solidstate Chiller	employee	Existing	0.00	15	\$115.76	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Water	Process	Elec Chip Fab: Eliminate Exhaust	employee	Existing	0.00	15	\$23.61	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Water	Process	Elec Chip Fab: Exhaust Injector	employee	Existing	0.00	15	\$113.90	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Water	Process	Elec Chip Fab: Reduce Gas Pressure	employee	Existing	0.00	15	\$2.28	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Water	Motors	Panel: Hydraulic Press	employee	Existing	775.81	10	\$193.21	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Water	Motors	Wood: Replace Pneumatic Conveyor	employee	Existing	877.70	10	\$14.47	0%	0%	-\$0.01	0.00	0.00	7th Power Plan
Water	Process	Metal: New Arc Furnace	employee	Existing	0.00	10	\$105.09	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Water	Process	Paper: Premium Control Large Material	employee	Existing	705.07	10	\$352.72	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Water	Process	Paper: Efficient Pulp Screen	employee	Existing	564.74	10	\$116.19	0%	0%	\$0.03	0.00	0.00	7th Power Plan

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Water	Process	Kraft: Effluent Treatment System	employee	Existing	564.74	10	\$47.63	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Water	Motors	Kraft: Efficient Agitator	employee	Existing	1,509.07	10	\$144.18	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Water	Process	Mech Pulp: Premium Process	employee	Existing	6.32	5	\$0.81	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Water	Motors	Mech Pulp: Refiner Plate Improvement	employee	Existing	11.88	1	\$0.55	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Water	Cooling	Transformer - High Efficiency	employee	Existing	43.58	10	\$171.48	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Water	Heating	Transformer - High Efficiency	employee	Existing	195.17	10	\$171.48	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Water	Ventilation	Transformer - High Efficiency	employee	Existing	5.50	10	\$171.48	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Water	Interior Lighting	Transformer - High Efficiency	employee	Existing	30.89	10	\$171.48	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Water	Exterior Lighting	Transformer - High Efficiency	employee	Existing	6.67	10	\$171.48	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Water	Motors	Transformer - High Efficiency	employee	Existing	974.19	10	\$171.48	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Water	Process	Transformer - High Efficiency	employee	Existing	56.47	10	\$171.48	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Water	Miscellaneous	Transformer - High Efficiency	employee	Existing	51.33	10	\$171.48	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Water	Cooling	Strategic Energy Management	employee	Existing	120.49	3	\$1,053.15	0%	5%	\$0.08	0.10	0.11	AEG Research
Water	Heating	Strategic Energy Management	employee	Existing	557.99	3	\$1,053.15	0%	5%	\$0.08	0.51	0.54	AEG Research
Water	Ventilation	Strategic Energy Management	employee	Existing	15.75	3	\$1,053.15	0%	5%	\$0.08	0.07	0.09	AEG Research
Water	Interior Lighting	Strategic Energy Management	employee	Existing	87.92	3	\$1,053.15	0%	5%	\$0.08	0.33	0.47	AEG Research
Water	Exterior Lighting	Strategic Energy Management	employee	Existing	19.11	3	\$1,053.15	0%	5%	\$0.08	0.07	0.11	AEG Research
Water	Motors	Strategic Energy Management	employee	Existing	2,787.20	3	\$1,053.15	0%	5%	\$0.08	12.48	13.48	AEG Research
Water	Process	Strategic Energy Management	employee	Existing	161.51	3	\$1,053.15	0%	5%	\$0.08	0.76	0.76	AEG Research

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Water	Miscellaneous	Strategic Energy Management	employee	Existing	146.67	3	\$1,053.15	0%	5%	\$0.08	0.87	0.68	AEG Research
Water	Interior Lighting	Commissioning	employee	Existing	101.34	3	\$1,875.20	0%	0%	\$0.15	0.00	0.00	AEG Research
Water	Exterior Lighting	Commissioning	employee	Existing	22.03	3	\$1,875.20	0%	0%	\$0.15	0.00	0.00	AEG Research
Water	Motors	Commissioning	employee	Existing	3,212.06	3	\$1,875.20	0%	0%	\$0.15	0.00	0.00	AEG Research
Water	Process	Commissioning	employee	Existing	186.13	3	\$1,875.20	0%	0%	\$0.15	0.00	0.00	AEG Research
Water	Miscellaneous	Commissioning	employee	Existing	169.00	3	\$1,875.20	0%	0%	\$0.15	0.00	0.00	AEG Research
Water	Interior Lighting	Retrocommissioning	employee	Existing	102.98	3	\$1,190.41	5%	39%	\$0.10	2.64	3.76	AEG Research
Water	Exterior Lighting	Retrocommissioning	employee	Existing	22.24	3	\$1,190.41	5%	39%	\$0.10	0.58	0.84	AEG Research
Water	Motors	Retrocommissioning	employee	Existing	3,247.32	3	\$1,190.41	5%	39%	\$0.10	99.61	106.59	AEG Research
Water	Process	Retrocommissioning	employee	Existing	188.25	3	\$1,190.41	5%	39%	\$0.10	6.03	6.03	AEG Research
Water	Miscellaneous	Retrocommissioning	employee	Existing	171.10	3	\$1,190.41	5%	39%	\$0.10	6.94	5.39	AEG Research
Water	Motors	Municipal Sewage Treatment	employee	Existing	1,662.44	12	\$996.83	0%	0%	\$0.06	0.00	0.00	7th Power Plan
Water	Motors	Municipal Water Supply Treatment	employee	Existing	0.00	12	\$0.00	15%	35%	\$0.00	0.00	0.00	7th Power Plan
Water	Cooling	Insulation - Ceiling	sqft	New	0.11	45	\$1.28	15%	25%	\$0.16	0.13	0.13	Building Energy Simulation Tool
Water	Heating	Insulation - Ceiling	sqft	New	0.52	45	\$1.28	15%	25%	\$0.16	0.64	0.64	Building Energy Simulation Tool
Water	Ventilation	Insulation - Ceiling	sqft	New	0.01	45	\$1.28	15%	25%	\$0.16	0.08	0.09	Building Energy Simulation Tool
Water	Cooling	Insulation - Ducting	sqft	New	0.04	20	\$0.84	15%	25%	\$1.11	0.05	0.05	Building Energy Simulation Tool
Water	Heating	Insulation - Ducting	sqft	New	0.02	20	\$0.84	15%	25%	\$1.11	0.03	0.03	Building Energy Simulation Tool
Water	Ventilation	Insulation - Ducting	sqft	New	0.00	20	\$0.84	15%	25%	\$1.11	0.00	0.00	Building Energy Simulation Tool
Water	Cooling	Insulation - Wall Cavity	sqft	New	0.00	45	\$0.15	45%	50%	\$0.02	0.00	0.00	Building Energy Simulation Tool
Water	Heating	Insulation - Wall Cavity	sqft	New	0.71	45	\$0.15	45%	50%	\$0.02	0.44	0.44	Building Energy Simulation Tool
Water	Ventilation	Insulation - Wall Cavity	sqft	New	0.01	45	\$0.15	45%	50%	\$0.02	0.05	0.06	Building Energy Simulation Tool

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Water	Cooling	HVAC - Duct Repair and Sealing	sqft	New	0.01	18	\$0.00	15%	25%	\$0.00	0.02	0.02	Building Energy Simulation Tool
Water	Heating	HVAC - Duct Repair and Sealing	sqft	New	0.05	18	\$0.00	15%	25%	\$0.00	0.06	0.06	Building Energy Simulation Tool
Water	Ventilation	HVAC - Duct Repair and Sealing	sqft	New	0.00	18	\$0.00	15%	25%	\$0.00	0.01	0.01	Building Energy Simulation Tool
Water	Cooling	Chiller - Chilled Water Reset	sqft	New	0.04	10	\$0.01	15%	45%	\$0.03	0.02	0.02	AEG-BEST
Water	Cooling	Chiller - Chilled Water Variable-Flow System	sqft	New	0.21	15	\$0.50	15%	60%	\$0.24	0.19	0.20	AEG-BEST
Water	Cooling	Chiller - Variable Speed Fans	sqft	New	0.08	15	\$0.03	15%	75%	\$0.04	0.10	0.10	New Jersey TRM
Water	Cooling	HVAC - Economizer	sqft	New	0.42	10	\$0.25	18%	30%	\$0.07	0.08	0.09	AEG-BEST
Water	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.25	15%	35%	\$12.47	0.01	0.02	7th Power Plan
Water	Cooling	Destratification Fans (HVLS)	sqft	New	0.14	15	\$0.63	15%	50%	\$0.05	0.40	0.41	AEG Research
Water	Heating	Destratification Fans (HVLS)	sqft	New	1.30	15	\$0.63	15%	50%	\$0.05	3.85	3.87	AEG Research
Water	Cooling	RTU - Maintenance	sqft	New	0.08	3	\$0.07	15%	75%	\$0.28	0.06	0.07	AEG Research
Water	Cooling	Thermostat - WiFi/Interactive	sqft	New	0.26	5	\$0.66	5%	15%	\$0.09	0.04	0.04	7th Power Plan
Water	Heating	Thermostat - WiFi/Interactive	sqft	New	1.22	5	\$0.66	5%	15%	\$0.09	0.19	0.20	7th Power Plan
Water	Ventilation	Thermostat - WiFi/Interactive	sqft	New	0.03	5	\$0.66	5%	15%	\$0.09	0.02	0.03	7th Power Plan
Water	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.83	15	\$0.35	22%	41%	\$0.03	3.13	3.85	7th Power Plan
Water	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	1.13	15	\$0.58	22%	41%	\$0.04	4.26	5.28	7th Power Plan
Water	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	New	0.02	15	\$0.00	1%	2%	\$0.01	0.01	0.01	7th Power Plan
Water	Interior Lighting	Interior Lighting - Timeclocks and Timers	sqft	New	0.00	8	\$0.00	7%	7%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Water	Interior Lighting	Interior Lighting - Skylights	sqft	New	0.00	15	\$1.01	18%	24%	\$0.00	0.00	0.00	AEG Research
Water	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	sqft	New	0.03	16	\$1.81	5%	40%	\$4.03	0.33	0.46	7th Power Plan

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Water	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	New	0.03	11	\$0.00	15%	50%	\$0.01	0.30	0.40	Illinois TRM
Water	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	sqft	New	0.04	8	\$0.03	15%	25%	\$0.08	0.28	0.43	7th Power Plan
Water	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	New	0.02	8	\$0.02	44%	60%	\$0.08	0.24	0.36	Pacific Gas and Electric Research
Water	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	New	0.03	7	\$1.19	15%	30%	\$4.40	0.24	0.37	AEG Research
Water	Process	Process - Conductivity Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Water	Process	Process - Timers and Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Water	Motors	Process - Timers and Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Water	Process	Refrigeration - Floating Head Pressure	employee	New	0.00	15	\$114.51	20%	50%	\$0.00	0.00	0.00	RTF Workbook
Water	Process	Refrigeration - System Optimization	employee	New	0.00	15	\$40.04	20%	50%	\$0.00	0.00	0.00	AEG Research
Water	Motors	Pumping System - Equipment Upgrade	employee	New	13,933.78	10	\$1,982.88	9%	38%	\$0.02	75.32	75.31	7th Power Plan
Water	Motors	Pumping System - System Optimization	employee	New	10,182.57	12	\$3,021.92	9%	38%	\$0.03	74.69	74.41	UNIDO Study on Industrial Energy Efficiency
Water	Motors	Pumping System - Variable Speed Drive	employee	New	9,974.74	10	\$3,143.92	9%	38%	\$0.04	65.67	65.66	UNIDO Study on Industrial Energy Efficiency
Water	Motors	Fan System - Equipment Upgrade	employee	New	0.00	10	\$23.85	9%	38%	\$0.00	0.00	0.00	UNIDO Study on Industrial Energy Efficiency
Water	Motors	Fan System - Flow Optimization	employee	New	0.00	10	\$39.46	9%	38%	\$0.00	0.00	0.00	UNIDO Study on Industrial Energy Efficiency
Water	Motors	Fan System - Variable Speed Drive	employee	New	0.00	10	\$198.55	9%	38%	\$0.00	0.00	0.00	UNIDO Study on Industrial Energy Efficiency
Water	Motors	Compressed Air - Equipment Upgrade	employee	New	355.99	10	\$25.90	17%	50%	\$0.01	2.24	2.24	7th Power Plan
Water	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	New	0.00	15	\$0.00	16%	38%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Water	Motors	Compressed Air - Refrigerated Cycling Dryers	employee	New	0.00	10	\$0.00	16%	30%	\$0.00	0.00	0.00	Michigan Energy Measures Database

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Water	Motors	Compressed Air - System Controls	employee	New	77.74	10	\$18.52	9%	38%	\$0.03	0.42	0.43	UNIDO Study on Industrial Energy Efficiency
Water	Motors	Compressed Air - Leak Management Program	employee	New	203.29	10	\$18.62	18%	75%	\$0.02	2.20	2.20	7th Power Plan
Water	Motors	Compressed Air - Variable Speed Drive	employee	New	142.81	15	\$113.55	26%	45%	\$0.08	0.64	0.64	UNIDO Study on Industrial Energy Efficiency
Water	Motors	Compressed Air - Low Pressure-Drop Filters	employee	New	4.76	10	\$1.75	17%	50%	\$0.05	0.03	0.03	Illinois TRM
Water	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	New	29.69	10	\$5.68	17%	50%	\$0.03	0.19	0.19	UNIDO Study on Industrial Energy Efficiency
Water	Motors	Compressed Air - Outside Air Intake	employee	New	0.00	20	\$0.00	17%	50%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Water	Motors	Compressed Air - Receiver Capacity Addition	employee	New	29.10	15	\$15.61	17%	50%	\$0.06	0.23	0.23	UNIDO Study on Industrial Energy Efficiency
Water	Motors	Material Handling - Variable Speed Drive	employee	New	530.89	10	\$193.33	25%	45%	\$0.05	2.46	2.46	7th Power Plan
Water	Motors	Motors - Green Rewind (<100 HP)	employee	New	155.48	10	\$68.00	10%	50%	\$0.06	5.76	5.77	7th Power Plan
Water	Motors	Motors - Green Rewind (100 HP+)	employee	New	88.02	10	\$24.14	6%	25%	\$0.04	1.55	1.54	7th Power Plan
Water	Motors	Switch from Belt Drive to Direct Drive	employee	New	1,351.64	12	\$298.49	16%	25%	\$0.03	13.22	13.16	2015-mdi-irp-report---volume-iii.pdf
Water	Motors	Motors - Synchronous Belts	employee	New	352.68	10	\$89.80	16%	36%	\$0.03	5.37	5.41	7th Power Plan
Water	Miscellaneous	Agriculture - Engine Block Timer	employee	New	1,356.23	3	\$16.73	0%	0%	\$0.00	0.00	0.00	Vermont TRM
Water	Motors	Agriculture - Live Stock Waterer	employee	New	32,593.16	10	\$17,462.80	0%	0%	\$0.07	0.00	0.00	Ontario Power TRM
Water	Process	Dairy - Milk Precoolers	employee	New	0.00	15	\$515.61	0%	0%	\$0.00	0.00	0.00	Ontario Power TRM
Water	Process	Clean Room: Change Filter Strategy	employee	New	0.00	15	\$6.56	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Water	Process	Clean Room: Chiller Optimize	employee	New	0.00	15	\$30.53	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Water	Process	Clean Room: Clean Room HVAC	employee	New	0.00	15	\$36.86	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Water	Process	Elec Chip Fab: Solidstate Chiller	employee	New	0.00	15	\$115.76	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Water	Process	Elec Chip Fab: Eliminate Exhaust	employee	New	0.00	15	\$23.61	0%	0%	\$0.00	0.00	0.00	7th Power Plan

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Water	Process	Elec Chip Fab: Exhaust Injector	employee	New	0.00	15	\$113.90	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Water	Process	Elec Chip Fab: Reduce Gas Pressure	employee	New	0.00	15	\$2.28	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Water	Motors	Panel: Hydraulic Press	employee	New	809.63	10	\$193.21	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Water	Motors	Wood: Replace Pneumatic Conveyor	employee	New	877.70	10	\$14.47	0%	0%	-\$0.01	0.00	0.00	7th Power Plan
Water	Process	Metal: New Arc Furnace	employee	New	0.00	10	\$105.09	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Water	Process	Paper: Premium Control Large Material	employee	New	705.07	10	\$352.72	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Water	Process	Paper: Efficient Pulp Screen	employee	New	564.74	10	\$116.19	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Water	Process	Kraft: Effluent Treatment System	employee	New	564.74	10	\$47.63	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Water	Motors	Kraft: Efficient Agitator	employee	New	1,511.28	10	\$144.18	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Water	Process	Mech Pulp: Premium Process	employee	New	6.32	5	\$0.81	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Water	Motors	Mech Pulp: Refiner Plate Improvement	employee	New	12.62	1	\$0.55	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Water	Cooling	Transformer - High Efficiency	employee	New	40.11	10	\$169.81	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Water	Heating	Transformer - High Efficiency	employee	New	188.13	10	\$169.81	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Water	Ventilation	Transformer - High Efficiency	employee	New	3.87	10	\$169.81	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Water	Interior Lighting	Transformer - High Efficiency	employee	New	28.20	10	\$169.81	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Water	Exterior Lighting	Transformer - High Efficiency	employee	New	6.25	10	\$169.81	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Water	Motors	Transformer - High Efficiency	employee	New	1,034.95	10	\$169.81	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Water	Process	Transformer - High Efficiency	employee	New	56.47	10	\$169.81	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Water	Miscellaneous	Transformer - High Efficiency	employee	New	48.62	10	\$169.81	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Water	Cooling	Strategic Energy Management	employee	New	114.03	3	\$1,042.92	0%	5%	\$0.08	0.00	0.00	AEG Research
Water	Heating	Strategic Energy Management	employee	New	541.57	3	\$1,042.92	0%	5%	\$0.08	0.01	0.01	AEG Research

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Water	Ventilation	Strategic Energy Management	employee	New	11.15	3	\$1,042.92	0%	5%	\$0.08	0.00	0.00	AEG Research
Water	Interior Lighting	Strategic Energy Management	employee	New	81.18	3	\$1,042.92	0%	5%	\$0.08	0.01	0.01	AEG Research
Water	Exterior Lighting	Strategic Energy Management	employee	New	18.05	3	\$1,042.92	0%	5%	\$0.08	0.00	0.00	AEG Research
Water	Motors	Strategic Energy Management	employee	New	2,989.85	3	\$1,042.92	0%	5%	\$0.08	0.32	0.34	AEG Research
Water	Process	Strategic Energy Management	employee	New	163.15	3	\$1,042.92	0%	5%	\$0.08	0.02	0.02	AEG Research
Water	Miscellaneous	Strategic Energy Management	employee	New	140.46	3	\$1,042.92	0%	5%	\$0.08	0.02	0.01	AEG Research
Water	Interior Lighting	Commissioning	employee	New	93.65	3	\$1,881.47	5%	39%	\$0.15	0.06	0.10	AEG Research
Water	Exterior Lighting	Commissioning	employee	New	20.83	3	\$1,881.47	5%	39%	\$0.15	0.01	0.02	AEG Research
Water	Motors	Commissioning	employee	New	3,448.99	3	\$1,881.47	5%	39%	\$0.15	2.53	2.64	AEG Research
Water	Process	Commissioning	employee	New	188.20	3	\$1,881.47	5%	39%	\$0.15	0.14	0.14	AEG Research
Water	Miscellaneous	Commissioning	employee	New	162.03	3	\$1,881.47	5%	39%	\$0.15	0.15	0.09	AEG Research
Water	Interior Lighting	Retrocommissioning	employee	New	94.00	3	\$1,194.39	0%	0%	\$0.10	0.00	0.00	AEG Research
Water	Exterior Lighting	Retrocommissioning	employee	New	20.83	3	\$1,194.39	0%	0%	\$0.10	0.00	0.00	AEG Research
Water	Motors	Retrocommissioning	employee	New	3,449.83	3	\$1,194.39	0%	0%	\$0.10	0.00	0.00	AEG Research
Water	Process	Retrocommissioning	employee	New	188.25	3	\$1,194.39	0%	0%	\$0.10	0.00	0.00	AEG Research
Water	Miscellaneous	Retrocommissioning	employee	New	162.07	3	\$1,194.39	0%	0%	\$0.10	0.00	0.00	AEG Research
Water	Motors	Municipal Sewage Treatment	employee	New	1,764.05	12	\$996.83	0%	0%	\$0.06	0.00	0.00	7th Power Plan
Water	Motors	Municipal Water Supply Treatment	employee	New	0.00	12	\$0.00	15%	35%	\$0.00	0.00	0.00	7th Power Plan
Chemical Mfg	Cooling	Insulation - Ceiling	sqft	Existing	0.12	45	\$1.28	15%	25%	\$0.14	1.89	2.04	Building Energy Simulation Tool
Chemical Mfg	Heating	Insulation - Ceiling	sqft	Existing	0.54	45	\$1.28	15%	25%	\$0.14	9.30	9.59	Building Energy Simulation Tool
Chemical Mfg	Ventilation	Insulation - Ceiling	sqft	Existing	0.02	45	\$1.28	15%	25%	\$0.14	1.31	1.56	Building Energy Simulation Tool
Chemical Mfg	Cooling	Insulation - Ducting	sqft	Existing	0.05	20	\$0.84	15%	25%	\$1.04	0.69	0.77	Building Energy Simulation Tool

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Chemical Mfg	Heating	Insulation - Ducting	sqft	Existing	0.02	20	\$0.84	15%	25%	\$1.04	0.38	0.40	Building Energy Simulation Tool
Chemical Mfg	Ventilation	Insulation - Ducting	sqft	Existing	0.00	20	\$0.84	15%	25%	\$1.04	0.05	0.07	Building Energy Simulation Tool
Chemical Mfg	Cooling	Insulation - Wall Cavity	sqft	Existing	0.00	45	\$0.15	45%	50%	\$0.02	0.02	0.02	Building Energy Simulation Tool
Chemical Mfg	Heating	Insulation - Wall Cavity	sqft	Existing	0.76	45	\$0.15	45%	50%	\$0.02	6.69	6.71	Building Energy Simulation Tool
Chemical Mfg	Ventilation	Insulation - Wall Cavity	sqft	Existing	0.02	45	\$0.15	45%	50%	\$0.02	0.87	1.04	Building Energy Simulation Tool
Chemical Mfg	Cooling	HVAC - Duct Repair and Sealing	sqft	Existing	0.02	18	\$0.00	15%	25%	\$0.00	0.25	0.27	Building Energy Simulation Tool
Chemical Mfg	Heating	HVAC - Duct Repair and Sealing	sqft	Existing	0.05	18	\$0.00	15%	25%	\$0.00	0.94	0.95	Building Energy Simulation Tool
Chemical Mfg	Ventilation	HVAC - Duct Repair and Sealing	sqft	Existing	0.00	18	\$0.00	15%	25%	\$0.00	0.12	0.15	Building Energy Simulation Tool
Chemical Mfg	Cooling	Chiller - Chilled Water Reset	sqft	Existing	0.05	10	\$0.01	15%	45%	\$0.03	0.63	0.68	AEG-BEST
Chemical Mfg	Cooling	Chiller - Chilled Water Variable-Flow System	sqft	Existing	0.25	15	\$0.50	15%	60%	\$0.20	4.93	5.57	AEG-BEST
Chemical Mfg	Cooling	Chiller - Variable Speed Fans	sqft	Existing	0.09	15	\$0.03	15%	75%	\$0.03	2.56	2.78	New Jersey TRM
Chemical Mfg	Cooling	HVAC - Economizer	sqft	Existing	1.09	10	\$0.25	18%	30%	\$0.03	2.60	2.82	AEG-BEST
Chemical Mfg	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.25	15%	35%	\$10.43	0.38	0.49	7th Power Plan
Chemical Mfg	Cooling	Destratification Fans (HVLS)	sqft	Existing	0.16	15	\$0.63	15%	50%	\$0.04	9.35	10.22	AEG Research
Chemical Mfg	Heating	Destratification Fans (HVLS)	sqft	Existing	1.39	15	\$0.63	15%	50%	\$0.04	92.05	92.86	AEG Research
Chemical Mfg	Cooling	RTU - Maintenance	sqft	Existing	0.08	3	\$0.07	15%	75%	\$0.27	4.64	5.38	AEG Research
Chemical Mfg	Cooling	Thermostat - WiFi/Interactive	sqft	Existing	0.28	5	\$0.66	5%	15%	\$0.09	4.36	4.74	7th Power Plan
Chemical Mfg	Heating	Thermostat - WiFi/Interactive	sqft	Existing	1.27	5	\$0.66	5%	15%	\$0.09	21.82	22.61	7th Power Plan
Chemical Mfg	Ventilation	Thermostat - WiFi/Interactive	sqft	Existing	0.04	5	\$0.66	5%	15%	\$0.09	3.06	3.67	7th Power Plan
Chemical Mfg	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	2.08	15	\$0.35	7%	33%	\$0.01	32.18	40.65	7th Power Plan
Chemical Mfg	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	2.84	15	\$0.58	7%	33%	\$0.02	42.69	55.61	7th Power Plan

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Chemical Mfg	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	Existing	0.02	15	\$0.00	1%	2%	\$0.01	0.16	0.24	7th Power Plan
Chemical Mfg	Interior Lighting	Interior Lighting - Timeclocks and Timers	sqft	Existing	0.00	8	\$0.00	7%	7%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Chemical Mfg	Interior Lighting	Interior Lighting - Skylights	sqft	Existing	0.00	15	\$1.01	15%	23%	\$0.00	0.00	0.00	AEG Research
Chemical Mfg	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	sqft	Existing	0.03	16	\$1.81	5%	40%	\$4.03	4.71	7.64	7th Power Plan
Chemical Mfg	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	Existing	0.04	11	\$0.00	15%	50%	\$0.01	5.37	7.68	Illinois TRM
Chemical Mfg	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	sqft	Existing	0.05	8	\$0.03	15%	25%	\$0.08	6.47	9.98	7th Power Plan
Chemical Mfg	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	Existing	0.03	8	\$0.02	33%	60%	\$0.08	8.98	14.26	Pacific Gas and Electric Research
Chemical Mfg	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	Existing	0.03	7	\$1.19	15%	30%	\$4.46	5.60	9.42	AEG Research
Chemical Mfg	Process	Process - Conductivity Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Chemical Mfg	Process	Process - Timers and Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Chemical Mfg	Motors	Process - Timers and Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Chemical Mfg	Process	Refrigeration - Floating Head Pressure	employee	Existing	234.27	15	\$228.28	20%	50%	\$0.11	27.89	27.96	RTF Workbook
Chemical Mfg	Process	Refrigeration - System Optimization	employee	Existing	376.11	15	\$160.75	20%	50%	\$0.05	44.81	44.81	AEG Research
Chemical Mfg	Motors	Pumping System - Equipment Upgrade	employee	Existing	2,481.09	10	\$376.98	9%	38%	\$0.02	278.20	292.23	7th Power Plan
Chemical Mfg	Motors	Pumping System - System Optimization	employee	Existing	1,820.69	12	\$574.52	9%	38%	\$0.03	197.55	208.31	UNIDO Study on Industrial Energy Efficiency
Chemical Mfg	Motors	Pumping System - Variable Speed Drive	employee	Existing	1,781.83	10	\$597.71	9%	38%	\$0.04	191.97	205.39	UNIDO Study on Industrial Energy Efficiency
Chemical Mfg	Motors	Fan System - Equipment Upgrade	employee	Existing	627.74	10	\$64.97	9%	38%	\$0.02	68.73	71.12	UNIDO Study on Industrial Energy Efficiency
Chemical Mfg	Motors	Fan System - Flow Optimization	employee	Existing	739.61	10	\$107.49	9%	38%	\$0.02	80.88	83.89	UNIDO Study on Industrial Energy Efficiency
Chemical Mfg	Motors	Fan System - Variable Speed Drive	employee	Existing	1,056.73	10	\$540.89	9%	38%	\$0.06	112.72	123.01	UNIDO Study on Industrial Energy Efficiency

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Chemical Mfg	Motors	Compressed Air - Equipment Upgrade	employee	Existing	4,918.62	10	\$357.91	17%	50%	\$0.01	655.03	655.03	7th Power Plan
Chemical Mfg	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	Existing	0.00	15	\$0.00	16%	38%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Chemical Mfg	Motors	Compressed Air - Refrigerated Cycling Dryers	employee	Existing	0.00	10	\$0.00	16%	30%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Chemical Mfg	Motors	Compressed Air - System Controls	employee	Existing	1,019.59	10	\$255.90	9%	38%	\$0.03	113.18	121.98	UNIDO Study on Industrial Energy Efficiency
Chemical Mfg	Motors	Compressed Air - Leak Management Program	employee	Existing	2,726.31	10	\$257.24	18%	75%	\$0.02	617.67	631.17	7th Power Plan
Chemical Mfg	Motors	Compressed Air - Variable Speed Drive	employee	Existing	1,856.11	15	\$1,568.92	26%	45%	\$0.08	135.95	150.31	UNIDO Study on Industrial Energy Efficiency
Chemical Mfg	Motors	Compressed Air - Low Pressure-Drop Filters	employee	Existing	61.90	10	\$24.18	17%	50%	\$0.05	7.93	8.77	Illinois TRM
Chemical Mfg	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	Existing	386.82	10	\$78.45	17%	50%	\$0.03	50.31	53.65	UNIDO Study on Industrial Energy Efficiency
Chemical Mfg	Motors	Compressed Air - Outside Air Intake	employee	Existing	0.00	20	\$0.00	17%	50%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Chemical Mfg	Motors	Compressed Air - Receiver Capacity Addition	employee	Existing	378.56	15	\$215.73	17%	50%	\$0.06	48.89	53.08	UNIDO Study on Industrial Energy Efficiency
Chemical Mfg	Motors	Material Handling - Variable Speed Drive	employee	Existing	2,116.96	10	\$813.51	25%	45%	\$0.05	159.47	171.84	7th Power Plan
Chemical Mfg	Motors	Motors - Green Rewind (<100 HP)	employee	Existing	75.19	10	\$35.20	10%	50%	\$0.06	56.34	61.35	7th Power Plan
Chemical Mfg	Motors	Motors - Green Rewind (100 HP+)	employee	Existing	42.94	10	\$12.49	6%	25%	\$0.04	15.43	16.48	7th Power Plan
Chemical Mfg	Motors	Switch from Belt Drive to Direct Drive	employee	Existing	661.21	12	\$154.53	16%	25%	\$0.03	119.91	125.72	2015-mdu-irp-report---volume-iii.pdf
Chemical Mfg	Motors	Motors - Synchronous Belts	employee	Existing	172.33	10	\$46.49	16%	36%	\$0.03	66.85	72.35	7th Power Plan
Chemical Mfg	Miscellaneous	Agriculture - Engine Block Timer	employee	Existing	1,503.95	3	\$18.55	0%	0%	\$0.00	0.00	0.00	Vermont TRM
Chemical Mfg	Motors	Agriculture - Live Stock Waterer	employee	Existing	5,749.93	10	\$3,319.96	0%	0%	\$0.07	0.00	0.00	Ontario Power TRM
Chemical Mfg	Process	Dairy - Milk Precoolers	employee	Existing	1,561.79	15	\$726.42	0%	0%	\$0.05	0.00	0.00	Ontario Power TRM
Chemical Mfg	Process	Clean Room: Change Filter Strategy	employee	Existing	6,415.68	15	\$47.32	0%	0%	\$0.00	0.00	0.00	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Chemical Mfg	Process	Clean Room: Chiller Optimize	employee	Existing	464.58	15	\$43.01	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Chemical Mfg	Process	Clean Room: Clean Room HVAC	employee	Existing	282.08	15	\$51.92	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Chemical Mfg	Process	Elec Chip Fab: Solidstate Chiller	employee	Existing	281.12	15	\$163.09	0%	0%	\$0.05	0.00	0.00	7th Power Plan
Chemical Mfg	Process	Elec Chip Fab: Eliminate Exhaust	employee	Existing	801.96	15	\$170.24	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Chemical Mfg	Process	Elec Chip Fab: Exhaust Injector	employee	Existing	1,598.47	15	\$821.20	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Chemical Mfg	Process	Elec Chip Fab: Reduce Gas Pressure	employee	Existing	1,603.92	15	\$16.47	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Chemical Mfg	Motors	Panel: Hydraulic Press	employee	Existing	3,234.01	10	\$813.03	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Chemical Mfg	Motors	Wood: Replace Pneumatic Conveyor	employee	Existing	3,693.36	10	\$60.89	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Chemical Mfg	Process	Metal: New Arc Furnace	employee	Existing	2,513.32	10	\$263.83	0%	0%	-\$0.20	0.00	0.00	7th Power Plan
Chemical Mfg	Process	Paper: Premium Control Large Material	employee	Existing	1,076.14	10	\$541.33	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Chemical Mfg	Process	Paper: Efficient Pulp Screen	employee	Existing	866.73	10	\$178.32	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Chemical Mfg	Process	Kraft: Effluent Treatment System	employee	Existing	866.73	10	\$73.11	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Chemical Mfg	Motors	Kraft: Efficient Agitator	employee	Existing	5,996.19	10	\$606.70	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Chemical Mfg	Process	Mech Pulp: Premium Process	employee	Existing	9.67	5	\$1.25	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Chemical Mfg	Motors	Mech Pulp: Refiner Plate Improvement	employee	Existing	49.29	1	\$2.31	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Chemical Mfg	Cooling	Transformer - High Efficiency	employee	Existing	57.00	10	\$178.92	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Chemical Mfg	Heating	Transformer - High Efficiency	employee	Existing	255.27	10	\$178.92	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Chemical Mfg	Ventilation	Transformer - High Efficiency	employee	Existing	7.20	10	\$178.92	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Chemical Mfg	Interior Lighting	Transformer - High Efficiency	employee	Existing	27.58	10	\$178.92	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Chemical Mfg	Exterior Lighting	Transformer - High Efficiency	employee	Existing	5.96	10	\$178.92	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Chemical Mfg	Motors	Transformer - High Efficiency	employee	Existing	621.46	10	\$178.92	15%	15%	\$0.02	0.00	0.00	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Chemical Mfg	Process	Transformer - High Efficiency	employee	Existing	430.98	10	\$178.92	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Chemical Mfg	Miscellaneous	Transformer - High Efficiency	employee	Existing	56.92	10	\$178.92	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Chemical Mfg	Cooling	Strategic Energy Management	employee	Existing	157.59	3	\$1,098.85	0%	5%	\$0.08	0.50	0.56	AEG Research
Chemical Mfg	Heating	Strategic Energy Management	employee	Existing	729.80	3	\$1,098.85	0%	5%	\$0.08	2.64	2.76	AEG Research
Chemical Mfg	Ventilation	Strategic Energy Management	employee	Existing	20.60	3	\$1,098.85	0%	5%	\$0.08	0.37	0.45	AEG Research
Chemical Mfg	Interior Lighting	Strategic Energy Management	employee	Existing	78.49	3	\$1,098.85	0%	5%	\$0.08	1.15	1.66	AEG Research
Chemical Mfg	Exterior Lighting	Strategic Energy Management	employee	Existing	17.06	3	\$1,098.85	0%	5%	\$0.08	0.26	0.37	AEG Research
Chemical Mfg	Motors	Strategic Energy Management	employee	Existing	1,778.03	3	\$1,098.85	0%	5%	\$0.08	31.21	33.81	AEG Research
Chemical Mfg	Process	Strategic Energy Management	employee	Existing	1,232.60	3	\$1,098.85	0%	5%	\$0.08	22.58	22.84	AEG Research
Chemical Mfg	Miscellaneous	Strategic Energy Management	employee	Existing	162.64	3	\$1,098.85	0%	5%	\$0.08	3.78	2.96	AEG Research
Chemical Mfg	Interior Lighting	Commissioning	employee	Existing	90.47	3	\$1,844.79	0%	0%	\$0.15	0.00	0.00	AEG Research
Chemical Mfg	Exterior Lighting	Commissioning	employee	Existing	19.67	3	\$1,844.79	0%	0%	\$0.15	0.00	0.00	AEG Research
Chemical Mfg	Motors	Commissioning	employee	Existing	2,049.07	3	\$1,844.79	0%	0%	\$0.15	0.00	0.00	AEG Research
Chemical Mfg	Process	Commissioning	employee	Existing	1,420.43	3	\$1,844.79	0%	0%	\$0.15	0.00	0.00	AEG Research
Chemical Mfg	Miscellaneous	Commissioning	employee	Existing	187.40	3	\$1,844.79	0%	0%	\$0.15	0.00	0.00	AEG Research
Chemical Mfg	Interior Lighting	Retrocommissioning	employee	Existing	91.94	3	\$1,171.11	5%	39%	\$0.10	9.24	13.17	AEG Research
Chemical Mfg	Exterior Lighting	Retrocommissioning	employee	Existing	19.86	3	\$1,171.11	5%	39%	\$0.10	2.05	2.93	AEG Research
Chemical Mfg	Motors	Retrocommissioning	employee	Existing	2,071.53	3	\$1,171.11	5%	39%	\$0.10	249.16	267.33	AEG Research
Chemical Mfg	Process	Retrocommissioning	employee	Existing	1,436.59	3	\$1,171.11	5%	39%	\$0.10	180.25	180.67	AEG Research
Chemical Mfg	Miscellaneous	Retrocommissioning	employee	Existing	189.74	3	\$1,171.11	5%	39%	\$0.10	30.18	23.45	AEG Research
Chemical Mfg	Motors	Municipal Sewage Treatment	employee	Existing	313.28	12	\$189.51	0%	0%	\$0.06	0.00	0.00	7th Power Plan
Chemical Mfg	Motors	Municipal Water Supply Treatment	employee	Existing	0.00	12	\$0.00	0%	0%	\$0.00	0.00	0.00	7th Power Plan

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Chemical Mfg	Cooling	Insulation - Ceiling	sqft	New	0.11	45	\$1.28	15%	25%	\$0.16	0.66	0.67	Building Energy Simulation Tool
Chemical Mfg	Heating	Insulation - Ceiling	sqft	New	0.52	45	\$1.28	15%	25%	\$0.16	3.27	3.27	Building Energy Simulation Tool
Chemical Mfg	Ventilation	Insulation - Ceiling	sqft	New	0.01	45	\$1.28	15%	25%	\$0.16	0.40	0.44	Building Energy Simulation Tool
Chemical Mfg	Cooling	Insulation - Ducting	sqft	New	0.04	20	\$0.84	15%	25%	\$1.11	0.25	0.26	Building Energy Simulation Tool
Chemical Mfg	Heating	Insulation - Ducting	sqft	New	0.02	20	\$0.84	15%	25%	\$1.11	0.14	0.14	Building Energy Simulation Tool
Chemical Mfg	Ventilation	Insulation - Ducting	sqft	New	0.00	20	\$0.84	15%	25%	\$1.11	0.02	0.02	Building Energy Simulation Tool
Chemical Mfg	Cooling	Insulation - Wall Cavity	sqft	New	0.00	45	\$0.15	45%	50%	\$0.02	0.01	0.01	Building Energy Simulation Tool
Chemical Mfg	Heating	Insulation - Wall Cavity	sqft	New	0.71	45	\$0.15	45%	50%	\$0.02	2.24	2.24	Building Energy Simulation Tool
Chemical Mfg	Ventilation	Insulation - Wall Cavity	sqft	New	0.01	45	\$0.15	45%	50%	\$0.02	0.27	0.29	Building Energy Simulation Tool
Chemical Mfg	Cooling	HVAC - Duct Repair and Sealing	sqft	New	0.01	18	\$0.00	15%	25%	\$0.00	0.08	0.08	Building Energy Simulation Tool
Chemical Mfg	Heating	HVAC - Duct Repair and Sealing	sqft	New	0.05	18	\$0.00	15%	25%	\$0.00	0.29	0.29	Building Energy Simulation Tool
Chemical Mfg	Ventilation	HVAC - Duct Repair and Sealing	sqft	New	0.00	18	\$0.00	15%	25%	\$0.00	0.03	0.04	Building Energy Simulation Tool
Chemical Mfg	Cooling	Chiller - Chilled Water Reset	sqft	New	0.04	10	\$0.01	15%	45%	\$0.03	0.10	0.10	AEG-BEST
Chemical Mfg	Cooling	Chiller - Chilled Water Variable-Flow System	sqft	New	0.21	15	\$0.50	15%	60%	\$0.24	1.00	1.04	AEG-BEST
Chemical Mfg	Cooling	Chiller - Variable Speed Fans	sqft	New	0.08	15	\$0.03	15%	75%	\$0.04	0.50	0.52	New Jersey TRM
Chemical Mfg	Cooling	HVAC - Economizer	sqft	New	0.98	10	\$0.25	18%	30%	\$0.03	0.44	0.46	AEG-BEST
Chemical Mfg	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.25	15%	35%	\$12.47	0.08	0.09	7th Power Plan
Chemical Mfg	Cooling	Destratification Fans (HVLS)	sqft	New	0.14	15	\$0.63	15%	50%	\$0.05	2.03	2.11	AEG Research
Chemical Mfg	Heating	Destratification Fans (HVLS)	sqft	New	1.30	15	\$0.63	15%	50%	\$0.05	19.77	19.84	AEG Research
Chemical Mfg	Cooling	RTU - Maintenance	sqft	New	0.08	3	\$0.07	15%	75%	\$0.28	0.31	0.34	AEG Research
Chemical Mfg	Cooling	Thermostat - WiFi/Interactive	sqft	New	0.26	5	\$0.66	5%	15%	\$0.09	0.20	0.21	7th Power Plan

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Chemical Mfg	Heating	Thermostat - WiFi/Interactive	sqft	New	1.22	5	\$0.66	5%	15%	\$0.09	0.99	1.01	7th Power Plan
Chemical Mfg	Ventilation	Thermostat - WiFi/Interactive	sqft	New	0.03	5	\$0.66	5%	15%	\$0.09	0.12	0.15	7th Power Plan
Chemical Mfg	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	1.89	15	\$0.35	22%	41%	\$0.01	10.97	13.47	7th Power Plan
Chemical Mfg	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	2.59	15	\$0.58	22%	41%	\$0.02	14.91	18.50	7th Power Plan
Chemical Mfg	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	New	0.02	15	\$0.00	1%	2%	\$0.01	0.03	0.04	7th Power Plan
Chemical Mfg	Interior Lighting	Interior Lighting - Timeclocks and Timers	sqft	New	0.00	8	\$0.00	7%	7%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Chemical Mfg	Interior Lighting	Interior Lighting - Skylights	sqft	New	0.00	15	\$1.01	18%	24%	\$0.00	0.00	0.00	AEG Research
Chemical Mfg	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	sqft	New	0.03	16	\$1.81	5%	40%	\$4.03	1.17	1.60	7th Power Plan
Chemical Mfg	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	New	0.03	11	\$0.00	15%	50%	\$0.01	1.04	1.41	Illinois TRM
Chemical Mfg	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	sqft	New	0.04	8	\$0.03	15%	25%	\$0.08	0.99	1.50	7th Power Plan
Chemical Mfg	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	New	0.02	8	\$0.02	44%	60%	\$0.08	0.84	1.27	Pacific Gas and Electric Research
Chemical Mfg	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	New	0.03	7	\$1.19	15%	30%	\$4.40	0.85	1.30	AEG Research
Chemical Mfg	Process	Process - Conductivity Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Chemical Mfg	Process	Process - Timers and Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Chemical Mfg	Motors	Process - Timers and Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Chemical Mfg	Process	Refrigeration - Floating Head Pressure	employee	New	234.65	15	\$161.33	20%	50%	\$0.08	6.37	6.37	RTF Workbook
Chemical Mfg	Process	Refrigeration - System Optimization	employee	New	376.11	15	\$56.41	20%	50%	\$0.02	10.21	10.21	AEG Research
Chemical Mfg	Motors	Pumping System - Equipment Upgrade	employee	New	2,568.60	10	\$376.98	9%	38%	\$0.02	54.80	54.80	7th Power Plan
Chemical Mfg	Motors	Pumping System - System Optimization	employee	New	1,905.33	12	\$574.52	9%	38%	\$0.03	54.98	54.67	UNIDO Study on Industrial Energy Efficiency

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Chemical Mfg	Motors	Pumping System - Variable Speed Drive	employee	New	1,883.47	10	\$597.71	9%	38%	\$0.04	48.81	48.57	UNIDO Study on Industrial Energy Efficiency
Chemical Mfg	Motors	Fan System - Equipment Upgrade	employee	New	647.98	10	\$64.97	9%	38%	\$0.02	16.74	16.66	UNIDO Study on Industrial Energy Efficiency
Chemical Mfg	Motors	Fan System - Flow Optimization	employee	New	764.48	10	\$107.49	9%	38%	\$0.02	19.75	19.66	UNIDO Study on Industrial Energy Efficiency
Chemical Mfg	Motors	Fan System - Variable Speed Drive	employee	New	1,130.47	10	\$540.89	9%	38%	\$0.06	29.33	29.22	UNIDO Study on Industrial Energy Efficiency
Chemical Mfg	Motors	Compressed Air - Equipment Upgrade	employee	New	4,918.62	10	\$357.91	17%	50%	\$0.01	121.64	121.64	7th Power Plan
Chemical Mfg	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	New	0.00	15	\$0.00	16%	38%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Chemical Mfg	Motors	Compressed Air - Refrigerated Cycling Dryers	employee	New	0.00	10	\$0.00	16%	30%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Chemical Mfg	Motors	Compressed Air - System Controls	employee	New	1,070.99	10	\$255.90	9%	38%	\$0.03	22.89	22.96	UNIDO Study on Industrial Energy Efficiency
Chemical Mfg	Motors	Compressed Air - Leak Management Program	employee	New	2,770.57	10	\$257.24	18%	75%	\$0.02	117.82	117.76	7th Power Plan
Chemical Mfg	Motors	Compressed Air - Variable Speed Drive	employee	New	1,976.61	15	\$1,568.92	26%	45%	\$0.08	34.61	34.71	UNIDO Study on Industrial Energy Efficiency
Chemical Mfg	Motors	Compressed Air - Low Pressure-Drop Filters	employee	New	65.90	10	\$24.18	17%	50%	\$0.05	1.65	1.66	Illinois TRM
Chemical Mfg	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	New	404.27	10	\$78.45	17%	50%	\$0.03	10.08	10.09	UNIDO Study on Industrial Energy Efficiency
Chemical Mfg	Motors	Compressed Air - Outside Air Intake	employee	New	0.00	20	\$0.00	17%	50%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Chemical Mfg	Motors	Compressed Air - Receiver Capacity Addition	employee	New	399.68	15	\$215.73	17%	50%	\$0.06	12.24	12.24	UNIDO Study on Industrial Energy Efficiency
Chemical Mfg	Motors	Material Handling - Variable Speed Drive	employee	New	2,246.52	10	\$813.51	25%	45%	\$0.05	40.87	40.69	7th Power Plan
Chemical Mfg	Motors	Motors - Green Rewind (<100 HP)	employee	New	80.34	10	\$35.20	10%	50%	\$0.06	14.63	14.57	7th Power Plan
Chemical Mfg	Motors	Motors - Green Rewind (100 HP+)	employee	New	45.32	10	\$12.49	6%	25%	\$0.04	3.91	3.89	7th Power Plan
Chemical Mfg	Motors	Switch from Belt Drive to Direct Drive	employee	New	689.48	12	\$154.53	16%	25%	\$0.03	33.15	32.96	2015-mdu-irp-report---volume-iii.pdf
Chemical Mfg	Motors	Motors - Synchronous Belts	employee	New	181.57	10	\$46.49	16%	36%	\$0.03	13.59	13.63	7th Power Plan

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Chemical Mfg	Miscellaneous	Agriculture - Engine Block Timer	employee	New	1,503.95	3	\$18.55	0%	0%	\$0.00	0.00	0.00	Vermont TRM
Chemical Mfg	Motors	Agriculture - Live Stock Waterer	employee	New	6,165.61	10	\$3,319.96	0%	0%	\$0.07	0.00	0.00	Ontario Power TRM
Chemical Mfg	Process	Dairy - Milk Precoolers	employee	New	1,564.33	15	\$726.42	0%	0%	\$0.05	0.00	0.00	Ontario Power TRM
Chemical Mfg	Process	Clean Room: Change Filter Strategy	employee	New	6,415.68	15	\$47.32	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Chemical Mfg	Process	Clean Room: Chiller Optimize	employee	New	464.58	15	\$43.01	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Chemical Mfg	Process	Clean Room: Clean Room HVAC	employee	New	281.58	15	\$51.92	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Chemical Mfg	Process	Elec Chip Fab: Solidstate Chiller	employee	New	281.58	15	\$163.09	0%	0%	\$0.05	0.00	0.00	7th Power Plan
Chemical Mfg	Process	Elec Chip Fab: Eliminate Exhaust	employee	New	800.54	15	\$170.24	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Chemical Mfg	Process	Elec Chip Fab: Exhaust Injector	employee	New	1,601.08	15	\$821.20	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Chemical Mfg	Process	Elec Chip Fab: Reduce Gas Pressure	employee	New	1,603.92	15	\$16.47	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Chemical Mfg	Motors	Panel: Hydraulic Press	employee	New	3,387.61	10	\$813.03	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Chemical Mfg	Motors	Wood: Replace Pneumatic Conveyor	employee	New	3,693.36	10	\$60.89	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Chemical Mfg	Process	Metal: New Arc Furnace	employee	New	2,508.88	10	\$263.83	0%	0%	-\$0.20	0.00	0.00	7th Power Plan
Chemical Mfg	Process	Paper: Premium Control Large Material	employee	New	1,078.99	10	\$541.33	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Chemical Mfg	Process	Paper: Efficient Pulp Screen	employee	New	865.19	10	\$178.32	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Chemical Mfg	Process	Kraft: Effluent Treatment System	employee	New	865.19	10	\$73.11	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Chemical Mfg	Motors	Kraft: Efficient Agitator	employee	New	6,189.52	10	\$606.70	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Chemical Mfg	Process	Mech Pulp: Premium Process	employee	New	9.67	5	\$1.25	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Chemical Mfg	Motors	Mech Pulp: Refiner Plate Improvement	employee	New	52.85	1	\$2.31	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Chemical Mfg	Cooling	Transformer - High Efficiency	employee	New	52.46	10	\$176.52	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Chemical Mfg	Heating	Transformer - High Efficiency	employee	New	246.05	10	\$176.52	15%	15%	\$0.02	0.00	0.00	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Chemical Mfg	Ventilation	Transformer - High Efficiency	employee	New	5.07	10	\$176.52	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Chemical Mfg	Interior Lighting	Transformer - High Efficiency	employee	New	25.18	10	\$176.52	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Chemical Mfg	Exterior Lighting	Transformer - High Efficiency	employee	New	5.58	10	\$176.52	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Chemical Mfg	Motors	Transformer - High Efficiency	employee	New	666.39	10	\$176.52	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Chemical Mfg	Process	Transformer - High Efficiency	employee	New	432.12	10	\$176.52	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Chemical Mfg	Miscellaneous	Transformer - High Efficiency	employee	New	53.92	10	\$176.52	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Chemical Mfg	Cooling	Strategic Energy Management	employee	New	149.14	3	\$1,084.14	0%	5%	\$0.08	0.01	0.01	AEG Research
Chemical Mfg	Heating	Strategic Energy Management	employee	New	708.32	3	\$1,084.14	0%	5%	\$0.08	0.06	0.06	AEG Research
Chemical Mfg	Ventilation	Strategic Energy Management	employee	New	14.58	3	\$1,084.14	0%	5%	\$0.08	0.01	0.01	AEG Research
Chemical Mfg	Interior Lighting	Strategic Energy Management	employee	New	72.47	3	\$1,084.14	0%	5%	\$0.08	0.03	0.05	AEG Research
Chemical Mfg	Exterior Lighting	Strategic Energy Management	employee	New	16.12	3	\$1,084.14	0%	5%	\$0.08	0.01	0.01	AEG Research
Chemical Mfg	Motors	Strategic Energy Management	employee	New	1,925.11	3	\$1,084.14	0%	5%	\$0.08	0.82	0.85	AEG Research
Chemical Mfg	Process	Strategic Energy Management	employee	New	1,248.34	3	\$1,084.14	0%	5%	\$0.08	0.53	0.53	AEG Research
Chemical Mfg	Miscellaneous	Strategic Energy Management	employee	New	155.76	3	\$1,084.14	0%	5%	\$0.08	0.08	0.05	AEG Research
Chemical Mfg	Interior Lighting	Commissioning	employee	New	83.60	3	\$1,850.39	5%	39%	\$0.15	0.22	0.36	AEG Research
Chemical Mfg	Exterior Lighting	Commissioning	employee	New	18.59	3	\$1,850.39	5%	39%	\$0.15	0.05	0.09	AEG Research
Chemical Mfg	Motors	Commissioning	employee	New	2,220.75	3	\$1,850.39	5%	39%	\$0.15	6.42	6.67	AEG Research
Chemical Mfg	Process	Commissioning	employee	New	1,440.04	3	\$1,850.39	5%	39%	\$0.15	4.12	4.13	AEG Research
Chemical Mfg	Miscellaneous	Commissioning	employee	New	179.68	3	\$1,850.39	5%	39%	\$0.15	0.64	0.41	AEG Research
Chemical Mfg	Interior Lighting	Retrocommissioning	employee	New	83.92	3	\$1,174.66	0%	0%	\$0.10	0.00	0.00	AEG Research

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Chemical Mfg	Exterior Lighting	Retrocommissioning	employee	New	18.60	3	\$1,174.66	0%	0%	\$0.10	0.00	0.00	AEG Research
Chemical Mfg	Motors	Retrocommissioning	employee	New	2,221.29	3	\$1,174.66	0%	0%	\$0.10	0.00	0.00	AEG Research
Chemical Mfg	Process	Retrocommissioning	employee	New	1,440.39	3	\$1,174.66	0%	0%	\$0.10	0.00	0.00	AEG Research
Chemical Mfg	Miscellaneous	Retrocommissioning	employee	New	179.72	3	\$1,174.66	0%	0%	\$0.10	0.00	0.00	AEG Research
Chemical Mfg	Motors	Municipal Sewage Treatment	employee	New	334.74	12	\$189.51	0%	0%	\$0.06	0.00	0.00	7th Power Plan
Chemical Mfg	Motors	Municipal Water Supply Treatment	employee	New	0.00	12	\$0.00	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Cooling	Insulation - Ceiling	sqft	Existing	0.12	45	\$1.28	15%	25%	\$0.14	0.16	0.17	Building Energy Simulation Tool
Electronic Equipment Mfg	Heating	Insulation - Ceiling	sqft	Existing	0.54	45	\$1.28	15%	25%	\$0.14	0.76	0.78	Building Energy Simulation Tool
Electronic Equipment Mfg	Ventilation	Insulation - Ceiling	sqft	Existing	0.02	45	\$1.28	15%	25%	\$0.14	0.11	0.13	Building Energy Simulation Tool
Electronic Equipment Mfg	Cooling	Insulation - Ducting	sqft	Existing	0.05	20	\$0.84	15%	25%	\$1.04	0.06	0.06	Building Energy Simulation Tool
Electronic Equipment Mfg	Heating	Insulation - Ducting	sqft	Existing	0.02	20	\$0.84	15%	25%	\$1.04	0.03	0.03	Building Energy Simulation Tool
Electronic Equipment Mfg	Ventilation	Insulation - Ducting	sqft	Existing	0.00	20	\$0.84	15%	25%	\$1.04	0.00	0.01	Building Energy Simulation Tool
Electronic Equipment Mfg	Cooling	Insulation - Wall Cavity	sqft	Existing	0.00	45	\$0.15	45%	50%	\$0.02	0.00	0.00	Building Energy Simulation Tool
Electronic Equipment Mfg	Heating	Insulation - Wall Cavity	sqft	Existing	0.76	45	\$0.15	45%	50%	\$0.02	0.55	0.55	Building Energy Simulation Tool
Electronic Equipment Mfg	Ventilation	Insulation - Wall Cavity	sqft	Existing	0.02	45	\$0.15	45%	50%	\$0.02	0.07	0.09	Building Energy Simulation Tool
Electronic Equipment Mfg	Cooling	HVAC - Duct Repair and Sealing	sqft	Existing	0.02	18	\$0.00	15%	25%	\$0.00	0.02	0.02	Building Energy Simulation Tool
Electronic Equipment Mfg	Heating	HVAC - Duct Repair and Sealing	sqft	Existing	0.05	18	\$0.00	15%	25%	\$0.00	0.08	0.08	Building Energy Simulation Tool
Electronic Equipment Mfg	Ventilation	HVAC - Duct Repair and Sealing	sqft	Existing	0.00	18	\$0.00	15%	25%	\$0.00	0.01	0.01	Building Energy Simulation Tool
Electronic Equipment Mfg	Cooling	Chiller - Chilled Water Reset	sqft	Existing	0.05	10	\$0.01	15%	45%	\$0.03	0.05	0.06	AEG-BEST
Electronic Equipment Mfg	Cooling	Chiller - Chilled Water Variable-Flow System	sqft	Existing	0.25	15	\$0.50	15%	60%	\$0.20	0.41	0.46	AEG-BEST

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Electronic Equipment Mfg	Cooling	Chiller - Variable Speed Fans	sqft	Existing	0.09	15	\$0.03	15%	75%	\$0.03	0.21	0.23	New Jersey TRM
Electronic Equipment Mfg	Cooling	HVAC - Economizer	sqft	Existing	0.20	10	\$0.25	18%	30%	\$0.16	0.20	0.22	AEG-BEST
Electronic Equipment Mfg	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.25	15%	35%	\$10.43	0.03	0.04	7th Power Plan
Electronic Equipment Mfg	Cooling	Destratification Fans (HVLS)	sqft	Existing	0.16	15	\$0.63	15%	50%	\$0.04	0.77	0.84	AEG Research
Electronic Equipment Mfg	Heating	Destratification Fans (HVLS)	sqft	Existing	1.39	15	\$0.63	15%	50%	\$0.04	7.53	7.60	AEG Research
Electronic Equipment Mfg	Cooling	RTU - Maintenance	sqft	Existing	0.08	3	\$0.07	15%	75%	\$0.27	0.38	0.44	AEG Research
Electronic Equipment Mfg	Cooling	Thermostat - WiFi/Interactive	sqft	Existing	0.28	5	\$0.66	5%	15%	\$0.09	0.36	0.39	7th Power Plan
Electronic Equipment Mfg	Heating	Thermostat - WiFi/Interactive	sqft	Existing	1.27	5	\$0.66	5%	15%	\$0.09	1.79	1.85	7th Power Plan
Electronic Equipment Mfg	Ventilation	Thermostat - WiFi/Interactive	sqft	Existing	0.04	5	\$0.66	5%	15%	\$0.09	0.25	0.30	7th Power Plan
Electronic Equipment Mfg	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.39	15	\$0.35	7%	33%	\$0.07	1.71	2.16	7th Power Plan
Electronic Equipment Mfg	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.54	15	\$0.58	7%	33%	\$0.09	2.26	2.95	7th Power Plan
Electronic Equipment Mfg	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	Existing	0.02	15	\$0.00	1%	2%	\$0.01	0.01	0.01	7th Power Plan
Electronic Equipment Mfg	Interior Lighting	Interior Lighting - Timeclocks and Timers	sqft	Existing	0.00	8	\$0.00	7%	7%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Electronic Equipment Mfg	Interior Lighting	Interior Lighting - Skylights	sqft	Existing	0.00	15	\$1.01	15%	23%	\$0.00	0.00	0.00	AEG Research
Electronic Equipment Mfg	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	sqft	Existing	0.03	16	\$1.81	5%	40%	\$4.03	0.25	0.40	7th Power Plan
Electronic Equipment Mfg	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	Existing	0.04	11	\$0.00	15%	50%	\$0.01	0.28	0.41	Illinois TRM
Electronic Equipment Mfg	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	sqft	Existing	0.05	8	\$0.03	15%	25%	\$0.08	0.34	0.53	7th Power Plan
Electronic Equipment Mfg	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	Existing	0.03	8	\$0.02	33%	60%	\$0.08	0.48	0.76	Pacific Gas and Electric Research
Electronic Equipment Mfg	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	Existing	0.03	7	\$1.19	15%	30%	\$4.46	0.30	0.50	AEG Research

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Electronic Equipment Mfg	Process	Process - Conductivity Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Process	Process - Timers and Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Motors	Process - Timers and Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Process	Refrigeration - Floating Head Pressure	employee	Existing	53.23	15	\$54.24	20%	50%	\$0.11	0.62	0.65	RTF Workbook
Electronic Equipment Mfg	Process	Refrigeration - System Optimization	employee	Existing	86.47	15	\$38.20	20%	50%	\$0.05	1.02	1.05	AEG Research
Electronic Equipment Mfg	Motors	Pumping System - Equipment Upgrade	employee	Existing	40.55	10	\$6.04	9%	38%	\$0.02	0.46	0.47	7th Power Plan
Electronic Equipment Mfg	Motors	Pumping System - System Optimization	employee	Existing	30.09	12	\$9.20	9%	38%	\$0.03	0.33	0.34	UNIDO Study on Industrial Energy Efficiency
Electronic Equipment Mfg	Motors	Pumping System - Variable Speed Drive	employee	Existing	29.73	10	\$9.57	9%	38%	\$0.04	0.32	0.34	UNIDO Study on Industrial Energy Efficiency
Electronic Equipment Mfg	Motors	Fan System - Equipment Upgrade	employee	Existing	35.89	10	\$3.64	9%	38%	\$0.02	0.39	0.40	UNIDO Study on Industrial Energy Efficiency
Electronic Equipment Mfg	Motors	Fan System - Flow Optimization	employee	Existing	42.31	10	\$6.03	9%	38%	\$0.02	0.47	0.48	UNIDO Study on Industrial Energy Efficiency
Electronic Equipment Mfg	Motors	Fan System - Variable Speed Drive	employee	Existing	61.66	10	\$30.33	9%	38%	\$0.06	0.67	0.71	UNIDO Study on Industrial Energy Efficiency
Electronic Equipment Mfg	Motors	Compressed Air - Equipment Upgrade	employee	Existing	215.16	10	\$15.66	17%	50%	\$0.01	2.87	2.87	7th Power Plan
Electronic Equipment Mfg	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	Existing	0.00	15	\$0.00	16%	38%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Electronic Equipment Mfg	Motors	Compressed Air - Refrigerated Cycling Dryers	employee	Existing	0.00	10	\$0.00	16%	30%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Electronic Equipment Mfg	Motors	Compressed Air - System Controls	employee	Existing	46.35	10	\$11.19	9%	38%	\$0.03	0.52	0.54	UNIDO Study on Industrial Energy Efficiency
Electronic Equipment Mfg	Motors	Compressed Air - Leak Management Program	employee	Existing	120.46	10	\$11.25	18%	75%	\$0.02	2.74	2.78	7th Power Plan
Electronic Equipment Mfg	Motors	Compressed Air - Variable Speed Drive	employee	Existing	84.30	15	\$68.63	26%	45%	\$0.08	0.62	0.67	UNIDO Study on Industrial Energy Efficiency
Electronic Equipment Mfg	Motors	Compressed Air - Low Pressure-Drop Filters	employee	Existing	2.81	10	\$1.06	17%	50%	\$0.05	0.04	0.04	Illinois TRM
Electronic Equipment Mfg	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	Existing	17.45	10	\$3.43	17%	50%	\$0.03	0.23	0.24	UNIDO Study on Industrial Energy Efficiency

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Electronic Equipment Mfg	Motors	Compressed Air - Outside Air Intake	employee	Existing	0.00	20	\$0.00	17%	50%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Electronic Equipment Mfg	Motors	Compressed Air - Receiver Capacity Addition	employee	Existing	17.24	15	\$9.44	17%	50%	\$0.06	0.23	0.24	UNIDO Study on Industrial Energy Efficiency
Electronic Equipment Mfg	Motors	Material Handling - Variable Speed Drive	employee	Existing	335.15	10	\$122.77	25%	45%	\$0.05	2.56	2.68	7th Power Plan
Electronic Equipment Mfg	Motors	Motors - Green Rewind (<100 HP)	employee	Existing	6.32	10	\$2.84	10%	50%	\$0.06	0.38	0.41	7th Power Plan
Electronic Equipment Mfg	Motors	Motors - Green Rewind (100 HP+)	employee	Existing	3.61	10	\$1.01	6%	25%	\$0.04	0.11	0.11	7th Power Plan
Electronic Equipment Mfg	Motors	Switch from Belt Drive to Direct Drive	employee	Existing	55.11	12	\$12.49	16%	25%	\$0.03	0.81	0.83	2015-mdu-irp-report---volume-iii.pdf
Electronic Equipment Mfg	Motors	Motors - Synchronous Belts	employee	Existing	14.50	10	\$3.76	16%	36%	\$0.03	0.46	0.48	7th Power Plan
Electronic Equipment Mfg	Miscellaneous	Agriculture - Engine Block Timer	employee	Existing	770.06	3	\$9.50	0%	0%	\$0.00	0.00	0.00	Vermont TRM
Electronic Equipment Mfg	Motors	Agriculture - Live Stock Waterer	employee	Existing	95.88	10	\$53.16	0%	0%	\$0.07	0.00	0.00	Ontario Power TRM
Electronic Equipment Mfg	Process	Dairy - Milk Precoolers	employee	Existing	358.55	15	\$172.61	0%	0%	\$0.05	0.00	0.00	Ontario Power TRM
Electronic Equipment Mfg	Process	Clean Room: Change Filter Strategy	employee	Existing	111.94	15	\$0.83	15%	75%	\$0.00	0.00	2.62	7th Power Plan
Electronic Equipment Mfg	Process	Clean Room: Chiller Optimize	employee	Existing	108.85	15	\$10.22	15%	75%	\$0.01	2.54	2.56	7th Power Plan
Electronic Equipment Mfg	Process	Clean Room: Clean Room HVAC	employee	Existing	65.38	15	\$12.34	15%	75%	\$0.02	1.52	1.54	7th Power Plan
Electronic Equipment Mfg	Process	Elec Chip Fab: Solidstate Chiller	employee	Existing	64.34	15	\$38.75	15%	75%	\$0.05	1.53	1.58	7th Power Plan
Electronic Equipment Mfg	Process	Elec Chip Fab: Eliminate Exhaust	employee	Existing	13.56	15	\$2.97	15%	75%	\$0.02	0.32	0.33	7th Power Plan
Electronic Equipment Mfg	Process	Elec Chip Fab: Exhaust Injector	employee	Existing	26.95	15	\$14.33	15%	75%	\$0.04	0.64	0.66	7th Power Plan
Electronic Equipment Mfg	Process	Elec Chip Fab: Reduce Gas Pressure	employee	Existing	27.68	15	\$0.29	15%	75%	\$0.00	0.66	0.67	7th Power Plan
Electronic Equipment Mfg	Motors	Panel: Hydraulic Press	employee	Existing	507.20	10	\$122.70	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Motors	Wood: Replace Pneumatic Conveyor	employee	Existing	557.38	10	\$9.19	0%	0%	\$0.00	0.00	0.00	7th Power Plan

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Electronic Equipment Mfg	Process	Metal: New Arc Furnace	employee	Existing	699.33	10	\$75.76	0%	0%	-\$0.20	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Process	Paper: Premium Control Large Material	employee	Existing	170.13	10	\$89.58	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Process	Paper: Efficient Pulp Screen	employee	Existing	138.78	10	\$29.51	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Process	Kraft: Effluent Treatment System	employee	Existing	139.90	10	\$12.10	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Motors	Kraft: Efficient Agitator	employee	Existing	922.83	10	\$91.56	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Process	Mech Pulp: Premium Process	employee	Existing	1.53	5	\$0.21	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Motors	Mech Pulp: Refiner Plate Improvement	employee	Existing	7.75	1	\$0.35	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Cooling	Transformer - High Efficiency	employee	Existing	47.02	10	\$50.57	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Heating	Transformer - High Efficiency	employee	Existing	208.91	10	\$50.57	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Ventilation	Transformer - High Efficiency	employee	Existing	5.89	10	\$50.57	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Interior Lighting	Transformer - High Efficiency	employee	Existing	14.62	10	\$50.57	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Exterior Lighting	Transformer - High Efficiency	employee	Existing	3.16	10	\$50.57	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Motors	Transformer - High Efficiency	employee	Existing	41.84	10	\$50.57	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Process	Transformer - High Efficiency	employee	Existing	68.13	10	\$50.57	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Miscellaneous	Transformer - High Efficiency	employee	Existing	29.15	10	\$50.57	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Cooling	Strategic Energy Management	employee	Existing	128.97	3	\$310.56	0%	5%	\$0.08	0.04	0.05	AEG Research
Electronic Equipment Mfg	Heating	Strategic Energy Management	employee	Existing	597.26	3	\$310.56	0%	5%	\$0.08	0.22	0.23	AEG Research
Electronic Equipment Mfg	Ventilation	Strategic Energy Management	employee	Existing	16.86	3	\$310.56	0%	5%	\$0.08	0.03	0.04	AEG Research
Electronic Equipment Mfg	Interior Lighting	Strategic Energy Management	employee	Existing	41.62	3	\$310.56	0%	5%	\$0.08	0.06	0.09	AEG Research

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Electronic Equipment Mfg	Exterior Lighting	Strategic Energy Management	employee	Existing	9.05	3	\$310.56	0%	5%	\$0.08	0.01	0.02	AEG Research
Electronic Equipment Mfg	Motors	Strategic Energy Management	employee	Existing	119.69	3	\$310.56	0%	5%	\$0.08	0.21	0.23	AEG Research
Electronic Equipment Mfg	Process	Strategic Energy Management	employee	Existing	194.89	3	\$310.56	0%	5%	\$0.08	0.35	0.36	AEG Research
Electronic Equipment Mfg	Miscellaneous	Strategic Energy Management	employee	Existing	83.28	3	\$310.56	0%	5%	\$0.08	0.19	0.15	AEG Research
Electronic Equipment Mfg	Interior Lighting	Commissioning	employee	Existing	47.97	3	\$221.07	0%	0%	\$0.13	0.00	0.00	AEG Research
Electronic Equipment Mfg	Exterior Lighting	Commissioning	employee	Existing	10.43	3	\$221.07	0%	0%	\$0.13	0.00	0.00	AEG Research
Electronic Equipment Mfg	Motors	Commissioning	employee	Existing	137.93	3	\$221.07	0%	0%	\$0.13	0.00	0.00	AEG Research
Electronic Equipment Mfg	Process	Commissioning	employee	Existing	224.59	3	\$221.07	0%	0%	\$0.13	0.00	0.00	AEG Research
Electronic Equipment Mfg	Miscellaneous	Commissioning	employee	Existing	95.96	3	\$221.07	0%	0%	\$0.13	0.00	0.00	AEG Research
Electronic Equipment Mfg	Interior Lighting	Retrocommissioning	employee	Existing	48.74	3	\$140.34	5%	39%	\$0.08	0.49	0.70	AEG Research
Electronic Equipment Mfg	Exterior Lighting	Retrocommissioning	employee	Existing	10.53	3	\$140.34	5%	39%	\$0.08	0.11	0.16	AEG Research
Electronic Equipment Mfg	Motors	Retrocommissioning	employee	Existing	139.46	3	\$140.34	5%	39%	\$0.08	1.70	1.79	AEG Research
Electronic Equipment Mfg	Process	Retrocommissioning	employee	Existing	227.11	3	\$140.34	5%	39%	\$0.08	2.81	2.88	AEG Research
Electronic Equipment Mfg	Miscellaneous	Retrocommissioning	employee	Existing	97.15	3	\$140.34	5%	39%	\$0.08	1.55	1.20	AEG Research
Electronic Equipment Mfg	Motors	Municipal Sewage Treatment	employee	Existing	5.22	12	\$3.03	0%	0%	\$0.06	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Motors	Municipal Water Supply Treatment	employee	Existing	0.00	12	\$0.00	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Cooling	Insulation - Ceiling	sqft	New	0.11	45	\$1.28	15%	25%	\$0.16	0.05	0.06	Building Energy Simulation Tool
Electronic Equipment Mfg	Heating	Insulation - Ceiling	sqft	New	0.52	45	\$1.28	15%	25%	\$0.16	0.27	0.27	Building Energy Simulation Tool
Electronic Equipment Mfg	Ventilation	Insulation - Ceiling	sqft	New	0.01	45	\$1.28	15%	25%	\$0.16	0.03	0.04	Building Energy Simulation Tool

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Electronic Equipment Mfg	Cooling	Insulation - Ducting	sqft	New	0.04	20	\$0.84	15%	25%	\$1.11	0.02	0.02	Building Energy Simulation Tool
Electronic Equipment Mfg	Heating	Insulation - Ducting	sqft	New	0.02	20	\$0.84	15%	25%	\$1.11	0.01	0.01	Building Energy Simulation Tool
Electronic Equipment Mfg	Ventilation	Insulation - Ducting	sqft	New	0.00	20	\$0.84	15%	25%	\$1.11	0.00	0.00	Building Energy Simulation Tool
Electronic Equipment Mfg	Cooling	Insulation - Wall Cavity	sqft	New	0.00	45	\$0.15	45%	50%	\$0.02	0.00	0.00	Building Energy Simulation Tool
Electronic Equipment Mfg	Heating	Insulation - Wall Cavity	sqft	New	0.71	45	\$0.15	45%	50%	\$0.02	0.18	0.18	Building Energy Simulation Tool
Electronic Equipment Mfg	Ventilation	Insulation - Wall Cavity	sqft	New	0.01	45	\$0.15	45%	50%	\$0.02	0.02	0.02	Building Energy Simulation Tool
Electronic Equipment Mfg	Cooling	HVAC - Duct Repair and Sealing	sqft	New	0.01	18	\$0.00	15%	25%	\$0.00	0.01	0.01	Building Energy Simulation Tool
Electronic Equipment Mfg	Heating	HVAC - Duct Repair and Sealing	sqft	New	0.05	18	\$0.00	15%	25%	\$0.00	0.02	0.02	Building Energy Simulation Tool
Electronic Equipment Mfg	Ventilation	HVAC - Duct Repair and Sealing	sqft	New	0.00	18	\$0.00	15%	25%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Electronic Equipment Mfg	Cooling	Chiller - Chilled Water Reset	sqft	New	0.04	10	\$0.01	15%	45%	\$0.03	0.01	0.01	AEG-BEST
Electronic Equipment Mfg	Cooling	Chiller - Chilled Water Variable-Flow System	sqft	New	0.21	15	\$0.50	15%	60%	\$0.24	0.08	0.09	AEG-BEST
Electronic Equipment Mfg	Cooling	Chiller - Variable Speed Fans	sqft	New	0.08	15	\$0.03	15%	75%	\$0.04	0.04	0.04	New Jersey TRM
Electronic Equipment Mfg	Cooling	HVAC - Economizer	sqft	New	0.18	10	\$0.25	18%	30%	\$0.17	0.04	0.04	AEG-BEST
Electronic Equipment Mfg	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.25	15%	35%	\$12.47	0.01	0.01	7th Power Plan
Electronic Equipment Mfg	Cooling	Destratification Fans (HVLS)	sqft	New	0.14	15	\$0.63	15%	50%	\$0.05	0.17	0.17	AEG Research
Electronic Equipment Mfg	Heating	Destratification Fans (HVLS)	sqft	New	1.30	15	\$0.63	15%	50%	\$0.05	1.62	1.62	AEG Research
Electronic Equipment Mfg	Cooling	RTU - Maintenance	sqft	New	0.08	3	\$0.07	15%	75%	\$0.28	0.03	0.03	AEG Research
Electronic Equipment Mfg	Cooling	Thermostat - WiFi/Interactive	sqft	New	0.26	5	\$0.66	5%	15%	\$0.09	0.02	0.02	7th Power Plan
Electronic Equipment Mfg	Heating	Thermostat - WiFi/Interactive	sqft	New	1.22	5	\$0.66	5%	15%	\$0.09	0.08	0.08	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Electronic Equipment Mfg	Ventilation	Thermostat - WiFi/Interactive	sqft	New	0.03	5	\$0.66	5%	15%	\$0.09	0.01	0.01	7th Power Plan
Electronic Equipment Mfg	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.36	15	\$0.35	22%	41%	\$0.07	0.58	0.71	7th Power Plan
Electronic Equipment Mfg	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.49	15	\$0.58	22%	41%	\$0.09	0.79	0.98	7th Power Plan
Electronic Equipment Mfg	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	New	0.02	15	\$0.00	1%	2%	\$0.01	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Interior Lighting	Interior Lighting - Timeclocks and Timers	sqft	New	0.00	8	\$0.00	7%	7%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Electronic Equipment Mfg	Interior Lighting	Interior Lighting - Skylights	sqft	New	0.00	15	\$1.01	18%	24%	\$0.00	0.00	0.00	AEG Research
Electronic Equipment Mfg	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	sqft	New	0.03	16	\$1.81	5%	40%	\$4.03	0.06	0.08	7th Power Plan
Electronic Equipment Mfg	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	New	0.03	11	\$0.00	15%	50%	\$0.01	0.06	0.07	Illinois TRM
Electronic Equipment Mfg	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	sqft	New	0.04	8	\$0.03	15%	25%	\$0.08	0.05	0.08	7th Power Plan
Electronic Equipment Mfg	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	New	0.02	8	\$0.02	44%	60%	\$0.08	0.04	0.07	Pacific Gas and Electric Research
Electronic Equipment Mfg	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	New	0.03	7	\$1.19	15%	30%	\$4.40	0.05	0.07	AEG Research
Electronic Equipment Mfg	Process	Process - Conductivity Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Process	Process - Timers and Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Motors	Process - Timers and Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Process	Refrigeration - Floating Head Pressure	employee	New	54.35	15	\$38.33	20%	50%	\$0.08	0.15	0.15	RTF Workbook
Electronic Equipment Mfg	Process	Refrigeration - System Optimization	employee	New	88.08	15	\$13.40	20%	50%	\$0.02	0.24	0.24	AEG Research
Electronic Equipment Mfg	Motors	Pumping System - Equipment Upgrade	employee	New	41.53	10	\$6.04	9%	38%	\$0.02	0.09	0.09	7th Power Plan
Electronic Equipment Mfg	Motors	Pumping System - System Optimization	employee	New	30.97	12	\$9.20	9%	38%	\$0.03	0.09	0.09	UNIDO Study on Industrial Energy Efficiency
Electronic Equipment Mfg	Motors	Pumping System - Variable Speed Drive	employee	New	30.78	10	\$9.57	9%	38%	\$0.04	0.08	0.08	UNIDO Study on Industrial Energy Efficiency

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Electronic Equipment Mfg	Motors	Fan System - Equipment Upgrade	employee	New	36.67	10	\$3.64	9%	38%	\$0.02	0.09	0.09	UNIDO Study on Industrial Energy Efficiency
Electronic Equipment Mfg	Motors	Fan System - Flow Optimization	employee	New	43.27	10	\$6.03	9%	38%	\$0.02	0.11	0.11	UNIDO Study on Industrial Energy Efficiency
Electronic Equipment Mfg	Motors	Fan System - Variable Speed Drive	employee	New	64.65	10	\$30.33	9%	38%	\$0.06	0.17	0.17	UNIDO Study on Industrial Energy Efficiency
Electronic Equipment Mfg	Motors	Compressed Air - Equipment Upgrade	employee	New	215.16	10	\$15.66	17%	50%	\$0.01	0.53	0.53	7th Power Plan
Electronic Equipment Mfg	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	New	0.00	15	\$0.00	16%	38%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Electronic Equipment Mfg	Motors	Compressed Air - Refrigerated Cycling Dryers	employee	New	0.00	10	\$0.00	16%	30%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Electronic Equipment Mfg	Motors	Compressed Air - System Controls	employee	New	47.75	10	\$11.19	9%	38%	\$0.03	0.10	0.10	UNIDO Study on Industrial Energy Efficiency
Electronic Equipment Mfg	Motors	Compressed Air - Leak Management Program	employee	New	121.77	10	\$11.25	18%	75%	\$0.02	0.52	0.52	7th Power Plan
Electronic Equipment Mfg	Motors	Compressed Air - Variable Speed Drive	employee	New	88.08	15	\$68.63	26%	45%	\$0.08	0.15	0.15	UNIDO Study on Industrial Energy Efficiency
Electronic Equipment Mfg	Motors	Compressed Air - Low Pressure-Drop Filters	employee	New	2.94	10	\$1.06	17%	50%	\$0.05	0.01	0.01	Illinois TRM
Electronic Equipment Mfg	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	New	17.95	10	\$3.43	17%	50%	\$0.03	0.04	0.04	UNIDO Study on Industrial Energy Efficiency
Electronic Equipment Mfg	Motors	Compressed Air - Outside Air Intake	employee	New	0.00	20	\$0.00	17%	50%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Electronic Equipment Mfg	Motors	Compressed Air - Receiver Capacity Addition	employee	New	17.84	15	\$9.44	17%	50%	\$0.06	0.05	0.05	UNIDO Study on Industrial Energy Efficiency
Electronic Equipment Mfg	Motors	Material Handling - Variable Speed Drive	employee	New	347.36	10	\$122.77	25%	45%	\$0.05	0.63	0.63	7th Power Plan
Electronic Equipment Mfg	Motors	Motors - Green Rewind (<100 HP)	employee	New	6.62	10	\$2.84	10%	50%	\$0.06	0.10	0.10	7th Power Plan
Electronic Equipment Mfg	Motors	Motors - Green Rewind (100 HP+)	employee	New	3.74	10	\$1.01	6%	25%	\$0.04	0.03	0.03	7th Power Plan
Electronic Equipment Mfg	Motors	Switch from Belt Drive to Direct Drive	employee	New	56.54	12	\$12.49	16%	25%	\$0.03	0.22	0.22	2015-mdu-irp-report---volume-iii.pdf
Electronic Equipment Mfg	Motors	Motors - Synchronous Belts	employee	New	14.97	10	\$3.76	16%	36%	\$0.03	0.09	0.09	7th Power Plan
Electronic Equipment Mfg	Miscellaneous	Agriculture - Engine Block Timer	employee	New	770.06	3	\$9.50	0%	0%	\$0.00	0.00	0.00	Vermont TRM

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Electronic Equipment Mfg	Motors	Agriculture - Live Stock Waterer	employee	New	100.74	10	\$53.16	0%	0%	\$0.07	0.00	0.00	Ontario Power TRM
Electronic Equipment Mfg	Process	Dairy - Milk Precoolers	employee	New	364.34	15	\$172.61	0%	0%	\$0.05	0.00	0.00	Ontario Power TRM
Electronic Equipment Mfg	Process	Clean Room: Change Filter Strategy	employee	New	111.76	15	\$0.83	15%	75%	\$0.00	0.72	0.72	7th Power Plan
Electronic Equipment Mfg	Process	Clean Room: Chiller Optimize	employee	New	109.50	15	\$10.22	15%	75%	\$0.01	0.71	0.71	7th Power Plan
Electronic Equipment Mfg	Process	Clean Room: Clean Room HVAC	employee	New	65.89	15	\$12.34	15%	75%	\$0.02	0.43	0.43	7th Power Plan
Electronic Equipment Mfg	Process	Elec Chip Fab: Solidstate Chiller	employee	New	65.48	15	\$38.75	15%	75%	\$0.05	0.36	0.36	7th Power Plan
Electronic Equipment Mfg	Process	Elec Chip Fab: Eliminate Exhaust	employee	New	13.70	15	\$2.97	15%	75%	\$0.02	0.08	0.08	7th Power Plan
Electronic Equipment Mfg	Process	Elec Chip Fab: Exhaust Injector	employee	New	27.38	15	\$14.33	15%	75%	\$0.04	0.15	0.15	7th Power Plan
Electronic Equipment Mfg	Process	Elec Chip Fab: Reduce Gas Pressure	employee	New	27.99	15	\$0.29	15%	75%	\$0.00	0.00	0.15	7th Power Plan
Electronic Equipment Mfg	Motors	Panel: Hydraulic Press	employee	New	522.55	10	\$122.70	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Motors	Wood: Replace Pneumatic Conveyor	employee	New	557.38	10	\$9.19	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Process	Metal: New Arc Furnace	employee	New	706.69	10	\$75.76	0%	0%	-\$0.20	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Process	Paper: Premium Control Large Material	employee	New	173.99	10	\$89.58	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Process	Paper: Efficient Pulp Screen	employee	New	140.34	10	\$29.51	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Process	Kraft: Effluent Treatment System	employee	New	141.00	10	\$12.10	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Motors	Kraft: Efficient Agitator	employee	New	942.74	10	\$91.56	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Process	Mech Pulp: Premium Process	employee	New	1.56	5	\$0.21	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Motors	Mech Pulp: Refiner Plate Improvement	employee	New	8.14	1	\$0.35	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Cooling	Transformer - High Efficiency	employee	New	43.10	10	\$48.44	15%	15%	\$0.02	0.00	0.00	7th Power Plan

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Electronic Equipment Mfg	Heating	Transformer - High Efficiency	employee	New	201.36	10	\$48.44	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Ventilation	Transformer - High Efficiency	employee	New	4.15	10	\$48.44	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Interior Lighting	Transformer - High Efficiency	employee	New	13.35	10	\$48.44	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Exterior Lighting	Transformer - High Efficiency	employee	New	2.96	10	\$48.44	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Motors	Transformer - High Efficiency	employee	New	43.96	10	\$48.44	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Process	Transformer - High Efficiency	employee	New	69.68	10	\$48.44	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Miscellaneous	Transformer - High Efficiency	employee	New	27.61	10	\$48.44	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Cooling	Strategic Energy Management	employee	New	122.05	3	\$297.50	0%	5%	\$0.08	0.00	0.00	AEG Research
Electronic Equipment Mfg	Heating	Strategic Energy Management	employee	New	579.68	3	\$297.50	0%	5%	\$0.08	0.00	0.01	AEG Research
Electronic Equipment Mfg	Ventilation	Strategic Energy Management	employee	New	11.93	3	\$297.50	0%	5%	\$0.08	0.00	0.00	AEG Research
Electronic Equipment Mfg	Interior Lighting	Strategic Energy Management	employee	New	38.43	3	\$297.50	0%	5%	\$0.08	0.00	0.00	AEG Research
Electronic Equipment Mfg	Exterior Lighting	Strategic Energy Management	employee	New	8.55	3	\$297.50	0%	5%	\$0.08	0.00	0.00	AEG Research
Electronic Equipment Mfg	Motors	Strategic Energy Management	employee	New	126.99	3	\$297.50	0%	5%	\$0.08	0.01	0.01	AEG Research
Electronic Equipment Mfg	Process	Strategic Energy Management	employee	New	201.30	3	\$297.50	0%	5%	\$0.08	0.01	0.01	AEG Research
Electronic Equipment Mfg	Miscellaneous	Strategic Energy Management	employee	New	79.75	3	\$297.50	0%	5%	\$0.08	0.00	0.00	AEG Research
Electronic Equipment Mfg	Interior Lighting	Commissioning	employee	New	44.33	3	\$224.03	5%	39%	\$0.14	0.01	0.02	AEG Research
Electronic Equipment Mfg	Exterior Lighting	Commissioning	employee	New	9.86	3	\$224.03	5%	39%	\$0.14	0.00	0.00	AEG Research
Electronic Equipment Mfg	Motors	Commissioning	employee	New	146.49	3	\$224.03	5%	39%	\$0.14	0.04	0.04	AEG Research
Electronic Equipment Mfg	Process	Commissioning	employee	New	232.21	3	\$224.03	5%	39%	\$0.14	0.07	0.07	AEG Research

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Electronic Equipment Mfg	Miscellaneous	Commissioning	employee	New	92.00	3	\$224.03	5%	39%	\$0.14	0.03	0.02	AEG Research
Electronic Equipment Mfg	Interior Lighting	Retrocommissioning	employee	New	44.49	3	\$142.22	0%	0%	\$0.09	0.00	0.00	AEG Research
Electronic Equipment Mfg	Exterior Lighting	Retrocommissioning	employee	New	9.86	3	\$142.22	0%	0%	\$0.09	0.00	0.00	AEG Research
Electronic Equipment Mfg	Motors	Retrocommissioning	employee	New	146.53	3	\$142.22	0%	0%	\$0.09	0.00	0.00	AEG Research
Electronic Equipment Mfg	Process	Retrocommissioning	employee	New	232.27	3	\$142.22	0%	0%	\$0.09	0.00	0.00	AEG Research
Electronic Equipment Mfg	Miscellaneous	Retrocommissioning	employee	New	92.02	3	\$142.22	0%	0%	\$0.09	0.00	0.00	AEG Research
Electronic Equipment Mfg	Motors	Municipal Sewage Treatment	employee	New	5.47	12	\$3.03	0%	0%	\$0.06	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Motors	Municipal Water Supply Treatment	employee	New	0.00	12	\$0.00	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Industrial Machinery	Cooling	Insulation - Ceiling	sqft	Existing	0.12	45	\$1.28	15%	25%	\$0.14	0.71	0.76	Building Energy Simulation Tool
Industrial Machinery	Heating	Insulation - Ceiling	sqft	Existing	0.54	45	\$1.28	15%	25%	\$0.14	3.43	3.54	Building Energy Simulation Tool
Industrial Machinery	Ventilation	Insulation - Ceiling	sqft	Existing	0.02	45	\$1.28	15%	25%	\$0.14	0.48	0.57	Building Energy Simulation Tool
Industrial Machinery	Cooling	Insulation - Ducting	sqft	Existing	0.05	20	\$0.84	15%	25%	\$1.04	0.25	0.28	Building Energy Simulation Tool
Industrial Machinery	Heating	Insulation - Ducting	sqft	Existing	0.02	20	\$0.84	15%	25%	\$1.04	0.14	0.15	Building Energy Simulation Tool
Industrial Machinery	Ventilation	Insulation - Ducting	sqft	Existing	0.00	20	\$0.84	15%	25%	\$1.04	0.02	0.02	Building Energy Simulation Tool
Industrial Machinery	Cooling	Insulation - Wall Cavity	sqft	Existing	0.00	45	\$0.15	45%	50%	\$0.02	0.01	0.01	Building Energy Simulation Tool
Industrial Machinery	Heating	Insulation - Wall Cavity	sqft	Existing	0.76	45	\$0.15	45%	50%	\$0.02	2.47	2.48	Building Energy Simulation Tool
Industrial Machinery	Ventilation	Insulation - Wall Cavity	sqft	Existing	0.02	45	\$0.15	45%	50%	\$0.02	0.32	0.38	Building Energy Simulation Tool
Industrial Machinery	Cooling	HVAC - Duct Repair and Sealing	sqft	Existing	0.02	18	\$0.00	15%	25%	\$0.00	0.09	0.10	Building Energy Simulation Tool
Industrial Machinery	Heating	HVAC - Duct Repair and Sealing	sqft	Existing	0.05	18	\$0.00	15%	25%	\$0.00	0.35	0.35	Building Energy Simulation Tool

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Industrial Machinery	Ventilation	HVAC - Duct Repair and Sealing	sqft	Existing	0.00	18	\$0.00	15%	25%	\$0.00	0.05	0.05	Building Energy Simulation Tool
Industrial Machinery	Cooling	Chiller - Chilled Water Reset	sqft	Existing	0.05	10	\$0.01	15%	45%	\$0.03	0.23	0.25	AEG-BEST
Industrial Machinery	Cooling	Chiller - Chilled Water Variable-Flow System	sqft	Existing	0.25	15	\$0.50	15%	60%	\$0.20	1.83	2.06	AEG-BEST
Industrial Machinery	Cooling	Chiller - Variable Speed Fans	sqft	Existing	0.09	15	\$0.03	15%	75%	\$0.03	0.94	1.02	New Jersey TRM
Industrial Machinery	Cooling	HVAC - Economizer	sqft	Existing	0.08	10	\$0.25	18%	30%	\$0.38	0.90	1.01	AEG-BEST
Industrial Machinery	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.25	15%	35%	\$10.43	0.14	0.18	7th Power Plan
Industrial Machinery	Cooling	Destratification Fans (HVLS)	sqft	Existing	0.16	15	\$0.63	15%	50%	\$0.04	3.48	3.78	AEG Research
Industrial Machinery	Heating	Destratification Fans (HVLS)	sqft	Existing	1.39	15	\$0.63	15%	50%	\$0.04	33.95	34.24	AEG Research
Industrial Machinery	Cooling	RTU - Maintenance	sqft	Existing	0.08	3	\$0.07	15%	75%	\$0.27	1.71	1.98	AEG Research
Industrial Machinery	Cooling	Thermostat - WiFi/Interactive	sqft	Existing	0.28	5	\$0.66	5%	15%	\$0.09	1.61	1.75	7th Power Plan
Industrial Machinery	Heating	Thermostat - WiFi/Interactive	sqft	Existing	1.27	5	\$0.66	5%	15%	\$0.09	8.05	8.34	7th Power Plan
Industrial Machinery	Ventilation	Thermostat - WiFi/Interactive	sqft	Existing	0.04	5	\$0.66	5%	15%	\$0.09	1.13	1.35	7th Power Plan
Industrial Machinery	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.17	15	\$0.35	7%	33%	\$0.17	11.47	14.49	7th Power Plan
Industrial Machinery	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.23	15	\$0.58	7%	33%	\$0.20	15.22	19.83	7th Power Plan
Industrial Machinery	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	Existing	0.02	15	\$0.00	1%	2%	\$0.01	0.06	0.08	7th Power Plan
Industrial Machinery	Interior Lighting	Interior Lighting - Timers and Timers	sqft	Existing	0.00	8	\$0.00	7%	7%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Industrial Machinery	Interior Lighting	Interior Lighting - Skylights	sqft	Existing	0.00	15	\$1.01	15%	23%	\$0.00	0.00	0.00	AEG Research
Industrial Machinery	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	sqft	Existing	0.03	16	\$1.81	5%	40%	\$4.03	1.68	2.72	7th Power Plan
Industrial Machinery	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	Existing	0.04	11	\$0.00	15%	50%	\$0.01	1.92	2.74	Illinois TRM

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Industrial Machinery	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	sqft	Existing	0.05	8	\$0.03	15%	25%	\$0.08	2.31	3.56	7th Power Plan
Industrial Machinery	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	Existing	0.03	8	\$0.02	33%	60%	\$0.08	3.20	5.08	Pacific Gas and Electric Research
Industrial Machinery	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	Existing	0.03	7	\$1.19	15%	30%	\$4.46	2.00	3.36	AEG Research
Industrial Machinery	Process	Process - Conductivity Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Industrial Machinery	Process	Process - Timers and Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Industrial Machinery	Motors	Process - Timers and Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Industrial Machinery	Process	Refrigeration - Floating Head Pressure	employee	Existing	15.29	15	\$14.89	20%	50%	\$0.11	0.96	0.96	RTF Workbook
Industrial Machinery	Process	Refrigeration - System Optimization	employee	Existing	24.54	15	\$10.49	20%	50%	\$0.05	1.55	1.55	AEG Research
Industrial Machinery	Motors	Pumping System - Equipment Upgrade	employee	Existing	148.04	10	\$22.38	9%	38%	\$0.02	8.78	9.20	7th Power Plan
Industrial Machinery	Motors	Pumping System - System Optimization	employee	Existing	109.57	12	\$34.11	9%	38%	\$0.03	6.30	6.60	UNIDO Study on Industrial Energy Efficiency
Industrial Machinery	Motors	Pumping System - Variable Speed Drive	employee	Existing	107.98	10	\$35.49	9%	38%	\$0.04	6.18	6.54	UNIDO Study on Industrial Energy Efficiency
Industrial Machinery	Motors	Fan System - Equipment Upgrade	employee	Existing	192.26	10	\$19.65	9%	38%	\$0.02	11.17	11.47	UNIDO Study on Industrial Energy Efficiency
Industrial Machinery	Motors	Fan System - Flow Optimization	employee	Existing	225.71	10	\$32.51	9%	38%	\$0.02	13.08	13.50	UNIDO Study on Industrial Energy Efficiency
Industrial Machinery	Motors	Fan System - Variable Speed Drive	employee	Existing	327.30	10	\$163.57	9%	38%	\$0.06	18.58	19.99	UNIDO Study on Industrial Energy Efficiency
Industrial Machinery	Motors	Compressed Air - Equipment Upgrade	employee	Existing	546.23	10	\$39.75	17%	50%	\$0.01	38.46	38.46	7th Power Plan
Industrial Machinery	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	Existing	0.00	15	\$0.00	16%	38%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Industrial Machinery	Motors	Compressed Air - Refrigerated Cycling Dryers	employee	Existing	0.00	10	\$0.00	16%	30%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Industrial Machinery	Motors	Compressed Air - System Controls	employee	Existing	115.36	10	\$28.42	9%	38%	\$0.03	6.80	7.24	UNIDO Study on Industrial Energy Efficiency
Industrial Machinery	Motors	Compressed Air - Leak Management Program	employee	Existing	304.73	10	\$28.57	18%	75%	\$0.01	36.56	37.19	7th Power Plan

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Industrial Machinery	Motors	Compressed Air - Variable Speed Drive	employee	Existing	210.81	15	\$174.24	26%	45%	\$0.08	8.21	8.93	UNIDO Study on Industrial Energy Efficiency
Industrial Machinery	Motors	Compressed Air - Low Pressure-Drop Filters	employee	Existing	7.03	10	\$2.69	17%	50%	\$0.05	0.48	0.52	Illinois TRM
Industrial Machinery	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	Existing	43.52	10	\$8.71	17%	50%	\$0.03	3.00	3.17	UNIDO Study on Industrial Energy Efficiency
Industrial Machinery	Motors	Compressed Air - Outside Air Intake	employee	Existing	0.00	20	\$0.00	17%	50%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Industrial Machinery	Motors	Compressed Air - Receiver Capacity Addition	employee	Existing	42.91	15	\$23.96	17%	50%	\$0.06	2.95	3.15	UNIDO Study on Industrial Energy Efficiency
Industrial Machinery	Motors	Material Handling - Variable Speed Drive	employee	Existing	430.88	10	\$161.40	25%	45%	\$0.05	17.29	18.34	7th Power Plan
Industrial Machinery	Motors	Motors - Green Rewind (<100 HP)	employee	Existing	13.51	10	\$6.18	10%	50%	\$0.06	4.31	4.63	7th Power Plan
Industrial Machinery	Motors	Motors - Green Rewind (100 HP+)	employee	Existing	7.67	10	\$2.19	6%	25%	\$0.04	1.17	1.24	7th Power Plan
Industrial Machinery	Motors	Switch from Belt Drive to Direct Drive	employee	Existing	117.53	12	\$27.12	16%	25%	\$0.03	9.04	9.42	2015-mdu-irp-report---volume-iii.pdf
Industrial Machinery	Motors	Motors - Synchronous Belts	employee	Existing	30.85	10	\$8.16	16%	36%	\$0.03	5.09	5.43	7th Power Plan
Industrial Machinery	Miscellaneous	Agriculture - Engine Block Timer	employee	Existing	666.79	3	\$8.23	0%	0%	\$0.00	0.00	0.00	Vermont TRM
Industrial Machinery	Motors	Agriculture - Live Stock Waterer	employee	Existing	347.44	10	\$197.13	0%	0%	\$0.07	0.00	0.00	Ontario Power TRM
Industrial Machinery	Process	Dairy - Milk Precoolers	employee	Existing	101.93	15	\$47.40	0%	0%	\$0.05	0.00	0.00	Ontario Power TRM
Industrial Machinery	Process	Clean Room: Change Filter Strategy	employee	Existing	55.41	15	\$0.41	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Industrial Machinery	Process	Clean Room: Chiller Optimize	employee	Existing	30.31	15	\$2.81	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Industrial Machinery	Process	Clean Room: Clean Room HVAC	employee	Existing	18.40	15	\$3.39	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Industrial Machinery	Process	Elec Chip Fab: Solidstate Chiller	employee	Existing	18.35	15	\$10.64	0%	0%	\$0.06	0.00	0.00	7th Power Plan
Industrial Machinery	Process	Elec Chip Fab: Eliminate Exhaust	employee	Existing	6.93	15	\$1.47	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Industrial Machinery	Process	Elec Chip Fab: Exhaust Injector	employee	Existing	13.81	15	\$7.09	0%	0%	\$0.05	0.00	0.00	7th Power Plan

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Industrial Machinery	Process	Elec Chip Fab: Reduce Gas Pressure	employee	Existing	13.85	15	\$0.14	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Industrial Machinery	Motors	Panel: Hydraulic Press	employee	Existing	650.71	10	\$161.30	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Industrial Machinery	Motors	Wood: Replace Pneumatic Conveyor	employee	Existing	732.75	10	\$12.08	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Industrial Machinery	Process	Metal: New Arc Furnace	employee	Existing	469.75	10	\$49.31	0%	0%	-\$0.09	0.00	0.00	7th Power Plan
Industrial Machinery	Process	Paper: Premium Control Large Material	employee	Existing	76.66	10	\$38.54	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Industrial Machinery	Process	Paper: Efficient Pulp Screen	employee	Existing	61.71	10	\$12.70	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Industrial Machinery	Process	Kraft: Effluent Treatment System	employee	Existing	61.71	10	\$5.21	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Industrial Machinery	Motors	Kraft: Efficient Agitator	employee	Existing	1,204.81	10	\$120.37	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Industrial Machinery	Process	Mech Pulp: Premium Process	employee	Existing	0.69	5	\$0.09	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Industrial Machinery	Motors	Mech Pulp: Refiner Plate Improvement	employee	Existing	9.95	1	\$0.46	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Industrial Machinery	Cooling	Transformer - High Efficiency	employee	Existing	40.08	10	\$47.83	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Industrial Machinery	Heating	Transformer - High Efficiency	employee	Existing	178.06	10	\$47.83	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Industrial Machinery	Ventilation	Transformer - High Efficiency	employee	Existing	5.02	10	\$47.83	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Industrial Machinery	Interior Lighting	Transformer - High Efficiency	employee	Existing	19.22	10	\$47.83	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Industrial Machinery	Exterior Lighting	Transformer - High Efficiency	employee	Existing	4.02	10	\$47.83	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Industrial Machinery	Motors	Transformer - High Efficiency	employee	Existing	88.78	10	\$47.83	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Industrial Machinery	Process	Transformer - High Efficiency	employee	Existing	30.70	10	\$47.83	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Industrial Machinery	Miscellaneous	Transformer - High Efficiency	employee	Existing	25.24	10	\$47.83	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Industrial Machinery	Cooling	Strategic Energy Management	employee	Existing	109.93	3	\$293.73	0%	5%	\$0.08	0.19	0.21	AEG Research

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Industrial Machinery	Heating	Strategic Energy Management	employee	Existing	509.08	3	\$293.73	0%	5%	\$0.08	0.97	1.02	AEG Research
Industrial Machinery	Ventilation	Strategic Energy Management	employee	Existing	14.37	3	\$293.73	0%	5%	\$0.08	0.14	0.17	AEG Research
Industrial Machinery	Interior Lighting	Strategic Energy Management	employee	Existing	52.93	3	\$293.73	0%	5%	\$0.08	0.41	0.59	AEG Research
Industrial Machinery	Exterior Lighting	Strategic Energy Management	employee	Existing	11.51	3	\$293.73	0%	5%	\$0.08	0.09	0.13	AEG Research
Industrial Machinery	Motors	Strategic Energy Management	employee	Existing	254.00	3	\$293.73	0%	5%	\$0.08	2.37	2.55	AEG Research
Industrial Machinery	Process	Strategic Energy Management	employee	Existing	87.81	3	\$293.73	0%	5%	\$0.08	0.85	0.86	AEG Research
Industrial Machinery	Miscellaneous	Strategic Energy Management	employee	Existing	72.11	3	\$293.73	0%	5%	\$0.08	0.89	0.69	AEG Research
Industrial Machinery	Interior Lighting	Commissioning	employee	Existing	61.01	3	\$252.42	0%	0%	\$0.14	0.00	0.00	AEG Research
Industrial Machinery	Exterior Lighting	Commissioning	employee	Existing	13.26	3	\$252.42	0%	0%	\$0.14	0.00	0.00	AEG Research
Industrial Machinery	Motors	Commissioning	employee	Existing	292.72	3	\$252.42	0%	0%	\$0.14	0.00	0.00	AEG Research
Industrial Machinery	Process	Commissioning	employee	Existing	101.19	3	\$252.42	0%	0%	\$0.14	0.00	0.00	AEG Research
Industrial Machinery	Miscellaneous	Commissioning	employee	Existing	83.09	3	\$252.42	0%	0%	\$0.14	0.00	0.00	AEG Research
Industrial Machinery	Interior Lighting	Retrocommissioning	employee	Existing	62.00	3	\$160.24	5%	39%	\$0.09	3.29	4.70	AEG Research
Industrial Machinery	Exterior Lighting	Retrocommissioning	employee	Existing	13.39	3	\$160.24	5%	39%	\$0.09	0.73	1.05	AEG Research
Industrial Machinery	Motors	Retrocommissioning	employee	Existing	295.94	3	\$160.24	5%	39%	\$0.09	18.89	20.13	AEG Research
Industrial Machinery	Process	Retrocommissioning	employee	Existing	102.34	3	\$160.24	5%	39%	\$0.09	6.79	6.80	AEG Research
Industrial Machinery	Miscellaneous	Retrocommissioning	employee	Existing	84.12	3	\$160.24	5%	39%	\$0.09	7.07	5.50	AEG Research
Industrial Machinery	Motors	Municipal Sewage Treatment	employee	Existing	19.05	12	\$11.25	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Industrial Machinery	Motors	Municipal Water Supply Treatment	employee	Existing	0.00	12	\$0.00	0%	0%	\$0.00	0.00	0.00	7th Power Plan

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Industrial Machinery	Cooling	Insulation - Ceiling	sqft	New	0.11	45	\$1.28	15%	25%	\$0.16	0.24	0.25	Building Energy Simulation Tool
Industrial Machinery	Heating	Insulation - Ceiling	sqft	New	0.52	45	\$1.28	15%	25%	\$0.16	1.20	1.21	Building Energy Simulation Tool
Industrial Machinery	Ventilation	Insulation - Ceiling	sqft	New	0.01	45	\$1.28	15%	25%	\$0.16	0.15	0.16	Building Energy Simulation Tool
Industrial Machinery	Cooling	Insulation - Ducting	sqft	New	0.04	20	\$0.84	15%	25%	\$1.11	0.09	0.10	Building Energy Simulation Tool
Industrial Machinery	Heating	Insulation - Ducting	sqft	New	0.02	20	\$0.84	15%	25%	\$1.11	0.05	0.05	Building Energy Simulation Tool
Industrial Machinery	Ventilation	Insulation - Ducting	sqft	New	0.00	20	\$0.84	15%	25%	\$1.11	0.01	0.01	Building Energy Simulation Tool
Industrial Machinery	Cooling	Insulation - Wall Cavity	sqft	New	0.00	45	\$0.15	45%	50%	\$0.02	0.00	0.00	Building Energy Simulation Tool
Industrial Machinery	Heating	Insulation - Wall Cavity	sqft	New	0.71	45	\$0.15	45%	50%	\$0.02	0.83	0.83	Building Energy Simulation Tool
Industrial Machinery	Ventilation	Insulation - Wall Cavity	sqft	New	0.01	45	\$0.15	45%	50%	\$0.02	0.10	0.11	Building Energy Simulation Tool
Industrial Machinery	Cooling	HVAC - Duct Repair and Sealing	sqft	New	0.01	18	\$0.00	15%	25%	\$0.00	0.03	0.03	Building Energy Simulation Tool
Industrial Machinery	Heating	HVAC - Duct Repair and Sealing	sqft	New	0.05	18	\$0.00	15%	25%	\$0.00	0.11	0.11	Building Energy Simulation Tool
Industrial Machinery	Ventilation	HVAC - Duct Repair and Sealing	sqft	New	0.00	18	\$0.00	15%	25%	\$0.00	0.01	0.01	Building Energy Simulation Tool
Industrial Machinery	Cooling	Chiller - Chilled Water Reset	sqft	New	0.04	10	\$0.01	15%	45%	\$0.03	0.04	0.04	AEG-BEST
Industrial Machinery	Cooling	Chiller - Chilled Water Variable-Flow System	sqft	New	0.21	15	\$0.50	15%	60%	\$0.24	0.37	0.38	AEG-BEST
Industrial Machinery	Cooling	Chiller - Variable Speed Fans	sqft	New	0.08	15	\$0.03	15%	75%	\$0.04	0.18	0.19	New Jersey TRM
Industrial Machinery	Cooling	HVAC - Economizer	sqft	New	0.08	10	\$0.25	18%	30%	\$0.41	0.16	0.17	AEG-BEST
Industrial Machinery	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.25	15%	35%	\$12.47	0.03	0.03	7th Power Plan
Industrial Machinery	Cooling	Destratification Fans (HVLS)	sqft	New	0.14	15	\$0.63	15%	50%	\$0.05	0.75	0.78	AEG Research
Industrial Machinery	Heating	Destratification Fans (HVLS)	sqft	New	1.30	15	\$0.63	15%	50%	\$0.05	7.29	7.32	AEG Research

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Industrial Machinery	Cooling	RTU - Maintenance	sqft	New	0.08	3	\$0.07	15%	75%	\$0.28	0.11	0.13	AEG Research
Industrial Machinery	Cooling	Thermostat - WiFi/Interactive	sqft	New	0.26	5	\$0.66	5%	15%	\$0.09	0.07	0.08	7th Power Plan
Industrial Machinery	Heating	Thermostat - WiFi/Interactive	sqft	New	1.22	5	\$0.66	5%	15%	\$0.09	0.37	0.37	7th Power Plan
Industrial Machinery	Ventilation	Thermostat - WiFi/Interactive	sqft	New	0.03	5	\$0.66	5%	15%	\$0.09	0.04	0.05	7th Power Plan
Industrial Machinery	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.15	15	\$0.35	22%	41%	\$0.17	3.91	4.80	7th Power Plan
Industrial Machinery	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.21	15	\$0.58	22%	41%	\$0.20	5.32	6.60	7th Power Plan
Industrial Machinery	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	New	0.02	15	\$0.00	1%	2%	\$0.01	0.01	0.02	7th Power Plan
Industrial Machinery	Interior Lighting	Interior Lighting - Timeclocks and Timers	sqft	New	0.00	8	\$0.00	7%	7%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Industrial Machinery	Interior Lighting	Interior Lighting - Skylights	sqft	New	0.00	15	\$1.01	18%	24%	\$0.00	0.00	0.00	AEG Research
Industrial Machinery	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	sqft	New	0.03	16	\$1.81	5%	40%	\$4.03	0.42	0.57	7th Power Plan
Industrial Machinery	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	New	0.03	11	\$0.00	15%	50%	\$0.01	0.37	0.50	Illinois TRM
Industrial Machinery	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	sqft	New	0.04	8	\$0.03	15%	25%	\$0.08	0.35	0.53	7th Power Plan
Industrial Machinery	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	New	0.02	8	\$0.02	44%	60%	\$0.08	0.30	0.45	Pacific Gas and Electric Research
Industrial Machinery	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	New	0.03	7	\$1.19	15%	30%	\$4.40	0.30	0.46	AEG Research
Industrial Machinery	Process	Process - Conductivity Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Industrial Machinery	Process	Process - Timers and Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Industrial Machinery	Motors	Process - Timers and Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Industrial Machinery	Process	Refrigeration - Floating Head Pressure	employee	New	15.31	15	\$10.53	20%	50%	\$0.08	0.22	0.22	RTF Workbook
Industrial Machinery	Process	Refrigeration - System Optimization	employee	New	24.54	15	\$3.68	20%	50%	\$0.02	0.35	0.35	AEG Research

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Industrial Machinery	Motors	Pumping System - Equipment Upgrade	employee	New	152.76	10	\$22.38	9%	38%	\$0.02	1.72	1.72	7th Power Plan
Industrial Machinery	Motors	Pumping System - System Optimization	employee	New	113.78	12	\$34.11	9%	38%	\$0.03	1.73	1.73	UNIDO Study on Industrial Energy Efficiency
Industrial Machinery	Motors	Pumping System - Variable Speed Drive	employee	New	112.92	10	\$35.49	9%	38%	\$0.04	1.54	1.54	UNIDO Study on Industrial Energy Efficiency
Industrial Machinery	Motors	Fan System - Equipment Upgrade	employee	New	197.12	10	\$19.65	9%	38%	\$0.02	2.69	2.68	UNIDO Study on Industrial Energy Efficiency
Industrial Machinery	Motors	Fan System - Flow Optimization	employee	New	232.10	10	\$32.51	9%	38%	\$0.02	3.17	3.16	UNIDO Study on Industrial Energy Efficiency
Industrial Machinery	Motors	Fan System - Variable Speed Drive	employee	New	345.86	10	\$163.57	9%	38%	\$0.06	4.73	4.72	UNIDO Study on Industrial Energy Efficiency
Industrial Machinery	Motors	Compressed Air - Equipment Upgrade	employee	New	546.23	10	\$39.75	17%	50%	\$0.01	7.14	7.14	7th Power Plan
Industrial Machinery	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	New	0.00	15	\$0.00	16%	38%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Industrial Machinery	Motors	Compressed Air - Refrigerated Cycling Dryers	employee	New	0.00	10	\$0.00	16%	30%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Industrial Machinery	Motors	Compressed Air - System Controls	employee	New	119.99	10	\$28.42	9%	38%	\$0.03	1.35	1.36	UNIDO Study on Industrial Energy Efficiency
Industrial Machinery	Motors	Compressed Air - Leak Management Program	employee	New	308.61	10	\$28.57	18%	75%	\$0.01	6.93	6.93	7th Power Plan
Industrial Machinery	Motors	Compressed Air - Variable Speed Drive	employee	New	221.90	15	\$174.24	26%	45%	\$0.08	2.05	2.06	UNIDO Study on Industrial Energy Efficiency
Industrial Machinery	Motors	Compressed Air - Low Pressure-Drop Filters	employee	New	7.40	10	\$2.69	17%	50%	\$0.05	0.10	0.10	Illinois TRM
Industrial Machinery	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	New	45.14	10	\$8.71	17%	50%	\$0.03	0.59	0.60	UNIDO Study on Industrial Energy Efficiency
Industrial Machinery	Motors	Compressed Air - Outside Air Intake	employee	New	0.00	20	\$0.00	17%	50%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Industrial Machinery	Motors	Compressed Air - Receiver Capacity Addition	employee	New	44.80	15	\$23.96	17%	50%	\$0.06	0.72	0.72	UNIDO Study on Industrial Energy Efficiency
Industrial Machinery	Motors	Material Handling - Variable Speed Drive	employee	New	451.35	10	\$161.40	25%	45%	\$0.05	4.33	4.32	7th Power Plan
Industrial Machinery	Motors	Motors - Green Rewind (<100 HP)	employee	New	14.26	10	\$6.18	10%	50%	\$0.06	1.10	1.09	7th Power Plan
Industrial Machinery	Motors	Motors - Green Rewind (100 HP+)	employee	New	8.03	10	\$2.19	6%	25%	\$0.04	0.29	0.29	7th Power Plan

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Industrial Machinery	Motors	Switch from Belt Drive to Direct Drive	employee	New	121.65	12	\$27.12	16%	25%	\$0.03	2.47	2.46	2015-mdi-irp-report---volume-iii.pdf
Industrial Machinery	Motors	Motors - Synchronous Belts	employee	New	32.16	10	\$8.16	16%	36%	\$0.03	1.02	1.02	7th Power Plan
Industrial Machinery	Miscellaneous	Agriculture - Engine Block Timer	employee	New	666.79	3	\$8.23	0%	0%	\$0.00	0.00	0.00	Vermont TRM
Industrial Machinery	Motors	Agriculture - Live Stock Waterer	employee	New	369.04	10	\$197.13	0%	0%	\$0.07	0.00	0.00	Ontario Power TRM
Industrial Machinery	Process	Dairy - Milk Precoolers	employee	New	102.08	15	\$47.40	0%	0%	\$0.05	0.00	0.00	Ontario Power TRM
Industrial Machinery	Process	Clean Room: Change Filter Strategy	employee	New	55.41	15	\$0.41	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Industrial Machinery	Process	Clean Room: Chiller Optimize	employee	New	30.31	15	\$2.81	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Industrial Machinery	Process	Clean Room: Clean Room HVAC	employee	New	18.37	15	\$3.39	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Industrial Machinery	Process	Elec Chip Fab: Solidstate Chiller	employee	New	18.37	15	\$10.64	0%	0%	\$0.06	0.00	0.00	7th Power Plan
Industrial Machinery	Process	Elec Chip Fab: Eliminate Exhaust	employee	New	6.92	15	\$1.47	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Industrial Machinery	Process	Elec Chip Fab: Exhaust Injector	employee	New	13.83	15	\$7.09	0%	0%	\$0.05	0.00	0.00	7th Power Plan
Industrial Machinery	Process	Elec Chip Fab: Reduce Gas Pressure	employee	New	13.85	15	\$0.14	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Industrial Machinery	Motors	Panel: Hydraulic Press	employee	New	679.90	10	\$161.30	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Industrial Machinery	Motors	Wood: Replace Pneumatic Conveyor	employee	New	732.75	10	\$12.08	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Industrial Machinery	Process	Metal: New Arc Furnace	employee	New	468.99	10	\$49.31	0%	0%	-\$0.09	0.00	0.00	7th Power Plan
Industrial Machinery	Process	Paper: Premium Control Large Material	employee	New	76.85	10	\$38.54	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Industrial Machinery	Process	Paper: Efficient Pulp Screen	employee	New	61.61	10	\$12.70	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Industrial Machinery	Process	Kraft: Effluent Treatment System	employee	New	61.61	10	\$5.21	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Industrial Machinery	Motors	Kraft: Efficient Agitator	employee	New	1,235.32	10	\$120.37	0%	0%	\$0.01	0.00	0.00	7th Power Plan

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Industrial Machinery	Process	Mech Pulp: Premium Process	employee	New	0.69	5	\$0.09	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Industrial Machinery	Motors	Mech Pulp: Refiner Plate Improvement	employee	New	10.57	1	\$0.46	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Industrial Machinery	Cooling	Transformer - High Efficiency	employee	New	36.73	10	\$46.11	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Industrial Machinery	Heating	Transformer - High Efficiency	employee	New	171.63	10	\$46.11	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Industrial Machinery	Ventilation	Transformer - High Efficiency	employee	New	3.53	10	\$46.11	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Industrial Machinery	Interior Lighting	Transformer - High Efficiency	employee	New	17.52	10	\$46.11	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Industrial Machinery	Exterior Lighting	Transformer - High Efficiency	employee	New	3.76	10	\$46.11	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Industrial Machinery	Motors	Transformer - High Efficiency	employee	New	94.30	10	\$46.11	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Industrial Machinery	Process	Transformer - High Efficiency	employee	New	30.78	10	\$46.11	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Industrial Machinery	Miscellaneous	Transformer - High Efficiency	employee	New	23.90	10	\$46.11	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Industrial Machinery	Cooling	Strategic Energy Management	employee	New	104.03	3	\$283.17	0%	5%	\$0.08	0.00	0.00	AEG Research
Industrial Machinery	Heating	Strategic Energy Management	employee	New	494.09	3	\$283.17	0%	5%	\$0.08	0.02	0.02	AEG Research
Industrial Machinery	Ventilation	Strategic Energy Management	employee	New	10.17	3	\$283.17	0%	5%	\$0.08	0.00	0.00	AEG Research
Industrial Machinery	Interior Lighting	Strategic Energy Management	employee	New	48.87	3	\$283.17	0%	5%	\$0.08	0.01	0.02	AEG Research
Industrial Machinery	Exterior Lighting	Strategic Energy Management	employee	New	10.87	3	\$283.17	0%	5%	\$0.08	0.00	0.00	AEG Research
Industrial Machinery	Motors	Strategic Energy Management	employee	New	272.43	3	\$283.17	0%	5%	\$0.08	0.06	0.06	AEG Research
Industrial Machinery	Process	Strategic Energy Management	employee	New	88.91	3	\$283.17	0%	5%	\$0.08	0.02	0.02	AEG Research
Industrial Machinery	Miscellaneous	Strategic Energy Management	employee	New	69.06	3	\$283.17	0%	5%	\$0.08	0.02	0.01	AEG Research
Industrial Machinery	Interior Lighting	Commissioning	employee	New	56.38	3	\$256.19	5%	39%	\$0.14	0.08	0.13	AEG Research

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Industrial Machinery	Exterior Lighting	Commissioning	employee	New	12.54	3	\$256.19	5%	39%	\$0.14	0.02	0.03	AEG Research
Industrial Machinery	Motors	Commissioning	employee	New	314.26	3	\$256.19	5%	39%	\$0.14	0.48	0.50	AEG Research
Industrial Machinery	Process	Commissioning	employee	New	102.56	3	\$256.19	5%	39%	\$0.14	0.16	0.16	AEG Research
Industrial Machinery	Miscellaneous	Commissioning	employee	New	79.66	3	\$256.19	5%	39%	\$0.14	0.15	0.10	AEG Research
Industrial Machinery	Interior Lighting	Retrocommissioning	employee	New	56.59	3	\$162.64	0%	0%	\$0.09	0.00	0.00	AEG Research
Industrial Machinery	Exterior Lighting	Retrocommissioning	employee	New	12.54	3	\$162.64	0%	0%	\$0.09	0.00	0.00	AEG Research
Industrial Machinery	Motors	Retrocommissioning	employee	New	314.34	3	\$162.64	0%	0%	\$0.09	0.00	0.00	AEG Research
Industrial Machinery	Process	Retrocommissioning	employee	New	102.59	3	\$162.64	0%	0%	\$0.09	0.00	0.00	AEG Research
Industrial Machinery	Miscellaneous	Retrocommissioning	employee	New	79.68	3	\$162.64	0%	0%	\$0.09	0.00	0.00	AEG Research
Industrial Machinery	Motors	Municipal Sewage Treatment	employee	New	20.11	12	\$11.25	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Industrial Machinery	Motors	Municipal Water Supply Treatment	employee	New	0.00	12	\$0.00	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Lumber Wood Products	Cooling	Insulation - Ceiling	sqft	Existing	0.12	45	\$1.28	15%	25%	\$0.14	0.20	0.21	Building Energy Simulation Tool
Lumber Wood Products	Heating	Insulation - Ceiling	sqft	Existing	0.54	45	\$1.28	15%	25%	\$0.14	0.97	1.00	Building Energy Simulation Tool
Lumber Wood Products	Ventilation	Insulation - Ceiling	sqft	Existing	0.02	45	\$1.28	15%	25%	\$0.14	0.14	0.16	Building Energy Simulation Tool
Lumber Wood Products	Cooling	Insulation - Ducting	sqft	Existing	0.05	20	\$0.84	15%	25%	\$1.04	0.07	0.08	Building Energy Simulation Tool
Lumber Wood Products	Heating	Insulation - Ducting	sqft	Existing	0.02	20	\$0.84	15%	25%	\$1.04	0.04	0.04	Building Energy Simulation Tool
Lumber Wood Products	Ventilation	Insulation - Ducting	sqft	Existing	0.00	20	\$0.84	15%	25%	\$1.04	0.01	0.01	Building Energy Simulation Tool
Lumber Wood Products	Cooling	Insulation - Wall Cavity	sqft	Existing	0.00	45	\$0.15	45%	50%	\$0.02	0.00	0.00	Building Energy Simulation Tool
Lumber Wood Products	Heating	Insulation - Wall Cavity	sqft	Existing	0.76	45	\$0.15	45%	50%	\$0.02	0.69	0.70	Building Energy Simulation Tool

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Lumber Wood Products	Ventilation	Insulation - Wall Cavity	sqft	Existing	0.02	45	\$0.15	45%	50%	\$0.02	0.09	0.11	Building Energy Simulation Tool
Lumber Wood Products	Cooling	HVAC - Duct Repair and Sealing	sqft	Existing	0.02	18	\$0.00	15%	25%	\$0.00	0.03	0.03	Building Energy Simulation Tool
Lumber Wood Products	Heating	HVAC - Duct Repair and Sealing	sqft	Existing	0.05	18	\$0.00	15%	25%	\$0.00	0.10	0.10	Building Energy Simulation Tool
Lumber Wood Products	Ventilation	HVAC - Duct Repair and Sealing	sqft	Existing	0.00	18	\$0.00	15%	25%	\$0.00	0.01	0.02	Building Energy Simulation Tool
Lumber Wood Products	Cooling	Chiller - Chilled Water Reset	sqft	Existing	0.05	10	\$0.01	15%	45%	\$0.03	0.07	0.07	AEG-BEST
Lumber Wood Products	Cooling	Chiller - Chilled Water Variable-Flow System	sqft	Existing	0.25	15	\$0.50	15%	60%	\$0.20	0.52	0.58	AEG-BEST
Lumber Wood Products	Cooling	Chiller - Variable Speed Fans	sqft	Existing	0.09	15	\$0.03	15%	75%	\$0.03	0.27	0.29	New Jersey TRM
Lumber Wood Products	Cooling	HVAC - Economizer	sqft	Existing	0.15	10	\$0.25	18%	30%	\$0.22	0.25	0.29	AEG-BEST
Lumber Wood Products	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.25	15%	35%	\$10.43	0.04	0.05	7th Power Plan
Lumber Wood Products	Cooling	Destratification Fans (HVLS)	sqft	Existing	0.16	15	\$0.63	15%	50%	\$0.04	0.98	1.07	AEG Research
Lumber Wood Products	Heating	Destratification Fans (HVLS)	sqft	Existing	1.39	15	\$0.63	15%	50%	\$0.04	9.56	9.64	AEG Research
Lumber Wood Products	Cooling	RTU - Maintenance	sqft	Existing	0.08	3	\$0.07	15%	75%	\$0.27	0.48	0.56	AEG Research
Lumber Wood Products	Cooling	Thermostat - WiFi/Interactive	sqft	Existing	0.28	5	\$0.66	5%	15%	\$0.09	0.45	0.49	7th Power Plan
Lumber Wood Products	Heating	Thermostat - WiFi/Interactive	sqft	Existing	1.27	5	\$0.66	5%	15%	\$0.09	2.27	2.35	7th Power Plan
Lumber Wood Products	Ventilation	Thermostat - WiFi/Interactive	sqft	Existing	0.04	5	\$0.66	5%	15%	\$0.09	0.32	0.38	7th Power Plan
Lumber Wood Products	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.29	15	\$0.35	7%	33%	\$0.10	7.69	9.72	7th Power Plan
Lumber Wood Products	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.40	15	\$0.58	7%	33%	\$0.12	10.21	13.29	7th Power Plan
Lumber Wood Products	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	Existing	0.02	15	\$0.00	1%	2%	\$0.01	0.04	0.06	7th Power Plan
Lumber Wood Products	Interior Lighting	Interior Lighting - Timers and Timers	sqft	Existing	0.00	8	\$0.00	7%	7%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx

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Lumber Wood Products	Interior Lighting	Interior Lighting - Skylights	sqft	Existing	0.00	15	\$1.01	15%	23%	\$0.00	0.00	0.00	AEG Research
Lumber Wood Products	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	sqft	Existing	0.03	16	\$1.81	5%	40%	\$4.03	1.13	1.83	7th Power Plan
Lumber Wood Products	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	Existing	0.04	11	\$0.00	15%	50%	\$0.01	1.28	1.84	Illinois TRM
Lumber Wood Products	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	sqft	Existing	0.05	8	\$0.03	15%	25%	\$0.08	1.55	2.38	7th Power Plan
Lumber Wood Products	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	Existing	0.03	8	\$0.02	33%	60%	\$0.08	2.15	3.41	Pacific Gas and Electric Research
Lumber Wood Products	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	Existing	0.03	7	\$1.19	15%	30%	\$4.46	1.33	2.25	AEG Research
Lumber Wood Products	Process	Process - Conductivity Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Process	Process - Timers and Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Motors	Process - Timers and Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Process	Refrigeration - Floating Head Pressure	employee	Existing	26.17	15	\$25.46	20%	50%	\$0.11	0.62	0.62	RTF Workbook
Lumber Wood Products	Process	Refrigeration - System Optimization	employee	Existing	41.95	15	\$17.93	20%	50%	\$0.05	1.00	1.00	AEG Research
Lumber Wood Products	Motors	Pumping System - Equipment Upgrade	employee	Existing	1,007.60	10	\$160.68	9%	38%	\$0.02	22.01	24.53	7th Power Plan
Lumber Wood Products	Motors	Pumping System - System Optimization	employee	Existing	746.31	12	\$244.87	9%	38%	\$0.03	15.81	17.44	UNIDO Study on Industrial Energy Efficiency
Lumber Wood Products	Motors	Pumping System - Variable Speed Drive	employee	Existing	738.90	10	\$254.76	9%	38%	\$0.04	15.60	17.33	UNIDO Study on Industrial Energy Efficiency
Lumber Wood Products	Motors	Fan System - Equipment Upgrade	employee	Existing	410.50	10	\$44.65	9%	38%	\$0.02	8.75	9.53	UNIDO Study on Industrial Energy Efficiency
Lumber Wood Products	Motors	Fan System - Flow Optimization	employee	Existing	483.98	10	\$73.88	9%	38%	\$0.02	10.31	11.25	UNIDO Study on Industrial Energy Efficiency
Lumber Wood Products	Motors	Fan System - Variable Speed Drive	employee	Existing	705.81	10	\$371.76	9%	38%	\$0.06	14.73	16.73	UNIDO Study on Industrial Energy Efficiency
Lumber Wood Products	Motors	Compressed Air - Equipment Upgrade	employee	Existing	679.07	10	\$54.59	17%	50%	\$0.01	17.40	19.14	7th Power Plan

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Lumber Wood Products	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	Existing	0.00	15	\$0.00	16%	38%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Lumber Wood Products	Motors	Compressed Air - Refrigerated Cycling Dryers	employee	Existing	0.00	10	\$0.00	16%	30%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Lumber Wood Products	Motors	Compressed Air - System Controls	employee	Existing	150.27	10	\$39.03	9%	38%	\$0.03	3.26	3.69	UNIDO Study on Industrial Energy Efficiency
Lumber Wood Products	Motors	Compressed Air - Leak Management Program	employee	Existing	386.03	10	\$39.24	18%	75%	\$0.02	16.93	18.70	7th Power Plan
Lumber Wood Products	Motors	Compressed Air - Variable Speed Drive	employee	Existing	273.47	15	\$239.30	26%	45%	\$0.08	3.91	4.55	UNIDO Study on Industrial Energy Efficiency
Lumber Wood Products	Motors	Compressed Air - Low Pressure-Drop Filters	employee	Existing	9.12	10	\$3.69	17%	50%	\$0.05	0.23	0.27	Illinois TRM
Lumber Wood Products	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	Existing	56.62	10	\$11.97	17%	50%	\$0.03	1.44	1.62	UNIDO Study on Industrial Energy Efficiency
Lumber Wood Products	Motors	Compressed Air - Outside Air Intake	employee	Existing	0.00	20	\$0.00	17%	50%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Lumber Wood Products	Motors	Compressed Air - Receiver Capacity Addition	employee	Existing	56.10	15	\$32.90	17%	50%	\$0.06	1.42	1.61	UNIDO Study on Industrial Energy Efficiency
Lumber Wood Products	Motors	Material Handling - Variable Speed Drive	employee	Existing	4,685.13	10	\$1,841.90	25%	45%	\$0.05	69.29	77.22	7th Power Plan
Lumber Wood Products	Motors	Motors - Green Rewind (<100 HP)	employee	Existing	63.05	10	\$30.38	10%	50%	\$0.06	9.24	10.48	7th Power Plan
Lumber Wood Products	Motors	Motors - Green Rewind (100 HP+)	employee	Existing	35.96	10	\$10.78	6%	25%	\$0.04	2.53	2.81	7th Power Plan
Lumber Wood Products	Motors	Switch from Belt Drive to Direct Drive	employee	Existing	547.56	12	\$133.35	16%	25%	\$0.03	19.38	21.28	2015-mdu-irp-report---volume-iii.pdf
Lumber Wood Products	Motors	Motors - Synchronous Belts	employee	Existing	144.39	10	\$40.12	16%	36%	\$0.03	10.97	12.42	7th Power Plan
Lumber Wood Products	Miscellaneous	Agriculture - Engine Block Timer	employee	Existing	1,513.55	3	\$18.67	0%	0%	\$0.00	0.00	0.00	Vermont TRM
Lumber Wood Products	Motors	Agriculture - Live Stock Waterer	employee	Existing	2,384.37	10	\$1,415.04	0%	0%	\$0.07	0.00	0.00	Ontario Power TRM
Lumber Wood Products	Process	Dairy - Milk Precoolers	employee	Existing	174.47	15	\$81.02	0%	0%	\$0.05	0.00	0.00	Ontario Power TRM
Lumber Wood Products	Process	Clean Room: Change Filter Strategy	employee	Existing	162.54	15	\$1.20	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Lumber Wood Products	Process	Clean Room: Chiller Optimize	employee	Existing	51.82	15	\$4.80	0%	0%	\$0.01	0.00	0.00	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Lumber Wood Products	Process	Clean Room: Clean Room HVAC	employee	Existing	31.46	15	\$5.79	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Lumber Wood Products	Process	Elec Chip Fab: Solidstate Chiller	employee	Existing	31.41	15	\$18.19	0%	0%	\$0.05	0.00	0.00	7th Power Plan
Lumber Wood Products	Process	Elec Chip Fab: Eliminate Exhaust	employee	Existing	20.32	15	\$4.31	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Lumber Wood Products	Process	Elec Chip Fab: Exhaust Injector	employee	Existing	40.56	15	\$20.80	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Lumber Wood Products	Process	Elec Chip Fab: Reduce Gas Pressure	employee	Existing	40.63	15	\$0.42	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Lumber Wood Products	Motors	Panel: Hydraulic Press	employee	Existing	7,067.90	10	\$1,840.80	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Lumber Wood Products	Motors	Wood: Replace Pneumatic Conveyor	employee	Existing	8,362.24	10	\$137.86	15%	75%	\$0.00	0.00	391.43	7th Power Plan
Lumber Wood Products	Process	Metal: New Arc Furnace	employee	Existing	2,120.31	10	\$222.57	0%	0%	-\$0.20	0.00	0.00	7th Power Plan
Lumber Wood Products	Process	Paper: Premium Control Large Material	employee	Existing	228.20	10	\$114.49	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Lumber Wood Products	Process	Paper: Efficient Pulp Screen	employee	Existing	183.31	10	\$37.71	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Lumber Wood Products	Process	Kraft: Effluent Treatment System	employee	Existing	183.31	10	\$15.46	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Lumber Wood Products	Motors	Kraft: Efficient Agitator	employee	Existing	12,916.78	10	\$1,373.65	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Lumber Wood Products	Process	Mech Pulp: Premium Process	employee	Existing	2.05	5	\$0.26	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Lumber Wood Products	Motors	Mech Pulp: Refiner Plate Improvement	employee	Existing	108.57	1	\$5.24	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Lumber Wood Products	Cooling	Transformer - High Efficiency	employee	Existing	29.83	10	\$111.38	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Lumber Wood Products	Heating	Transformer - High Efficiency	employee	Existing	132.53	10	\$111.38	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Lumber Wood Products	Ventilation	Transformer - High Efficiency	employee	Existing	3.74	10	\$111.38	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Lumber Wood Products	Interior Lighting	Transformer - High Efficiency	employee	Existing	32.97	10	\$111.38	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Lumber Wood Products	Exterior Lighting	Transformer - High Efficiency	employee	Existing	7.12	10	\$111.38	15%	15%	\$0.02	0.00	0.00	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Lumber Wood Products	Motors	Transformer - High Efficiency	employee	Existing	521.78	10	\$111.38	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Lumber Wood Products	Process	Transformer - High Efficiency	employee	Existing	91.39	10	\$111.38	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Lumber Wood Products	Miscellaneous	Transformer - High Efficiency	employee	Existing	57.29	10	\$111.38	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Lumber Wood Products	Cooling	Strategic Energy Management	employee	Existing	81.82	3	\$684.08	0%	24%	\$0.08	0.25	0.28	AEG Research
Lumber Wood Products	Heating	Strategic Energy Management	employee	Existing	378.91	3	\$684.08	0%	24%	\$0.08	1.31	1.38	AEG Research
Lumber Wood Products	Ventilation	Strategic Energy Management	employee	Existing	10.69	3	\$684.08	0%	24%	\$0.08	0.18	0.22	AEG Research
Lumber Wood Products	Interior Lighting	Strategic Energy Management	employee	Existing	94.03	3	\$684.08	0%	24%	\$0.08	1.32	1.91	AEG Research
Lumber Wood Products	Exterior Lighting	Strategic Energy Management	employee	Existing	20.44	3	\$684.08	0%	24%	\$0.08	0.30	0.43	AEG Research
Lumber Wood Products	Motors	Strategic Energy Management	employee	Existing	1,496.86	3	\$684.08	0%	24%	\$0.08	24.73	27.49	AEG Research
Lumber Wood Products	Process	Strategic Energy Management	employee	Existing	262.08	3	\$684.08	0%	24%	\$0.08	4.62	4.66	AEG Research
Lumber Wood Products	Miscellaneous	Strategic Energy Management	employee	Existing	164.16	3	\$684.08	0%	24%	\$0.08	3.67	2.87	AEG Research
Lumber Wood Products	Interior Lighting	Commissioning	employee	Existing	107.93	3	\$1,181.99	0%	0%	\$0.15	0.00	0.00	AEG Research
Lumber Wood Products	Exterior Lighting	Commissioning	employee	Existing	23.47	3	\$1,181.99	0%	0%	\$0.15	0.00	0.00	AEG Research
Lumber Wood Products	Motors	Commissioning	employee	Existing	1,717.16	3	\$1,181.99	0%	0%	\$0.15	0.00	0.00	AEG Research
Lumber Wood Products	Process	Commissioning	employee	Existing	300.55	3	\$1,181.99	0%	0%	\$0.15	0.00	0.00	AEG Research
Lumber Wood Products	Miscellaneous	Commissioning	employee	Existing	188.15	3	\$1,181.99	0%	0%	\$0.15	0.00	0.00	AEG Research
Lumber Wood Products	Interior Lighting	Retrocommissioning	employee	Existing	109.89	3	\$750.35	10%	35%	\$0.09	1.62	2.32	AEG Research
Lumber Wood Products	Exterior Lighting	Retrocommissioning	employee	Existing	23.73	3	\$750.35	10%	35%	\$0.09	0.36	0.52	AEG Research
Lumber Wood Products	Motors	Retrocommissioning	employee	Existing	1,739.27	3	\$750.35	10%	35%	\$0.09	30.10	33.23	AEG Research

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Lumber Wood Products	Process	Retrocommissioning	employee	Existing	304.63	3	\$750.35	10%	35%	\$0.09	5.62	5.63	AEG Research
Lumber Wood Products	Miscellaneous	Retrocommissioning	employee	Existing	190.95	3	\$750.35	10%	35%	\$0.09	4.47	3.47	AEG Research
Lumber Wood Products	Motors	Municipal Sewage Treatment	employee	Existing	129.75	12	\$80.77	0%	0%	\$0.06	0.00	0.00	7th Power Plan
Lumber Wood Products	Motors	Municipal Water Supply Treatment	employee	Existing	0.00	12	\$0.00	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Lumber Wood Products	Cooling	Insulation - Ceiling	sqft	New	0.11	45	\$1.28	15%	25%	\$0.16	0.07	0.07	Building Energy Simulation Tool
Lumber Wood Products	Heating	Insulation - Ceiling	sqft	New	0.52	45	\$1.28	15%	25%	\$0.16	0.34	0.34	Building Energy Simulation Tool
Lumber Wood Products	Ventilation	Insulation - Ceiling	sqft	New	0.01	45	\$1.28	15%	25%	\$0.16	0.04	0.05	Building Energy Simulation Tool
Lumber Wood Products	Cooling	Insulation - Ducting	sqft	New	0.04	20	\$0.84	15%	25%	\$1.11	0.03	0.03	Building Energy Simulation Tool
Lumber Wood Products	Heating	Insulation - Ducting	sqft	New	0.02	20	\$0.84	15%	25%	\$1.11	0.01	0.01	Building Energy Simulation Tool
Lumber Wood Products	Ventilation	Insulation - Ducting	sqft	New	0.00	20	\$0.84	15%	25%	\$1.11	0.00	0.00	Building Energy Simulation Tool
Lumber Wood Products	Cooling	Insulation - Wall Cavity	sqft	New	0.00	45	\$0.15	45%	50%	\$0.02	0.00	0.00	Building Energy Simulation Tool
Lumber Wood Products	Heating	Insulation - Wall Cavity	sqft	New	0.71	45	\$0.15	45%	50%	\$0.02	0.23	0.23	Building Energy Simulation Tool
Lumber Wood Products	Ventilation	Insulation - Wall Cavity	sqft	New	0.01	45	\$0.15	45%	50%	\$0.02	0.03	0.03	Building Energy Simulation Tool
Lumber Wood Products	Cooling	HVAC - Duct Repair and Sealing	sqft	New	0.01	18	\$0.00	15%	25%	\$0.00	0.01	0.01	Building Energy Simulation Tool
Lumber Wood Products	Heating	HVAC - Duct Repair and Sealing	sqft	New	0.05	18	\$0.00	15%	25%	\$0.00	0.03	0.03	Building Energy Simulation Tool
Lumber Wood Products	Ventilation	HVAC - Duct Repair and Sealing	sqft	New	0.00	18	\$0.00	15%	25%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Lumber Wood Products	Cooling	Chiller - Chilled Water Reset	sqft	New	0.04	10	\$0.01	15%	45%	\$0.03	0.01	0.01	AEG-BEST
Lumber Wood Products	Cooling	Chiller - Chilled Water Variable-Flow System	sqft	New	0.21	15	\$0.50	15%	60%	\$0.24	0.10	0.11	AEG-BEST
Lumber Wood Products	Cooling	Chiller - Variable Speed Fans	sqft	New	0.08	15	\$0.03	15%	75%	\$0.04	0.05	0.05	New Jersey TRM

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Lumber Wood Products	Cooling	HVAC - Economizer	sqft	New	0.13	10	\$0.25	18%	30%	\$0.23	0.04	0.05	AEG-BEST
Lumber Wood Products	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.25	15%	35%	\$12.47	0.01	0.01	7th Power Plan
Lumber Wood Products	Cooling	Destratification Fans (HVLS)	sqft	New	0.14	15	\$0.63	15%	50%	\$0.05	0.21	0.22	AEG Research
Lumber Wood Products	Heating	Destratification Fans (HVLS)	sqft	New	1.30	15	\$0.63	15%	50%	\$0.05	2.05	2.06	AEG Research
Lumber Wood Products	Cooling	RTU - Maintenance	sqft	New	0.08	3	\$0.07	15%	75%	\$0.28	0.03	0.04	AEG Research
Lumber Wood Products	Cooling	Thermostat - WiFi/Interactive	sqft	New	0.26	5	\$0.66	5%	15%	\$0.09	0.02	0.02	7th Power Plan
Lumber Wood Products	Heating	Thermostat - WiFi/Interactive	sqft	New	1.22	5	\$0.66	5%	15%	\$0.09	0.10	0.11	7th Power Plan
Lumber Wood Products	Ventilation	Thermostat - WiFi/Interactive	sqft	New	0.03	5	\$0.66	5%	15%	\$0.09	0.01	0.02	7th Power Plan
Lumber Wood Products	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.27	15	\$0.35	22%	41%	\$0.10	2.62	3.22	7th Power Plan
Lumber Wood Products	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.36	15	\$0.58	22%	41%	\$0.12	3.57	4.42	7th Power Plan
Lumber Wood Products	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	New	0.02	15	\$0.00	1%	2%	\$0.01	0.01	0.01	7th Power Plan
Lumber Wood Products	Interior Lighting	Interior Lighting - Timeclocks and Timers	sqft	New	0.00	8	\$0.00	7%	7%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Lumber Wood Products	Interior Lighting	Interior Lighting - Skylights	sqft	New	0.00	15	\$1.01	18%	24%	\$0.00	0.00	0.00	AEG Research
Lumber Wood Products	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	sqft	New	0.03	16	\$1.81	5%	40%	\$4.03	0.28	0.38	7th Power Plan
Lumber Wood Products	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	New	0.03	11	\$0.00	15%	50%	\$0.01	0.25	0.34	Illinois TRM
Lumber Wood Products	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	sqft	New	0.04	8	\$0.03	15%	25%	\$0.08	0.24	0.36	7th Power Plan
Lumber Wood Products	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	New	0.02	8	\$0.02	44%	60%	\$0.08	0.20	0.30	Pacific Gas and Electric Research
Lumber Wood Products	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	New	0.03	7	\$1.19	15%	30%	\$4.40	0.20	0.31	AEG Research
Lumber Wood Products	Process	Process - Conductivity Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A

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Lumber Wood Products	Process	Process - Timers and Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Motors	Process - Timers and Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Process	Refrigeration - Floating Head Pressure	employee	New	26.19	15	\$17.99	20%	50%	\$0.08	0.14	0.14	RTF Workbook
Lumber Wood Products	Process	Refrigeration - System Optimization	employee	New	41.95	15	\$6.29	20%	50%	\$0.02	0.23	0.23	AEG Research
Lumber Wood Products	Motors	Pumping System - Equipment Upgrade	employee	New	1,062.51	10	\$160.68	9%	38%	\$0.02	4.53	4.61	7th Power Plan
Lumber Wood Products	Motors	Pumping System - System Optimization	employee	New	791.61	12	\$244.87	9%	38%	\$0.03	4.56	4.57	UNIDO Study on Industrial Energy Efficiency
Lumber Wood Products	Motors	Pumping System - Variable Speed Drive	employee	New	787.34	10	\$254.76	9%	38%	\$0.04	4.07	4.09	UNIDO Study on Industrial Energy Efficiency
Lumber Wood Products	Motors	Fan System - Equipment Upgrade	employee	New	431.89	10	\$44.65	9%	38%	\$0.02	2.23	2.24	UNIDO Study on Industrial Energy Efficiency
Lumber Wood Products	Motors	Fan System - Flow Optimization	employee	New	509.73	10	\$73.88	9%	38%	\$0.02	2.63	2.65	UNIDO Study on Industrial Energy Efficiency
Lumber Wood Products	Motors	Fan System - Variable Speed Drive	employee	New	761.28	10	\$371.76	9%	38%	\$0.06	3.94	3.97	UNIDO Study on Industrial Energy Efficiency
Lumber Wood Products	Motors	Compressed Air - Equipment Upgrade	employee	New	710.68	10	\$54.59	17%	50%	\$0.01	3.53	3.59	7th Power Plan
Lumber Wood Products	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	New	0.00	15	\$0.00	16%	38%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Lumber Wood Products	Motors	Compressed Air - Refrigerated Cycling Dryers	employee	New	0.00	10	\$0.00	16%	30%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Lumber Wood Products	Motors	Compressed Air - System Controls	employee	New	159.67	10	\$39.03	9%	38%	\$0.03	0.68	0.70	UNIDO Study on Industrial Energy Efficiency
Lumber Wood Products	Motors	Compressed Air - Leak Management Program	employee	New	405.08	10	\$39.24	18%	75%	\$0.02	3.45	3.51	7th Power Plan
Lumber Wood Products	Motors	Compressed Air - Variable Speed Drive	employee	New	294.46	15	\$239.30	26%	45%	\$0.08	1.03	1.05	UNIDO Study on Industrial Energy Efficiency
Lumber Wood Products	Motors	Compressed Air - Low Pressure-Drop Filters	employee	New	9.82	10	\$3.69	17%	50%	\$0.05	0.05	0.05	Illinois TRM
Lumber Wood Products	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	New	60.05	10	\$11.97	17%	50%	\$0.03	0.30	0.30	UNIDO Study on Industrial Energy Efficiency
Lumber Wood Products	Motors	Compressed Air - Outside Air Intake	employee	New	0.00	20	\$0.00	17%	50%	\$0.00	0.00	0.00	Michigan Energy Measures Database

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Lumber Wood Products	Motors	Compressed Air - Receiver Capacity Addition	employee	New	59.72	15	\$32.90	17%	50%	\$0.06	0.36	0.37	UNIDO Study on Industrial Energy Efficiency
Lumber Wood Products	Motors	Material Handling - Variable Speed Drive	employee	New	5,001.69	10	\$1,841.90	25%	45%	\$0.05	18.16	18.26	7th Power Plan
Lumber Wood Products	Motors	Motors - Green Rewind (<100 HP)	employee	New	67.93	10	\$30.38	10%	50%	\$0.06	2.47	2.48	7th Power Plan
Lumber Wood Products	Motors	Motors - Green Rewind (100 HP+)	employee	New	38.31	10	\$10.78	6%	25%	\$0.04	0.66	0.66	7th Power Plan
Lumber Wood Products	Motors	Switch from Belt Drive to Direct Drive	employee	New	579.40	12	\$133.35	16%	25%	\$0.03	5.57	5.58	2015-mdu-irp-report---volume-iii.pdf
Lumber Wood Products	Motors	Motors - Synchronous Belts	employee	New	153.50	10	\$40.12	16%	36%	\$0.03	2.29	2.34	7th Power Plan
Lumber Wood Products	Miscellaneous	Agriculture - Engine Block Timer	employee	New	1,513.55	3	\$18.67	0%	0%	\$0.00	0.00	0.00	Vermont TRM
Lumber Wood Products	Motors	Agriculture - Live Stock Waterer	employee	New	2,576.45	10	\$1,415.04	0%	0%	\$0.07	0.00	0.00	Ontario Power TRM
Lumber Wood Products	Process	Dairy - Milk Precoolers	employee	New	174.62	15	\$81.02	0%	0%	\$0.05	0.00	0.00	Ontario Power TRM
Lumber Wood Products	Process	Clean Room: Change Filter Strategy	employee	New	162.54	15	\$1.20	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Lumber Wood Products	Process	Clean Room: Chiller Optimize	employee	New	51.82	15	\$4.80	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Lumber Wood Products	Process	Clean Room: Clean Room HVAC	employee	New	31.43	15	\$5.79	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Lumber Wood Products	Process	Elec Chip Fab: Solidstate Chiller	employee	New	31.43	15	\$18.19	0%	0%	\$0.05	0.00	0.00	7th Power Plan
Lumber Wood Products	Process	Elec Chip Fab: Eliminate Exhaust	employee	New	20.30	15	\$4.31	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Lumber Wood Products	Process	Elec Chip Fab: Exhaust Injector	employee	New	40.60	15	\$20.80	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Lumber Wood Products	Process	Elec Chip Fab: Reduce Gas Pressure	employee	New	40.63	15	\$0.42	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Lumber Wood Products	Motors	Panel: Hydraulic Press	employee	New	7,517.92	10	\$1,840.80	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Lumber Wood Products	Motors	Wood: Replace Pneumatic Conveyor	employee	New	8,362.24	10	\$137.86	15%	75%	\$0.00	0.00	90.40	7th Power Plan
Lumber Wood Products	Process	Metal: New Arc Furnace	employee	New	2,118.33	10	\$222.57	0%	0%	-\$0.20	0.00	0.00	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Lumber Wood Products	Process	Paper: Premium Control Large Material	employee	New	228.52	10	\$114.49	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Lumber Wood Products	Process	Paper: Efficient Pulp Screen	employee	New	183.14	10	\$37.71	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Lumber Wood Products	Process	Kraft: Effluent Treatment System	employee	New	183.14	10	\$15.46	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Lumber Wood Products	Motors	Kraft: Efficient Agitator	employee	New	13,589.97	10	\$1,373.65	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Lumber Wood Products	Process	Mech Pulp: Premium Process	employee	New	2.05	5	\$0.26	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Lumber Wood Products	Motors	Mech Pulp: Refiner Plate Improvement	employee	New	117.32	1	\$5.24	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Lumber Wood Products	Cooling	Transformer - High Efficiency	employee	New	27.34	10	\$110.49	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Lumber Wood Products	Heating	Transformer - High Efficiency	employee	New	127.75	10	\$110.49	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Lumber Wood Products	Ventilation	Transformer - High Efficiency	employee	New	2.63	10	\$110.49	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Lumber Wood Products	Interior Lighting	Transformer - High Efficiency	employee	New	30.09	10	\$110.49	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Lumber Wood Products	Exterior Lighting	Transformer - High Efficiency	employee	New	6.67	10	\$110.49	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Lumber Wood Products	Motors	Transformer - High Efficiency	employee	New	563.81	10	\$110.49	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Lumber Wood Products	Process	Transformer - High Efficiency	employee	New	91.52	10	\$110.49	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Lumber Wood Products	Miscellaneous	Transformer - High Efficiency	employee	New	54.26	10	\$110.49	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Lumber Wood Products	Cooling	Strategic Energy Management	employee	New	77.43	3	\$678.60	0%	24%	\$0.08	0.01	0.01	AEG Research
Lumber Wood Products	Heating	Strategic Energy Management	employee	New	367.76	3	\$678.60	0%	24%	\$0.08	0.03	0.03	AEG Research
Lumber Wood Products	Ventilation	Strategic Energy Management	employee	New	7.57	3	\$678.60	0%	24%	\$0.08	0.00	0.00	AEG Research
Lumber Wood Products	Interior Lighting	Strategic Energy Management	employee	New	86.63	3	\$678.60	0%	24%	\$0.08	0.03	0.05	AEG Research
Lumber Wood Products	Exterior Lighting	Strategic Energy Management	employee	New	19.27	3	\$678.60	0%	24%	\$0.08	0.01	0.01	AEG Research

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Lumber Wood Products	Motors	Strategic Energy Management	employee	New	1,628.79	3	\$678.60	0%	24%	\$0.08	0.66	0.71	AEG Research
Lumber Wood Products	Process	Strategic Energy Management	employee	New	264.38	3	\$678.60	0%	24%	\$0.08	0.11	0.11	AEG Research
Lumber Wood Products	Miscellaneous	Strategic Energy Management	employee	New	156.75	3	\$678.60	0%	24%	\$0.08	0.08	0.05	AEG Research
Lumber Wood Products	Interior Lighting	Commissioning	employee	New	99.84	3	\$1,188.68	10%	35%	\$0.15	0.04	0.06	AEG Research
Lumber Wood Products	Exterior Lighting	Commissioning	employee	New	22.20	3	\$1,188.68	10%	35%	\$0.15	0.01	0.02	AEG Research
Lumber Wood Products	Motors	Commissioning	employee	New	1,877.19	3	\$1,188.68	10%	35%	\$0.15	0.80	0.85	AEG Research
Lumber Wood Products	Process	Commissioning	employee	New	304.70	3	\$1,188.68	10%	35%	\$0.15	0.13	0.13	AEG Research
Lumber Wood Products	Miscellaneous	Commissioning	employee	New	180.66	3	\$1,188.68	10%	35%	\$0.15	0.09	0.06	AEG Research
Lumber Wood Products	Interior Lighting	Retrocommissioning	employee	New	100.31	3	\$754.60	0%	0%	\$0.10	0.00	0.00	AEG Research
Lumber Wood Products	Exterior Lighting	Retrocommissioning	employee	New	22.23	3	\$754.60	0%	0%	\$0.10	0.00	0.00	AEG Research
Lumber Wood Products	Motors	Retrocommissioning	employee	New	1,879.38	3	\$754.60	0%	0%	\$0.10	0.00	0.00	AEG Research
Lumber Wood Products	Process	Retrocommissioning	employee	New	305.06	3	\$754.60	0%	0%	\$0.10	0.00	0.00	AEG Research
Lumber Wood Products	Miscellaneous	Retrocommissioning	employee	New	180.87	3	\$754.60	0%	0%	\$0.10	0.00	0.00	AEG Research
Lumber Wood Products	Motors	Municipal Sewage Treatment	employee	New	139.79	12	\$80.77	0%	0%	\$0.06	0.00	0.00	7th Power Plan
Lumber Wood Products	Motors	Municipal Water Supply Treatment	employee	New	0.00	12	\$0.00	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Metal Mfg	Cooling	Insulation - Ceiling	sqft	Existing	0.12	45	\$1.28	15%	25%	\$0.14	0.27	0.29	Building Energy Simulation Tool
Metal Mfg	Heating	Insulation - Ceiling	sqft	Existing	0.54	45	\$1.28	15%	25%	\$0.14	1.29	1.33	Building Energy Simulation Tool
Metal Mfg	Ventilation	Insulation - Ceiling	sqft	Existing	0.02	45	\$1.28	15%	25%	\$0.14	0.18	0.22	Building Energy Simulation Tool
Metal Mfg	Cooling	Insulation - Ducting	sqft	Existing	0.05	20	\$0.84	15%	25%	\$1.04	0.10	0.11	Building Energy Simulation Tool

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Metal Mfg	Heating	Insulation - Ducting	sqft	Existing	0.02	20	\$0.84	15%	25%	\$1.04	0.05	0.06	Building Energy Simulation Tool
Metal Mfg	Ventilation	Insulation - Ducting	sqft	Existing	0.00	20	\$0.84	15%	25%	\$1.04	0.01	0.01	Building Energy Simulation Tool
Metal Mfg	Cooling	Insulation - Wall Cavity	sqft	Existing	0.00	45	\$0.15	45%	50%	\$0.02	0.00	0.00	Building Energy Simulation Tool
Metal Mfg	Heating	Insulation - Wall Cavity	sqft	Existing	0.76	45	\$0.15	45%	50%	\$0.02	0.93	0.93	Building Energy Simulation Tool
Metal Mfg	Ventilation	Insulation - Wall Cavity	sqft	Existing	0.02	45	\$0.15	45%	50%	\$0.02	0.12	0.14	Building Energy Simulation Tool
Metal Mfg	Cooling	HVAC - Duct Repair and Sealing	sqft	Existing	0.02	18	\$0.00	15%	25%	\$0.00	0.04	0.04	Building Energy Simulation Tool
Metal Mfg	Heating	HVAC - Duct Repair and Sealing	sqft	Existing	0.05	18	\$0.00	15%	25%	\$0.00	0.13	0.13	Building Energy Simulation Tool
Metal Mfg	Ventilation	HVAC - Duct Repair and Sealing	sqft	Existing	0.00	18	\$0.00	15%	25%	\$0.00	0.02	0.02	Building Energy Simulation Tool
Metal Mfg	Cooling	Chiller - Chilled Water Reset	sqft	Existing	0.05	10	\$0.01	15%	45%	\$0.03	0.09	0.09	AEG-BEST
Metal Mfg	Cooling	Chiller - Chilled Water Variable-Flow System	sqft	Existing	0.25	15	\$0.50	15%	60%	\$0.20	0.69	0.78	AEG-BEST
Metal Mfg	Cooling	Chiller - Variable Speed Fans	sqft	Existing	0.09	15	\$0.03	15%	75%	\$0.03	0.36	0.39	New Jersey TRM
Metal Mfg	Cooling	HVAC - Economizer	sqft	Existing	0.07	10	\$0.25	18%	30%	\$0.43	0.34	0.38	AEG-BEST
Metal Mfg	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.25	15%	35%	\$10.43	0.05	0.07	7th Power Plan
Metal Mfg	Cooling	Destratification Fans (HVLS)	sqft	Existing	0.16	15	\$0.63	15%	50%	\$0.04	1.31	1.43	AEG Research
Metal Mfg	Heating	Destratification Fans (HVLS)	sqft	Existing	1.39	15	\$0.63	15%	50%	\$0.04	12.79	12.90	AEG Research
Metal Mfg	Cooling	RTU - Maintenance	sqft	Existing	0.08	3	\$0.07	15%	75%	\$0.27	0.64	0.75	AEG Research
Metal Mfg	Cooling	Thermostat - WiFi/Interactive	sqft	Existing	0.28	5	\$0.66	5%	15%	\$0.09	0.60	0.66	7th Power Plan
Metal Mfg	Heating	Thermostat - WiFi/Interactive	sqft	Existing	1.27	5	\$0.66	5%	15%	\$0.09	3.03	3.14	7th Power Plan
Metal Mfg	Ventilation	Thermostat - WiFi/Interactive	sqft	Existing	0.04	5	\$0.66	5%	15%	\$0.09	0.43	0.51	7th Power Plan
Metal Mfg	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.14	15	\$0.35	7%	33%	\$0.20	6.39	8.07	7th Power Plan
Metal Mfg	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.20	15	\$0.58	7%	33%	\$0.24	8.48	11.04	7th Power Plan

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Metal Mfg	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	Existing	0.02	15	\$0.00	1%	2%	\$0.01	0.03	0.05	7th Power Plan
Metal Mfg	Interior Lighting	Interior Lighting - Timeclocks and Timers	sqft	Existing	0.00	8	\$0.00	7%	7%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Metal Mfg	Interior Lighting	Interior Lighting - Skylights	sqft	Existing	0.00	15	\$1.01	15%	23%	\$0.00	0.00	0.00	AEG Research
Metal Mfg	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	sqft	Existing	0.03	16	\$1.81	5%	40%	\$4.03	0.93	1.52	7th Power Plan
Metal Mfg	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	Existing	0.04	11	\$0.00	15%	50%	\$0.01	1.07	1.53	Illinois TRM
Metal Mfg	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	sqft	Existing	0.05	8	\$0.03	15%	25%	\$0.08	1.28	1.98	7th Power Plan
Metal Mfg	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	Existing	0.03	8	\$0.02	33%	60%	\$0.08	1.78	2.83	Pacific Gas and Electric Research
Metal Mfg	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	Existing	0.03	7	\$1.19	15%	30%	\$4.46	1.11	1.87	AEG Research
Metal Mfg	Process	Process - Conductivity Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Metal Mfg	Process	Process - Timers and Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Metal Mfg	Motors	Process - Timers and Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Metal Mfg	Process	Refrigeration - Floating Head Pressure	employee	Existing	12.32	15	\$13.34	20%	50%	\$0.11	0.84	0.97	RTF Workbook
Metal Mfg	Process	Refrigeration - System Optimization	employee	Existing	19.75	15	\$9.40	20%	50%	\$0.05	1.35	1.56	AEG Research
Metal Mfg	Motors	Pumping System - Equipment Upgrade	employee	Existing	138.21	10	\$20.26	9%	38%	\$0.02	9.74	9.96	7th Power Plan
Metal Mfg	Motors	Pumping System - System Optimization	employee	Existing	102.28	12	\$30.87	9%	38%	\$0.03	6.99	7.18	UNIDO Study on Industrial Energy Efficiency
Metal Mfg	Motors	Pumping System - Variable Speed Drive	employee	Existing	101.02	10	\$32.12	9%	38%	\$0.04	6.88	7.12	UNIDO Study on Industrial Energy Efficiency
Metal Mfg	Motors	Fan System - Equipment Upgrade	employee	Existing	36.43	10	\$3.65	9%	38%	\$0.02	2.50	2.54	UNIDO Study on Industrial Energy Efficiency
Metal Mfg	Motors	Fan System - Flow Optimization	employee	Existing	42.98	10	\$6.04	9%	38%	\$0.02	2.95	3.00	UNIDO Study on Industrial Energy Efficiency
Metal Mfg	Motors	Fan System - Variable Speed Drive	employee	Existing	62.45	10	\$30.38	9%	38%	\$0.06	4.20	4.45	UNIDO Study on Industrial Energy Efficiency

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Metal Mfg	Motors	Compressed Air - Equipment Upgrade	employee	Existing	251.96	10	\$18.33	17%	50%	\$0.01	20.88	20.88	7th Power Plan
Metal Mfg	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	Existing	0.00	15	\$0.00	16%	38%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Metal Mfg	Motors	Compressed Air - Refrigerated Cycling Dryers	employee	Existing	0.00	10	\$0.00	16%	30%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Metal Mfg	Motors	Compressed Air - System Controls	employee	Existing	54.86	10	\$13.11	9%	38%	\$0.03	3.84	3.99	UNIDO Study on Industrial Energy Efficiency
Metal Mfg	Motors	Compressed Air - Leak Management Program	employee	Existing	142.00	10	\$13.18	18%	75%	\$0.01	20.10	20.30	7th Power Plan
Metal Mfg	Motors	Compressed Air - Variable Speed Drive	employee	Existing	99.67	15	\$80.37	26%	45%	\$0.08	4.60	4.91	UNIDO Study on Industrial Energy Efficiency
Metal Mfg	Motors	Compressed Air - Low Pressure-Drop Filters	employee	Existing	3.32	10	\$1.24	17%	50%	\$0.05	0.27	0.29	Illinois TRM
Metal Mfg	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	Existing	20.69	10	\$4.02	17%	50%	\$0.03	1.69	1.75	UNIDO Study on Industrial Energy Efficiency
Metal Mfg	Motors	Compressed Air - Outside Air Intake	employee	Existing	0.00	20	\$0.00	17%	50%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Metal Mfg	Motors	Compressed Air - Receiver Capacity Addition	employee	Existing	20.45	15	\$11.05	17%	50%	\$0.06	1.67	1.74	UNIDO Study on Industrial Energy Efficiency
Metal Mfg	Motors	Material Handling - Variable Speed Drive	employee	Existing	612.63	10	\$222.10	25%	45%	\$0.05	29.22	30.36	7th Power Plan
Metal Mfg	Motors	Motors - Green Rewind (<100 HP)	employee	Existing	8.84	10	\$3.93	10%	50%	\$0.06	4.18	4.42	7th Power Plan
Metal Mfg	Motors	Motors - Green Rewind (100 HP+)	employee	Existing	5.05	10	\$1.40	6%	25%	\$0.04	1.15	1.19	7th Power Plan
Metal Mfg	Motors	Switch from Belt Drive to Direct Drive	employee	Existing	77.14	12	\$17.27	16%	25%	\$0.03	8.81	9.00	2015-mdu-irp-report---volume-iii.pdf
Metal Mfg	Motors	Motors - Synchronous Belts	employee	Existing	20.29	10	\$5.19	16%	36%	\$0.03	4.97	5.17	7th Power Plan
Metal Mfg	Miscellaneous	Agriculture - Engine Block Timer	employee	Existing	257.70	3	\$3.18	0%	0%	\$0.00	0.00	0.00	Vermont TRM
Metal Mfg	Motors	Agriculture - Live Stock Waterer	employee	Existing	326.00	10	\$178.39	0%	0%	\$0.07	0.00	0.00	Ontario Power TRM
Metal Mfg	Process	Dairy - Milk Precoolers	employee	Existing	82.14	15	\$42.46	0%	0%	\$0.05	0.00	0.00	Ontario Power TRM
Metal Mfg	Process	Clean Room: Change Filter Strategy	employee	Existing	139.54	15	\$1.03	0%	0%	\$0.00	0.00	0.00	7th Power Plan

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Metal Mfg	Process	Clean Room: Chiller Optimize	employee	Existing	27.16	15	\$2.51	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Metal Mfg	Process	Clean Room: Clean Room HVAC	employee	Existing	16.49	15	\$3.04	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Metal Mfg	Process	Elec Chip Fab: Solidstate Chiller	employee	Existing	14.79	15	\$9.53	0%	0%	\$0.06	0.00	0.00	7th Power Plan
Metal Mfg	Process	Elec Chip Fab: Eliminate Exhaust	employee	Existing	15.67	15	\$3.70	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Metal Mfg	Process	Elec Chip Fab: Exhaust Injector	employee	Existing	31.28	15	\$17.86	0%	0%	\$0.05	0.00	0.00	7th Power Plan
Metal Mfg	Process	Elec Chip Fab: Reduce Gas Pressure	employee	Existing	34.89	15	\$0.36	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Metal Mfg	Motors	Panel: Hydraulic Press	employee	Existing	927.44	10	\$221.97	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Metal Mfg	Motors	Wood: Replace Pneumatic Conveyor	employee	Existing	1,008.33	10	\$16.62	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Metal Mfg	Process	Metal: New Arc Furnace	employee	Existing	932.35	10	\$97.87	15%	75%	-\$0.09	128.64	128.64	7th Power Plan
Metal Mfg	Process	Paper: Premium Control Large Material	employee	Existing	108.51	10	\$60.60	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Metal Mfg	Process	Paper: Efficient Pulp Screen	employee	Existing	87.16	10	\$19.96	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Metal Mfg	Process	Kraft: Effluent Treatment System	employee	Existing	97.03	10	\$8.18	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Metal Mfg	Motors	Kraft: Efficient Agitator	employee	Existing	1,691.53	10	\$165.64	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Metal Mfg	Process	Mech Pulp: Premium Process	employee	Existing	0.97	5	\$0.14	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Metal Mfg	Motors	Mech Pulp: Refiner Plate Improvement	employee	Existing	14.20	1	\$0.63	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Metal Mfg	Cooling	Transformer - High Efficiency	employee	Existing	12.82	10	\$25.76	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Metal Mfg	Heating	Transformer - High Efficiency	employee	Existing	56.97	10	\$25.76	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Metal Mfg	Ventilation	Transformer - High Efficiency	employee	Existing	1.61	10	\$25.76	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Metal Mfg	Interior Lighting	Transformer - High Efficiency	employee	Existing	9.32	10	\$25.76	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Metal Mfg	Exterior Lighting	Transformer - High Efficiency	employee	Existing	1.90	10	\$25.76	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Metal Mfg	Motors	Transformer - High Efficiency	employee	Existing	73.27	10	\$25.76	15%	15%	\$0.02	0.00	0.00	7th Power Plan

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Metal Mfg	Process	Transformer - High Efficiency	employee	Existing	43.46	10	\$25.76	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Metal Mfg	Miscellaneous	Transformer - High Efficiency	employee	Existing	9.75	10	\$25.76	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Metal Mfg	Cooling	Strategic Energy Management	employee	Existing	35.17	3	\$158.24	0%	5%	\$0.08	0.07	0.08	AEG Research
Metal Mfg	Heating	Strategic Energy Management	employee	Existing	162.89	3	\$158.24	0%	5%	\$0.08	0.37	0.38	AEG Research
Metal Mfg	Ventilation	Strategic Energy Management	employee	Existing	4.60	3	\$158.24	0%	5%	\$0.08	0.05	0.06	AEG Research
Metal Mfg	Interior Lighting	Strategic Energy Management	employee	Existing	25.04	3	\$158.24	0%	5%	\$0.08	0.23	0.33	AEG Research
Metal Mfg	Exterior Lighting	Strategic Energy Management	employee	Existing	5.44	3	\$158.24	0%	5%	\$0.08	0.05	0.07	AEG Research
Metal Mfg	Motors	Strategic Energy Management	employee	Existing	209.59	3	\$158.24	0%	5%	\$0.08	2.33	2.46	AEG Research
Metal Mfg	Process	Strategic Energy Management	employee	Existing	124.33	3	\$158.24	0%	5%	\$0.08	1.30	1.47	AEG Research
Metal Mfg	Miscellaneous	Strategic Energy Management	employee	Existing	27.87	3	\$158.24	0%	5%	\$0.08	0.40	0.32	AEG Research
Metal Mfg	Interior Lighting	Commissioning	employee	Existing	28.86	3	\$221.64	0%	0%	\$0.15	0.00	0.00	AEG Research
Metal Mfg	Exterior Lighting	Commissioning	employee	Existing	6.28	3	\$221.64	0%	0%	\$0.15	0.00	0.00	AEG Research
Metal Mfg	Motors	Commissioning	employee	Existing	241.53	3	\$221.64	0%	0%	\$0.15	0.00	0.00	AEG Research
Metal Mfg	Process	Commissioning	employee	Existing	143.29	3	\$221.64	0%	0%	\$0.15	0.00	0.00	AEG Research
Metal Mfg	Miscellaneous	Commissioning	employee	Existing	32.11	3	\$221.64	0%	0%	\$0.15	0.00	0.00	AEG Research
Metal Mfg	Interior Lighting	Retrocommissioning	employee	Existing	29.33	3	\$140.70	5%	39%	\$0.10	1.83	2.62	AEG Research
Metal Mfg	Exterior Lighting	Retrocommissioning	employee	Existing	6.33	3	\$140.70	5%	39%	\$0.10	0.41	0.58	AEG Research
Metal Mfg	Motors	Retrocommissioning	employee	Existing	244.22	3	\$140.70	5%	39%	\$0.10	18.56	19.42	AEG Research
Metal Mfg	Process	Retrocommissioning	employee	Existing	144.85	3	\$140.70	5%	39%	\$0.10	10.40	11.59	AEG Research
Metal Mfg	Miscellaneous	Retrocommissioning	employee	Existing	32.51	3	\$140.70	5%	39%	\$0.10	3.22	2.50	AEG Research
Metal Mfg	Motors	Municipal Sewage Treatment	employee	Existing	17.71	12	\$10.18	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Metal Mfg	Motors	Municipal Water Supply Treatment	employee	Existing	0.00	12	\$0.00	0%	0%	\$0.00	0.00	0.00	7th Power Plan

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Metal Mfg	Cooling	Insulation - Ceiling	sqft	New	0.11	45	\$1.28	15%	25%	\$0.16	0.09	0.09	Building Energy Simulation Tool
Metal Mfg	Heating	Insulation - Ceiling	sqft	New	0.52	45	\$1.28	15%	25%	\$0.16	0.45	0.45	Building Energy Simulation Tool
Metal Mfg	Ventilation	Insulation - Ceiling	sqft	New	0.01	45	\$1.28	15%	25%	\$0.16	0.06	0.06	Building Energy Simulation Tool
Metal Mfg	Cooling	Insulation - Ducting	sqft	New	0.04	20	\$0.84	15%	25%	\$1.11	0.04	0.04	Building Energy Simulation Tool
Metal Mfg	Heating	Insulation - Ducting	sqft	New	0.02	20	\$0.84	15%	25%	\$1.11	0.02	0.02	Building Energy Simulation Tool
Metal Mfg	Ventilation	Insulation - Ducting	sqft	New	0.00	20	\$0.84	15%	25%	\$1.11	0.00	0.00	Building Energy Simulation Tool
Metal Mfg	Cooling	Insulation - Wall Cavity	sqft	New	0.00	45	\$0.15	45%	50%	\$0.02	0.00	0.00	Building Energy Simulation Tool
Metal Mfg	Heating	Insulation - Wall Cavity	sqft	New	0.71	45	\$0.15	45%	50%	\$0.02	0.31	0.31	Building Energy Simulation Tool
Metal Mfg	Ventilation	Insulation - Wall Cavity	sqft	New	0.01	45	\$0.15	45%	50%	\$0.02	0.04	0.04	Building Energy Simulation Tool
Metal Mfg	Cooling	HVAC - Duct Repair and Sealing	sqft	New	0.01	18	\$0.00	15%	25%	\$0.00	0.01	0.01	Building Energy Simulation Tool
Metal Mfg	Heating	HVAC - Duct Repair and Sealing	sqft	New	0.05	18	\$0.00	15%	25%	\$0.00	0.04	0.04	Building Energy Simulation Tool
Metal Mfg	Ventilation	HVAC - Duct Repair and Sealing	sqft	New	0.00	18	\$0.00	15%	25%	\$0.00	0.00	0.01	Building Energy Simulation Tool
Metal Mfg	Cooling	Chiller - Chilled Water Reset	sqft	New	0.04	10	\$0.01	15%	45%	\$0.03	0.01	0.01	AEG-BEST
Metal Mfg	Cooling	Chiller - Chilled Water Variable-Flow System	sqft	New	0.21	15	\$0.50	15%	60%	\$0.24	0.14	0.14	AEG-BEST
Metal Mfg	Cooling	Chiller - Variable Speed Fans	sqft	New	0.08	15	\$0.03	15%	75%	\$0.04	0.07	0.07	New Jersey TRM
Metal Mfg	Cooling	HVAC - Economizer	sqft	New	0.07	10	\$0.25	18%	30%	\$0.47	0.06	0.06	AEG-BEST
Metal Mfg	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.25	15%	35%	\$12.47	0.01	0.01	7th Power Plan
Metal Mfg	Cooling	Destratification Fans (HVLS)	sqft	New	0.14	15	\$0.63	15%	50%	\$0.05	0.28	0.29	AEG Research
Metal Mfg	Heating	Destratification Fans (HVLS)	sqft	New	1.30	15	\$0.63	15%	50%	\$0.05	2.75	2.76	AEG Research
Metal Mfg	Cooling	RTU - Maintenance	sqft	New	0.08	3	\$0.07	15%	75%	\$0.28	0.04	0.05	AEG Research
Metal Mfg	Cooling	Thermostat - WiFi/Interactive	sqft	New	0.26	5	\$0.66	5%	15%	\$0.09	0.03	0.03	7th Power Plan

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Metal Mfg	Heating	Thermostat - WiFi/Interactive	sqft	New	1.22	5	\$0.66	5%	15%	\$0.09	0.14	0.14	7th Power Plan
Metal Mfg	Ventilation	Thermostat - WiFi/Interactive	sqft	New	0.03	5	\$0.66	5%	15%	\$0.09	0.02	0.02	7th Power Plan
Metal Mfg	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.13	15	\$0.35	22%	41%	\$0.20	2.18	2.67	7th Power Plan
Metal Mfg	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.18	15	\$0.58	22%	41%	\$0.23	2.96	3.67	7th Power Plan
Metal Mfg	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	New	0.02	15	\$0.00	1%	2%	\$0.01	0.01	0.01	7th Power Plan
Metal Mfg	Interior Lighting	Interior Lighting - Timeclocks and Timers	sqft	New	0.00	8	\$0.00	7%	7%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Metal Mfg	Interior Lighting	Interior Lighting - Skylights	sqft	New	0.00	15	\$1.01	18%	24%	\$0.00	0.00	0.00	AEG Research
Metal Mfg	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	sqft	New	0.03	16	\$1.81	5%	40%	\$4.03	0.23	0.32	7th Power Plan
Metal Mfg	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	New	0.03	11	\$0.00	15%	50%	\$0.01	0.21	0.28	Illinois TRM
Metal Mfg	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	sqft	New	0.04	8	\$0.03	15%	25%	\$0.08	0.20	0.30	7th Power Plan
Metal Mfg	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	New	0.02	8	\$0.02	44%	60%	\$0.08	0.17	0.25	Pacific Gas and Electric Research
Metal Mfg	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	New	0.03	7	\$1.19	15%	30%	\$4.40	0.17	0.26	AEG Research
Metal Mfg	Process	Process - Conductivity Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Metal Mfg	Process	Process - Timers and Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Metal Mfg	Motors	Process - Timers and Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Metal Mfg	Process	Refrigeration - Floating Head Pressure	employee	New	13.01	15	\$9.43	20%	50%	\$0.08	0.22	0.22	RTF Workbook
Metal Mfg	Process	Refrigeration - System Optimization	employee	New	21.98	15	\$3.30	20%	50%	\$0.02	0.37	0.37	AEG Research
Metal Mfg	Motors	Pumping System - Equipment Upgrade	employee	New	140.42	10	\$20.26	9%	38%	\$0.02	1.86	1.86	7th Power Plan
Metal Mfg	Motors	Pumping System - System Optimization	employee	New	104.59	12	\$30.87	9%	38%	\$0.03	1.87	1.87	UNIDO Study on Industrial Energy Efficiency

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Metal Mfg	Motors	Pumping System - Variable Speed Drive	employee	New	103.91	10	\$32.12	9%	38%	\$0.04	1.67	1.66	UNIDO Study on Industrial Energy Efficiency
Metal Mfg	Motors	Fan System - Equipment Upgrade	employee	New	36.96	10	\$3.65	9%	38%	\$0.02	0.59	0.59	UNIDO Study on Industrial Energy Efficiency
Metal Mfg	Motors	Fan System - Flow Optimization	employee	New	43.64	10	\$6.04	9%	38%	\$0.02	0.70	0.70	UNIDO Study on Industrial Energy Efficiency
Metal Mfg	Motors	Fan System - Variable Speed Drive	employee	New	65.09	10	\$30.38	9%	38%	\$0.06	1.05	1.05	UNIDO Study on Industrial Energy Efficiency
Metal Mfg	Motors	Compressed Air - Equipment Upgrade	employee	New	251.96	10	\$18.33	17%	50%	\$0.01	3.88	3.88	7th Power Plan
Metal Mfg	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	New	0.00	15	\$0.00	16%	38%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Metal Mfg	Motors	Compressed Air - Refrigerated Cycling Dryers	employee	New	0.00	10	\$0.00	16%	30%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Metal Mfg	Motors	Compressed Air - System Controls	employee	New	56.20	10	\$13.11	9%	38%	\$0.03	0.74	0.75	UNIDO Study on Industrial Energy Efficiency
Metal Mfg	Motors	Compressed Air - Leak Management Program	employee	New	143.04	10	\$13.18	18%	75%	\$0.01	3.78	3.78	7th Power Plan
Metal Mfg	Motors	Compressed Air - Variable Speed Drive	employee	New	103.59	15	\$80.37	26%	45%	\$0.08	1.12	1.13	UNIDO Study on Industrial Energy Efficiency
Metal Mfg	Motors	Compressed Air - Low Pressure-Drop Filters	employee	New	3.45	10	\$1.24	17%	50%	\$0.05	0.05	0.05	Illinois TRM
Metal Mfg	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	New	21.14	10	\$4.02	17%	50%	\$0.03	0.33	0.33	UNIDO Study on Industrial Energy Efficiency
Metal Mfg	Motors	Compressed Air - Outside Air Intake	employee	New	0.00	20	\$0.00	17%	50%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Metal Mfg	Motors	Compressed Air - Receiver Capacity Addition	employee	New	21.01	15	\$11.05	17%	50%	\$0.06	0.40	0.40	UNIDO Study on Industrial Energy Efficiency
Metal Mfg	Motors	Material Handling - Variable Speed Drive	employee	New	631.39	10	\$222.10	25%	45%	\$0.05	7.11	7.10	7th Power Plan
Metal Mfg	Motors	Motors - Green Rewind (<100 HP)	employee	New	9.20	10	\$3.93	10%	50%	\$0.06	1.04	1.04	7th Power Plan
Metal Mfg	Motors	Motors - Green Rewind (100 HP+)	employee	New	5.19	10	\$1.40	6%	25%	\$0.04	0.28	0.28	7th Power Plan
Metal Mfg	Motors	Switch from Belt Drive to Direct Drive	employee	New	78.65	12	\$17.27	16%	25%	\$0.03	2.34	2.34	2015-mdu-irp-report---volume-iii.pdf
Metal Mfg	Motors	Motors - Synchronous Belts	employee	New	20.81	10	\$5.19	16%	36%	\$0.03	0.96	0.97	7th Power Plan

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Metal Mfg	Miscellaneous	Agriculture - Engine Block Timer	employee	New	257.70	3	\$3.18	0%	0%	\$0.00	0.00	0.00	Vermont TRM
Metal Mfg	Motors	Agriculture - Live Stock Waterer	employee	New	340.17	10	\$178.39	0%	0%	\$0.07	0.00	0.00	Ontario Power TRM
Metal Mfg	Process	Dairy - Milk Precoolers	employee	New	86.72	15	\$42.46	0%	0%	\$0.05	0.00	0.00	Ontario Power TRM
Metal Mfg	Process	Clean Room: Change Filter Strategy	employee	New	139.54	15	\$1.03	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Metal Mfg	Process	Clean Room: Chiller Optimize	employee	New	27.16	15	\$2.51	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Metal Mfg	Process	Clean Room: Clean Room HVAC	employee	New	16.47	15	\$3.04	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Metal Mfg	Process	Elec Chip Fab: Solidstate Chiller	employee	New	15.61	15	\$9.53	0%	0%	\$0.06	0.00	0.00	7th Power Plan
Metal Mfg	Process	Elec Chip Fab: Eliminate Exhaust	employee	New	16.51	15	\$3.70	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Metal Mfg	Process	Elec Chip Fab: Exhaust Injector	employee	New	33.02	15	\$17.86	0%	0%	\$0.05	0.00	0.00	7th Power Plan
Metal Mfg	Process	Elec Chip Fab: Reduce Gas Pressure	employee	New	34.89	15	\$0.36	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Metal Mfg	Motors	Panel: Hydraulic Press	employee	New	948.89	10	\$221.97	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Metal Mfg	Motors	Wood: Replace Pneumatic Conveyor	employee	New	1,008.33	10	\$16.62	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Metal Mfg	Process	Metal: New Arc Furnace	employee	New	931.48	10	\$97.87	15%	75%	-\$0.09	18.24	18.24	7th Power Plan
Metal Mfg	Process	Paper: Premium Control Large Material	employee	New	114.61	10	\$60.60	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Metal Mfg	Process	Paper: Efficient Pulp Screen	employee	New	91.85	10	\$19.96	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Metal Mfg	Process	Kraft: Effluent Treatment System	employee	New	96.94	10	\$8.18	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Metal Mfg	Motors	Kraft: Efficient Agitator	employee	New	1,716.08	10	\$165.64	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Metal Mfg	Process	Mech Pulp: Premium Process	employee	New	1.03	5	\$0.14	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Metal Mfg	Motors	Mech Pulp: Refiner Plate Improvement	employee	New	14.82	1	\$0.63	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Metal Mfg	Cooling	Transformer - High Efficiency	employee	New	11.75	10	\$25.26	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Metal Mfg	Heating	Transformer - High Efficiency	employee	New	54.92	10	\$25.26	15%	15%	\$0.02	0.00	0.00	7th Power Plan

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Metal Mfg	Ventilation	Transformer - High Efficiency	employee	New	1.13	10	\$25.26	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Metal Mfg	Interior Lighting	Transformer - High Efficiency	employee	New	8.29	10	\$25.26	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Metal Mfg	Exterior Lighting	Transformer - High Efficiency	employee	New	1.78	10	\$25.26	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Metal Mfg	Motors	Transformer - High Efficiency	employee	New	76.45	10	\$25.26	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Metal Mfg	Process	Transformer - High Efficiency	employee	New	45.90	10	\$25.26	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Metal Mfg	Miscellaneous	Transformer - High Efficiency	employee	New	9.24	10	\$25.26	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Metal Mfg	Cooling	Strategic Energy Management	employee	New	33.29	3	\$155.15	0%	5%	\$0.08	0.00	0.00	AEG Research
Metal Mfg	Heating	Strategic Energy Management	employee	New	158.09	3	\$155.15	0%	5%	\$0.08	0.01	0.01	AEG Research
Metal Mfg	Ventilation	Strategic Energy Management	employee	New	3.25	3	\$155.15	0%	5%	\$0.08	0.00	0.00	AEG Research
Metal Mfg	Interior Lighting	Strategic Energy Management	employee	New	23.12	3	\$155.15	0%	5%	\$0.08	0.01	0.01	AEG Research
Metal Mfg	Exterior Lighting	Strategic Energy Management	employee	New	5.14	3	\$155.15	0%	5%	\$0.08	0.00	0.00	AEG Research
Metal Mfg	Motors	Strategic Energy Management	employee	New	220.86	3	\$155.15	0%	5%	\$0.08	0.06	0.06	AEG Research
Metal Mfg	Process	Strategic Energy Management	employee	New	132.60	3	\$155.15	0%	5%	\$0.08	0.04	0.04	AEG Research
Metal Mfg	Miscellaneous	Strategic Energy Management	employee	New	26.69	3	\$155.15	0%	5%	\$0.08	0.01	0.01	AEG Research
Metal Mfg	Interior Lighting	Commissioning	employee	New	26.67	3	\$223.42	5%	39%	\$0.15	0.04	0.07	AEG Research
Metal Mfg	Exterior Lighting	Commissioning	employee	New	5.93	3	\$223.42	5%	39%	\$0.15	0.01	0.02	AEG Research
Metal Mfg	Motors	Commissioning	employee	New	254.77	3	\$223.42	5%	39%	\$0.15	0.46	0.47	AEG Research
Metal Mfg	Process	Commissioning	employee	New	152.96	3	\$223.42	5%	39%	\$0.15	0.28	0.28	AEG Research
Metal Mfg	Miscellaneous	Commissioning	employee	New	30.79	3	\$223.42	5%	39%	\$0.15	0.07	0.04	AEG Research
Metal Mfg	Interior Lighting	Retrocommissioning	employee	New	26.78	3	\$141.83	0%	0%	\$0.10	0.00	0.00	AEG Research

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Metal Mfg	Exterior Lighting	Retrocommissioning	employee	New	5.93	3	\$141.83	0%	0%	\$0.10	0.00	0.00	AEG Research
Metal Mfg	Motors	Retrocommissioning	employee	New	254.84	3	\$141.83	0%	0%	\$0.10	0.00	0.00	AEG Research
Metal Mfg	Process	Retrocommissioning	employee	New	153.00	3	\$141.83	0%	0%	\$0.10	0.00	0.00	AEG Research
Metal Mfg	Miscellaneous	Retrocommissioning	employee	New	30.80	3	\$141.83	0%	0%	\$0.10	0.00	0.00	AEG Research
Metal Mfg	Motors	Municipal Sewage Treatment	employee	New	18.44	12	\$10.18	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Metal Mfg	Motors	Municipal Water Supply Treatment	employee	New	0.00	12	\$0.00	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Misc. Mfg	Cooling	Insulation - Ceiling	sqft	Existing	0.12	45	\$1.28	15%	25%	\$0.14	3.18	3.42	Building Energy Simulation Tool
Misc. Mfg	Heating	Insulation - Ceiling	sqft	Existing	0.54	45	\$1.28	15%	25%	\$0.14	15.47	15.96	Building Energy Simulation Tool
Misc. Mfg	Ventilation	Insulation - Ceiling	sqft	Existing	0.02	45	\$1.28	15%	25%	\$0.14	2.17	2.59	Building Energy Simulation Tool
Misc. Mfg	Cooling	Insulation - Ducting	sqft	Existing	0.05	20	\$0.84	15%	25%	\$1.04	1.15	1.27	Building Energy Simulation Tool
Misc. Mfg	Heating	Insulation - Ducting	sqft	Existing	0.02	20	\$0.84	15%	25%	\$1.04	0.64	0.67	Building Energy Simulation Tool
Misc. Mfg	Ventilation	Insulation - Ducting	sqft	Existing	0.00	20	\$0.84	15%	25%	\$1.04	0.09	0.11	Building Energy Simulation Tool
Misc. Mfg	Cooling	Insulation - Wall Cavity	sqft	Existing	0.00	45	\$0.15	45%	50%	\$0.02	0.03	0.03	Building Energy Simulation Tool
Misc. Mfg	Heating	Insulation - Wall Cavity	sqft	Existing	0.76	45	\$0.15	45%	50%	\$0.02	11.13	11.17	Building Energy Simulation Tool
Misc. Mfg	Ventilation	Insulation - Wall Cavity	sqft	Existing	0.02	45	\$0.15	45%	50%	\$0.02	1.45	1.73	Building Energy Simulation Tool
Misc. Mfg	Cooling	HVAC - Duct Repair and Sealing	sqft	Existing	0.02	18	\$0.00	15%	25%	\$0.00	0.42	0.44	Building Energy Simulation Tool
Misc. Mfg	Heating	HVAC - Duct Repair and Sealing	sqft	Existing	0.05	18	\$0.00	15%	25%	\$0.00	1.57	1.57	Building Energy Simulation Tool
Misc. Mfg	Ventilation	HVAC - Duct Repair and Sealing	sqft	Existing	0.00	18	\$0.00	15%	25%	\$0.00	0.21	0.24	Building Energy Simulation Tool
Misc. Mfg	Cooling	Chiller - Chilled Water Reset	sqft	Existing	0.05	10	\$0.01	15%	45%	\$0.03	1.04	1.14	AEG-BEST
Misc. Mfg	Cooling	Chiller - Chilled Water Variable-Flow System	sqft	Existing	0.25	15	\$0.50	15%	60%	\$0.20	8.28	9.30	AEG-BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Misc. Mfg	Cooling	Chiller - Variable Speed Fans	sqft	Existing	0.09	15	\$0.03	15%	75%	\$0.03	4.26	4.62	New Jersey TRM
Misc. Mfg	Cooling	HVAC - Economizer	sqft	Existing	0.05	10	\$0.25	18%	30%	\$0.61	3.98	4.55	AEG-BEST
Misc. Mfg	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.25	15%	35%	\$10.43	0.64	0.82	7th Power Plan
Misc. Mfg	Cooling	Destratification Fans (HVLS)	sqft	Existing	0.16	15	\$0.63	15%	50%	\$0.04	15.72	17.07	AEG Research
Misc. Mfg	Heating	Destratification Fans (HVLS)	sqft	Existing	1.39	15	\$0.63	15%	50%	\$0.04	153.15	154.49	AEG Research
Misc. Mfg	Cooling	RTU - Maintenance	sqft	Existing	0.08	3	\$0.07	15%	75%	\$0.27	7.72	8.95	AEG Research
Misc. Mfg	Cooling	Thermostat - WiFi/Interactive	sqft	Existing	0.29	5	\$0.66	5%	15%	\$0.09	7.32	7.94	7th Power Plan
Misc. Mfg	Heating	Thermostat - WiFi/Interactive	sqft	Existing	1.27	5	\$0.66	5%	15%	\$0.09	36.30	37.61	7th Power Plan
Misc. Mfg	Ventilation	Thermostat - WiFi/Interactive	sqft	Existing	0.04	5	\$0.66	5%	15%	\$0.09	5.10	6.11	7th Power Plan
Misc. Mfg	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.10	15	\$0.35	7%	33%	\$0.28	55.71	70.37	7th Power Plan
Misc. Mfg	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.14	15	\$0.58	7%	33%	\$0.33	73.91	96.27	7th Power Plan
Misc. Mfg	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	Existing	0.02	15	\$0.00	1%	2%	\$0.01	0.28	0.41	7th Power Plan
Misc. Mfg	Interior Lighting	Interior Lighting - Timeclocks and Timers	sqft	Existing	0.00	8	\$0.00	7%	7%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Misc. Mfg	Interior Lighting	Interior Lighting - Skylights	sqft	Existing	0.00	15	\$1.01	15%	23%	\$0.00	0.00	0.00	AEG Research
Misc. Mfg	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	sqft	Existing	0.03	16	\$1.81	5%	40%	\$4.03	8.15	13.22	7th Power Plan
Misc. Mfg	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	Existing	0.04	11	\$0.00	15%	50%	\$0.01	9.30	13.30	Illinois TRM
Misc. Mfg	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	sqft	Existing	0.05	8	\$0.03	15%	25%	\$0.08	11.20	17.27	7th Power Plan
Misc. Mfg	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	Existing	0.03	8	\$0.02	33%	60%	\$0.08	15.55	24.68	Pacific Gas and Electric Research
Misc. Mfg	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	Existing	0.03	7	\$1.19	15%	30%	\$4.46	9.70	16.31	AEG Research
Misc. Mfg	Process	Process - Conductivity Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Misc. Mfg	Process	Process - Timers and Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Misc. Mfg	Motors	Process - Timers and Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Misc. Mfg	Process	Refrigeration - Floating Head Pressure	employee	Existing	137.99	15	\$134.64	20%	50%	\$0.11	8.53	8.55	RTF Workbook
Misc. Mfg	Process	Refrigeration - System Optimization	employee	Existing	221.83	15	\$94.81	20%	50%	\$0.05	13.72	13.72	AEG Research
Misc. Mfg	Motors	Pumping System - Equipment Upgrade	employee	Existing	934.96	10	\$138.22	9%	38%	\$0.02	54.81	56.46	7th Power Plan
Misc. Mfg	Motors	Pumping System - System Optimization	employee	Existing	688.76	12	\$210.65	9%	38%	\$0.03	39.12	40.51	UNIDO Study on Industrial Energy Efficiency
Misc. Mfg	Motors	Pumping System - Variable Speed Drive	employee	Existing	677.88	10	\$219.15	9%	38%	\$0.04	38.30	40.10	UNIDO Study on Industrial Energy Efficiency
Misc. Mfg	Motors	Fan System - Equipment Upgrade	employee	Existing	343.58	10	\$34.56	9%	38%	\$0.02	19.67	20.03	UNIDO Study on Industrial Energy Efficiency
Misc. Mfg	Motors	Fan System - Flow Optimization	employee	Existing	404.60	10	\$57.18	9%	38%	\$0.02	23.14	23.62	UNIDO Study on Industrial Energy Efficiency
Misc. Mfg	Motors	Fan System - Variable Speed Drive	employee	Existing	583.81	10	\$287.72	9%	38%	\$0.06	32.66	34.87	UNIDO Study on Industrial Energy Efficiency
Misc. Mfg	Motors	Compressed Air - Equipment Upgrade	employee	Existing	1,192.49	10	\$86.77	17%	50%	\$0.01	82.44	82.44	7th Power Plan
Misc. Mfg	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	Existing	0.00	15	\$0.00	16%	38%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Misc. Mfg	Motors	Compressed Air - Refrigerated Cycling Dryers	employee	Existing	0.00	10	\$0.00	16%	30%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Misc. Mfg	Motors	Compressed Air - System Controls	employee	Existing	255.50	10	\$62.04	9%	38%	\$0.03	14.86	15.63	UNIDO Study on Industrial Energy Efficiency
Misc. Mfg	Motors	Compressed Air - Leak Management Program	employee	Existing	670.61	10	\$62.37	18%	75%	\$0.02	79.17	80.06	7th Power Plan
Misc. Mfg	Motors	Compressed Air - Variable Speed Drive	employee	Existing	465.80	15	\$380.38	26%	45%	\$0.08	17.88	19.28	UNIDO Study on Industrial Energy Efficiency
Misc. Mfg	Motors	Compressed Air - Low Pressure-Drop Filters	employee	Existing	15.53	10	\$5.86	17%	50%	\$0.05	1.04	1.12	Illinois TRM
Misc. Mfg	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	Existing	96.65	10	\$19.02	17%	50%	\$0.03	6.58	6.86	UNIDO Study on Industrial Energy Efficiency
Misc. Mfg	Motors	Compressed Air - Outside Air Intake	employee	Existing	0.00	20	\$0.00	17%	50%	\$0.00	0.00	0.00	Michigan Energy Measures Database

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Misc. Mfg	Motors	Compressed Air - Receiver Capacity Addition	employee	Existing	95.12	15	\$52.30	17%	50%	\$0.06	6.44	6.81	UNIDO Study on Industrial Energy Efficiency
Misc. Mfg	Motors	Material Handling - Variable Speed Drive	employee	Existing	1,570.49	10	\$580.62	25%	45%	\$0.05	62.09	65.37	7th Power Plan
Misc. Mfg	Motors	Motors - Green Rewind (<100 HP)	employee	Existing	35.80	10	\$16.14	10%	50%	\$0.06	14.07	14.99	7th Power Plan
Misc. Mfg	Motors	Motors - Green Rewind (100 HP+)	employee	Existing	20.40	10	\$5.73	6%	25%	\$0.04	3.84	4.02	7th Power Plan
Misc. Mfg	Motors	Switch from Belt Drive to Direct Drive	employee	Existing	312.38	12	\$70.84	16%	25%	\$0.03	29.64	30.55	2015-mdu-irp-report---volume-iii.pdf
Misc. Mfg	Motors	Motors - Synchronous Belts	employee	Existing	81.88	10	\$21.31	16%	36%	\$0.03	16.65	17.55	7th Power Plan
Misc. Mfg	Miscellaneous	Agriculture - Engine Block Timer	employee	Existing	2,589.88	3	\$31.95	0%	0%	\$0.00	0.00	0.00	Vermont TRM
Misc. Mfg	Motors	Agriculture - Live Stock Waterer	employee	Existing	2,187.50	10	\$1,217.27	0%	0%	\$0.07	0.00	0.00	Ontario Power TRM
Misc. Mfg	Process	Dairy - Milk Precoolers	employee	Existing	919.93	15	\$428.45	0%	0%	\$0.05	0.00	0.00	Ontario Power TRM
Misc. Mfg	Process	Clean Room: Change Filter Strategy	employee	Existing	284.65	15	\$2.10	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Misc. Mfg	Process	Clean Room: Chiller Optimize	employee	Existing	274.02	15	\$25.37	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Misc. Mfg	Process	Clean Room: Clean Room HVAC	employee	Existing	166.37	15	\$30.62	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Misc. Mfg	Process	Elec Chip Fab: Solidstate Chiller	employee	Existing	165.59	15	\$96.19	0%	0%	\$0.05	0.00	0.00	7th Power Plan
Misc. Mfg	Process	Elec Chip Fab: Eliminate Exhaust	employee	Existing	35.58	15	\$7.55	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Misc. Mfg	Process	Elec Chip Fab: Exhaust Injector	employee	Existing	70.82	15	\$36.43	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Misc. Mfg	Process	Elec Chip Fab: Reduce Gas Pressure	employee	Existing	71.16	15	\$0.73	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Misc. Mfg	Motors	Panel: Hydraulic Press	employee	Existing	2,378.41	10	\$580.27	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Misc. Mfg	Motors	Wood: Replace Pneumatic Conveyor	employee	Existing	2,636.03	10	\$43.46	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Misc. Mfg	Process	Metal: New Arc Furnace	employee	Existing	3,168.39	10	\$332.59	0%	0%	-\$0.20	0.00	0.00	7th Power Plan
Misc. Mfg	Process	Paper: Premium Control Large Material	employee	Existing	454.26	10	\$229.00	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Misc. Mfg	Process	Paper: Efficient Pulp Screen	employee	Existing	366.66	10	\$75.43	0%	0%	\$0.03	0.00	0.00	7th Power Plan

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Misc. Mfg	Process	Kraft: Effluent Treatment System	employee	Existing	366.66	10	\$30.93	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Misc. Mfg	Motors	Kraft: Efficient Agitator	employee	Existing	4,403.42	10	\$433.02	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Misc. Mfg	Process	Mech Pulp: Premium Process	employee	Existing	4.08	5	\$0.53	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Misc. Mfg	Motors	Mech Pulp: Refiner Plate Improvement	employee	Existing	36.50	1	\$1.65	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Misc. Mfg	Cooling	Transformer - High Efficiency	employee	Existing	184.13	10	\$209.28	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Misc. Mfg	Heating	Transformer - High Efficiency	employee	Existing	818.04	10	\$209.28	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Misc. Mfg	Ventilation	Transformer - High Efficiency	employee	Existing	23.07	10	\$209.28	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Misc. Mfg	Interior Lighting	Transformer - High Efficiency	employee	Existing	97.35	10	\$209.28	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Misc. Mfg	Exterior Lighting	Transformer - High Efficiency	employee	Existing	19.86	10	\$209.28	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Misc. Mfg	Motors	Transformer - High Efficiency	employee	Existing	295.60	10	\$209.28	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Misc. Mfg	Process	Transformer - High Efficiency	employee	Existing	181.92	10	\$209.28	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Misc. Mfg	Miscellaneous	Transformer - High Efficiency	employee	Existing	98.02	10	\$209.28	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Misc. Mfg	Cooling	Strategic Energy Management	employee	Existing	505.01	3	\$1,285.31	0%	5%	\$0.08	0.84	0.93	AEG Research
Misc. Mfg	Heating	Strategic Energy Management	employee	Existing	2,338.75	3	\$1,285.31	0%	5%	\$0.08	4.39	4.59	AEG Research
Misc. Mfg	Ventilation	Strategic Energy Management	employee	Existing	66.00	3	\$1,285.31	0%	5%	\$0.08	0.62	0.75	AEG Research
Misc. Mfg	Interior Lighting	Strategic Energy Management	employee	Existing	261.72	3	\$1,285.31	0%	5%	\$0.08	1.99	2.87	AEG Research
Misc. Mfg	Exterior Lighting	Strategic Energy Management	employee	Existing	56.90	3	\$1,285.31	0%	5%	\$0.08	0.44	0.64	AEG Research
Misc. Mfg	Motors	Strategic Energy Management	employee	Existing	845.66	3	\$1,285.31	0%	5%	\$0.08	7.78	8.29	AEG Research
Misc. Mfg	Process	Strategic Energy Management	employee	Existing	520.31	3	\$1,285.31	0%	5%	\$0.08	4.95	5.01	AEG Research

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Misc. Mfg	Miscellaneous	Strategic Energy Management	employee	Existing	280.08	3	\$1,285.31	0%	5%	\$0.08	3.38	2.65	AEG Research
Misc. Mfg	Interior Lighting	Commissioning	employee	Existing	301.66	3	\$1,035.37	0%	0%	\$0.14	0.00	0.00	AEG Research
Misc. Mfg	Exterior Lighting	Commissioning	employee	Existing	65.58	3	\$1,035.37	0%	0%	\$0.14	0.00	0.00	AEG Research
Misc. Mfg	Motors	Commissioning	employee	Existing	974.56	3	\$1,035.37	0%	0%	\$0.14	0.00	0.00	AEG Research
Misc. Mfg	Process	Commissioning	employee	Existing	599.59	3	\$1,035.37	0%	0%	\$0.14	0.00	0.00	AEG Research
Misc. Mfg	Miscellaneous	Commissioning	employee	Existing	322.72	3	\$1,035.37	0%	0%	\$0.14	0.00	0.00	AEG Research
Misc. Mfg	Interior Lighting	Retrocommissioning	employee	Existing	306.55	3	\$657.27	5%	39%	\$0.09	15.99	22.80	AEG Research
Misc. Mfg	Exterior Lighting	Retrocommissioning	employee	Existing	66.21	3	\$657.27	5%	39%	\$0.09	3.54	5.07	AEG Research
Misc. Mfg	Motors	Retrocommissioning	employee	Existing	985.34	3	\$657.27	5%	39%	\$0.09	62.14	65.56	AEG Research
Misc. Mfg	Process	Retrocommissioning	employee	Existing	606.41	3	\$657.27	5%	39%	\$0.09	39.48	39.61	AEG Research
Misc. Mfg	Miscellaneous	Retrocommissioning	employee	Existing	326.74	3	\$657.27	5%	39%	\$0.09	26.98	20.97	AEG Research
Misc. Mfg	Motors	Municipal Sewage Treatment	employee	Existing	119.30	12	\$69.49	0%	0%	\$0.06	0.00	0.00	7th Power Plan
Misc. Mfg	Motors	Municipal Water Supply Treatment	employee	Existing	0.00	12	\$0.00	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Misc. Mfg	Cooling	Insulation - Ceiling	sqft	New	0.11	45	\$1.28	15%	25%	\$0.16	1.10	1.12	Building Energy Simulation Tool
Misc. Mfg	Heating	Insulation - Ceiling	sqft	New	0.52	45	\$1.28	15%	25%	\$0.16	5.44	5.44	Building Energy Simulation Tool
Misc. Mfg	Ventilation	Insulation - Ceiling	sqft	New	0.01	45	\$1.28	15%	25%	\$0.16	0.66	0.73	Building Energy Simulation Tool
Misc. Mfg	Cooling	Insulation - Ducting	sqft	New	0.04	20	\$0.84	15%	25%	\$1.11	0.42	0.43	Building Energy Simulation Tool
Misc. Mfg	Heating	Insulation - Ducting	sqft	New	0.02	20	\$0.84	15%	25%	\$1.11	0.23	0.23	Building Energy Simulation Tool
Misc. Mfg	Ventilation	Insulation - Ducting	sqft	New	0.00	20	\$0.84	15%	25%	\$1.11	0.03	0.03	Building Energy Simulation Tool
Misc. Mfg	Cooling	Insulation - Wall Cavity	sqft	New	0.00	45	\$0.15	45%	50%	\$0.02	0.01	0.01	Building Energy Simulation Tool
Misc. Mfg	Heating	Insulation - Wall Cavity	sqft	New	0.71	45	\$0.15	45%	50%	\$0.02	3.73	3.73	Building Energy Simulation Tool
Misc. Mfg	Ventilation	Insulation - Wall Cavity	sqft	New	0.01	45	\$0.15	45%	50%	\$0.02	0.44	0.49	Building Energy Simulation Tool

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Misc. Mfg	Cooling	HVAC - Duct Repair and Sealing	sqft	New	0.01	18	\$0.00	15%	25%	\$0.00	0.13	0.13	Building Energy Simulation Tool
Misc. Mfg	Heating	HVAC - Duct Repair and Sealing	sqft	New	0.05	18	\$0.00	15%	25%	\$0.00	0.48	0.49	Building Energy Simulation Tool
Misc. Mfg	Ventilation	HVAC - Duct Repair and Sealing	sqft	New	0.00	18	\$0.00	15%	25%	\$0.00	0.06	0.06	Building Energy Simulation Tool
Misc. Mfg	Cooling	Chiller - Chilled Water Reset	sqft	New	0.04	10	\$0.01	15%	45%	\$0.03	0.17	0.17	AEG-BEST
Misc. Mfg	Cooling	Chiller - Chilled Water Variable-Flow System	sqft	New	0.21	15	\$0.50	15%	60%	\$0.24	1.66	1.74	AEG-BEST
Misc. Mfg	Cooling	Chiller - Variable Speed Fans	sqft	New	0.08	15	\$0.03	15%	75%	\$0.04	0.83	0.86	New Jersey TRM
Misc. Mfg	Cooling	HVAC - Economizer	sqft	New	0.05	10	\$0.25	18%	30%	\$0.66	0.72	0.75	AEG-BEST
Misc. Mfg	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.25	15%	35%	\$12.47	0.13	0.15	7th Power Plan
Misc. Mfg	Cooling	Destratification Fans (HVLS)	sqft	New	0.14	15	\$0.63	15%	50%	\$0.05	3.39	3.53	AEG Research
Misc. Mfg	Heating	Destratification Fans (HVLS)	sqft	New	1.30	15	\$0.63	15%	50%	\$0.05	32.90	33.01	AEG Research
Misc. Mfg	Cooling	RTU - Maintenance	sqft	New	0.08	3	\$0.07	15%	75%	\$0.28	0.52	0.56	AEG Research
Misc. Mfg	Cooling	Thermostat - WiFi/Interactive	sqft	New	0.26	5	\$0.66	5%	15%	\$0.09	0.33	0.35	7th Power Plan
Misc. Mfg	Heating	Thermostat - WiFi/Interactive	sqft	New	1.22	5	\$0.66	5%	15%	\$0.09	1.65	1.68	7th Power Plan
Misc. Mfg	Ventilation	Thermostat - WiFi/Interactive	sqft	New	0.03	5	\$0.66	5%	15%	\$0.09	0.20	0.24	7th Power Plan
Misc. Mfg	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.09	15	\$0.35	22%	41%	\$0.28	18.99	23.32	7th Power Plan
Misc. Mfg	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.13	15	\$0.58	22%	41%	\$0.33	25.82	32.03	7th Power Plan
Misc. Mfg	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	New	0.02	15	\$0.00	1%	2%	\$0.01	0.05	0.08	7th Power Plan
Misc. Mfg	Interior Lighting	Interior Lighting - Timeclocks and Timers	sqft	New	0.00	8	\$0.00	7%	7%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Misc. Mfg	Interior Lighting	Interior Lighting - Skylights	sqft	New	0.00	15	\$1.01	18%	24%	\$0.00	0.00	0.00	AEG Research
Misc. Mfg	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	sqft	New	0.03	16	\$1.81	5%	40%	\$4.03	2.03	2.77	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Misc. Mfg	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	New	0.03	11	\$0.00	15%	50%	\$0.01	1.81	2.45	Illinois TRM
Misc. Mfg	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	sqft	New	0.04	8	\$0.03	15%	25%	\$0.08	1.71	2.57	7th Power Plan
Misc. Mfg	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	New	0.02	8	\$0.02	44%	60%	\$0.08	1.45	2.18	Pacific Gas and Electric Research
Misc. Mfg	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	New	0.03	7	\$1.19	15%	30%	\$4.40	1.46	2.23	AEG Research
Misc. Mfg	Process	Process - Conductivity Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Misc. Mfg	Process	Process - Timers and Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Misc. Mfg	Motors	Process - Timers and Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Misc. Mfg	Process	Refrigeration - Floating Head Pressure	employee	New	138.30	15	\$95.16	20%	50%	\$0.08	1.95	1.95	RTF Workbook
Misc. Mfg	Process	Refrigeration - System Optimization	employee	New	221.83	15	\$33.27	20%	50%	\$0.02	3.13	3.13	AEG Research
Misc. Mfg	Motors	Pumping System - Equipment Upgrade	employee	New	953.93	10	\$138.22	9%	38%	\$0.02	10.54	10.54	7th Power Plan
Misc. Mfg	Motors	Pumping System - System Optimization	employee	New	708.94	12	\$210.65	9%	38%	\$0.03	10.59	10.56	UNIDO Study on Industrial Energy Efficiency
Misc. Mfg	Motors	Pumping System - Variable Speed Drive	employee	New	702.92	10	\$219.15	9%	38%	\$0.04	9.42	9.40	UNIDO Study on Industrial Energy Efficiency
Misc. Mfg	Motors	Fan System - Equipment Upgrade	employee	New	349.35	10	\$34.56	9%	38%	\$0.02	4.67	4.66	UNIDO Study on Industrial Energy Efficiency
Misc. Mfg	Motors	Fan System - Flow Optimization	employee	New	412.04	10	\$57.18	9%	38%	\$0.02	5.51	5.50	UNIDO Study on Industrial Energy Efficiency
Misc. Mfg	Motors	Fan System - Variable Speed Drive	employee	New	612.39	10	\$287.72	9%	38%	\$0.06	8.22	8.21	UNIDO Study on Industrial Energy Efficiency
Misc. Mfg	Motors	Compressed Air - Equipment Upgrade	employee	New	1,192.49	10	\$86.77	17%	50%	\$0.01	15.31	15.31	7th Power Plan
Misc. Mfg	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	New	0.00	15	\$0.00	16%	38%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Misc. Mfg	Motors	Compressed Air - Refrigerated Cycling Dryers	employee	New	0.00	10	\$0.00	16%	30%	\$0.00	0.00	0.00	Michigan Energy Measures Database

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Misc. Mfg	Motors	Compressed Air - System Controls	employee	New	263.79	10	\$62.04	9%	38%	\$0.03	2.92	2.93	UNIDO Study on Industrial Energy Efficiency
Misc. Mfg	Motors	Compressed Air - Leak Management Program	employee	New	676.29	10	\$62.37	18%	75%	\$0.02	14.91	14.90	7th Power Plan
Misc. Mfg	Motors	Compressed Air - Variable Speed Drive	employee	New	487.15	15	\$380.38	26%	45%	\$0.08	4.41	4.43	UNIDO Study on Industrial Energy Efficiency
Misc. Mfg	Motors	Compressed Air - Low Pressure-Drop Filters	employee	New	16.24	10	\$5.86	17%	50%	\$0.05	0.21	0.21	Illinois TRM
Misc. Mfg	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	New	99.41	10	\$19.02	17%	50%	\$0.03	1.28	1.28	UNIDO Study on Industrial Energy Efficiency
Misc. Mfg	Motors	Compressed Air - Outside Air Intake	employee	New	0.00	20	\$0.00	17%	50%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Misc. Mfg	Motors	Compressed Air - Receiver Capacity Addition	employee	New	98.61	15	\$52.30	17%	50%	\$0.06	1.56	1.56	UNIDO Study on Industrial Energy Efficiency
Misc. Mfg	Motors	Material Handling - Variable Speed Drive	employee	New	1,633.71	10	\$580.62	25%	45%	\$0.05	15.37	15.35	7th Power Plan
Misc. Mfg	Motors	Motors - Green Rewind (<100 HP)	employee	New	37.51	10	\$16.14	10%	50%	\$0.06	3.53	3.53	7th Power Plan
Misc. Mfg	Motors	Motors - Green Rewind (100 HP+)	employee	New	21.12	10	\$5.73	6%	25%	\$0.04	0.94	0.94	7th Power Plan
Misc. Mfg	Motors	Switch from Belt Drive to Direct Drive	employee	New	320.57	12	\$70.84	16%	25%	\$0.03	7.98	7.95	2015-mdu-irp-report---volume-iii.pdf
Misc. Mfg	Motors	Motors - Synchronous Belts	employee	New	84.67	10	\$21.31	16%	36%	\$0.03	3.28	3.29	7th Power Plan
Misc. Mfg	Miscellaneous	Agriculture - Engine Block Timer	employee	New	2,589.88	3	\$31.95	0%	0%	\$0.00	0.00	0.00	Vermont TRM
Misc. Mfg	Motors	Agriculture - Live Stock Waterer	employee	New	2,301.00	10	\$1,217.27	0%	0%	\$0.07	0.00	0.00	Ontario Power TRM
Misc. Mfg	Process	Dairy - Milk Precoolers	employee	New	922.02	15	\$428.45	0%	0%	\$0.05	0.00	0.00	Ontario Power TRM
Misc. Mfg	Process	Clean Room: Change Filter Strategy	employee	New	284.65	15	\$2.10	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Misc. Mfg	Process	Clean Room: Chiller Optimize	employee	New	274.02	15	\$25.37	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Misc. Mfg	Process	Clean Room: Clean Room HVAC	employee	New	165.96	15	\$30.62	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Misc. Mfg	Process	Elec Chip Fab: Solidstate Chiller	employee	New	165.96	15	\$96.19	0%	0%	\$0.05	0.00	0.00	7th Power Plan
Misc. Mfg	Process	Elec Chip Fab: Eliminate Exhaust	employee	New	35.49	15	\$7.55	0%	0%	\$0.02	0.00	0.00	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Misc. Mfg	Process	Elec Chip Fab: Exhaust Injector	employee	New	70.99	15	\$36.43	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Misc. Mfg	Process	Elec Chip Fab: Reduce Gas Pressure	employee	New	71.16	15	\$0.73	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Misc. Mfg	Motors	Panel: Hydraulic Press	employee	New	2,459.48	10	\$580.27	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Misc. Mfg	Motors	Wood: Replace Pneumatic Conveyor	employee	New	2,636.03	10	\$43.46	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Misc. Mfg	Process	Metal: New Arc Furnace	employee	New	3,160.58	10	\$332.59	0%	0%	-\$0.20	0.00	0.00	7th Power Plan
Misc. Mfg	Process	Paper: Premium Control Large Material	employee	New	455.94	10	\$229.00	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Misc. Mfg	Process	Paper: Efficient Pulp Screen	employee	New	365.75	10	\$75.43	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Misc. Mfg	Process	Kraft: Effluent Treatment System	employee	New	365.75	10	\$30.93	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Misc. Mfg	Motors	Kraft: Efficient Agitator	employee	New	4,477.32	10	\$433.02	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Misc. Mfg	Process	Mech Pulp: Premium Process	employee	New	4.09	5	\$0.53	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Misc. Mfg	Motors	Mech Pulp: Refiner Plate Improvement	employee	New	38.39	1	\$1.65	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Misc. Mfg	Cooling	Transformer - High Efficiency	employee	New	168.75	10	\$201.43	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Misc. Mfg	Heating	Transformer - High Efficiency	employee	New	788.50	10	\$201.43	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Misc. Mfg	Ventilation	Transformer - High Efficiency	employee	New	16.23	10	\$201.43	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Misc. Mfg	Interior Lighting	Transformer - High Efficiency	employee	New	88.58	10	\$201.43	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Misc. Mfg	Exterior Lighting	Transformer - High Efficiency	employee	New	18.60	10	\$201.43	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Misc. Mfg	Motors	Transformer - High Efficiency	employee	New	310.94	10	\$201.43	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Misc. Mfg	Process	Transformer - High Efficiency	employee	New	182.60	10	\$201.43	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Misc. Mfg	Miscellaneous	Transformer - High Efficiency	employee	New	92.85	10	\$201.43	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Misc. Mfg	Cooling	Strategic Energy Management	employee	New	477.94	3	\$1,237.09	0%	5%	\$0.08	0.02	0.02	AEG Research
Misc. Mfg	Heating	Strategic Energy Management	employee	New	2,269.91	3	\$1,237.09	0%	5%	\$0.08	0.10	0.10	AEG Research

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Misc. Mfg	Ventilation	Strategic Energy Management	employee	New	46.73	3	\$1,237.09	0%	5%	\$0.08	0.01	0.02	AEG Research
Misc. Mfg	Interior Lighting	Strategic Energy Management	employee	New	241.66	3	\$1,237.09	0%	5%	\$0.08	0.05	0.08	AEG Research
Misc. Mfg	Exterior Lighting	Strategic Energy Management	employee	New	53.74	3	\$1,237.09	0%	5%	\$0.08	0.01	0.02	AEG Research
Misc. Mfg	Motors	Strategic Energy Management	employee	New	898.27	3	\$1,237.09	0%	5%	\$0.08	0.20	0.20	AEG Research
Misc. Mfg	Process	Strategic Energy Management	employee	New	527.50	3	\$1,237.09	0%	5%	\$0.08	0.12	0.12	AEG Research
Misc. Mfg	Miscellaneous	Strategic Energy Management	employee	New	268.23	3	\$1,237.09	0%	5%	\$0.08	0.07	0.05	AEG Research
Misc. Mfg	Interior Lighting	Commissioning	employee	New	278.77	3	\$1,054.03	5%	39%	\$0.14	0.38	0.63	AEG Research
Misc. Mfg	Exterior Lighting	Commissioning	employee	New	62.00	3	\$1,054.03	5%	39%	\$0.14	0.09	0.15	AEG Research
Misc. Mfg	Motors	Commissioning	employee	New	1,036.21	3	\$1,054.03	5%	39%	\$0.14	1.55	1.60	AEG Research
Misc. Mfg	Process	Commissioning	employee	New	608.50	3	\$1,054.03	5%	39%	\$0.14	0.90	0.91	AEG Research
Misc. Mfg	Miscellaneous	Commissioning	employee	New	309.42	3	\$1,054.03	5%	39%	\$0.14	0.57	0.36	AEG Research
Misc. Mfg	Interior Lighting	Retrocommissioning	employee	New	279.82	3	\$669.12	0%	0%	\$0.09	0.00	0.00	AEG Research
Misc. Mfg	Exterior Lighting	Retrocommissioning	employee	New	62.01	3	\$669.12	0%	0%	\$0.09	0.00	0.00	AEG Research
Misc. Mfg	Motors	Retrocommissioning	employee	New	1,036.46	3	\$669.12	0%	0%	\$0.09	0.00	0.00	AEG Research
Misc. Mfg	Process	Retrocommissioning	employee	New	608.65	3	\$669.12	0%	0%	\$0.09	0.00	0.00	AEG Research
Misc. Mfg	Miscellaneous	Retrocommissioning	employee	New	309.49	3	\$669.12	0%	0%	\$0.09	0.00	0.00	AEG Research
Misc. Mfg	Motors	Municipal Sewage Treatment	employee	New	124.99	12	\$69.49	0%	0%	\$0.06	0.00	0.00	7th Power Plan
Misc. Mfg	Motors	Municipal Water Supply Treatment	employee	New	0.00	12	\$0.00	0%	0%	\$0.00	0.00	0.00	7th Power Plan

Utah Industrial Measures Assumptions

Table H-13 Comparison of 7th Plan and RTF Industrial Measures in Utah

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Agriculture	Cooling	Air-Cooled Chiller	1 kBTU/hr	Existing	20.95	20	\$26.36	3%	at stock turnover	\$0.09	27.94	27.94	Annual Energy Outlook, 2015
Agriculture	Cooling	Water-Cooled Chiller	1 kBTU/hr	Existing	28.62	25	\$12.65	3%	at stock turnover	\$0.03	38.17	38.17	Annual Energy Outlook, 2015
Agriculture	Cooling	RTU	1 kBTU/hr	Existing	3.29	15	\$6.75	12%	at stock turnover	\$0.18	24.92	24.92	Annual Energy Outlook, 2015
Agriculture	Cooling	Air-Source Heat Pump	1 kBTU/hr	Existing	6.34	15	\$21.65	2%	at stock turnover	\$0.18	5.08	5.08	Annual Energy Outlook, 2015
Agriculture	Heating	Air-Source Heat Pump	1 kBTU/hr	Existing	4.27	15	\$21.65	2%	at stock turnover	\$0.18	3.42	3.42	Annual Energy Outlook, 2015
Agriculture	Cooling	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Agriculture	Heating	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Agriculture	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	3%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Agriculture	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	16%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Agriculture	Ventilation	Ventilation	1000 CFM	Existing	2,269.39	20	\$1,219.71	100%	at stock turnover	\$0.04	111.55	111.55	AEG-BEST
Agriculture	Interior Lighting	Screw-in	lamps	Existing	37.14	8	\$4.05	100%	at stock turnover	\$0.02	43.07	81.46	7th Power Plan
Agriculture	Interior Lighting	High-Bay Fixtures	lamps	Existing	378.07	15	\$127.03	100%	at stock turnover	\$0.03	1,095.82	1,008.82	Annual Energy Outlook, 2015
Agriculture	Interior Lighting	Linear Lighting	lamps	Existing	55.29	17	\$54.19	100%	at stock turnover	\$0.08	209.81	199.70	7th Power Plan
Agriculture	Exterior Lighting	Screw-in	lamps	Existing	37.14	8	\$4.05	100%	at stock turnover	\$0.02	13.18	24.93	7th Power Plan
Agriculture	Exterior Lighting	Area Lighting	lamps	Existing	593.44	15	\$45.69	100%	at stock turnover	\$0.01	284.95	269.92	Annual Energy Outlook, 2015
Agriculture	Exterior Lighting	Linear Lighting	lamps	Existing	55.29	17	\$54.19	100%	at stock turnover	\$0.08	56.70	53.97	7th Power Plan
Agriculture	Motors	Pumps	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Agriculture	Motors	Fans & Blowers	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Agriculture	Motors	Compressed Air	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Agriculture	Motors	Material Handling	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Agriculture	Motors	Other Motors	1 unit	Existing	0.00	10	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	N/A
Agriculture	Process	Process Heating	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Agriculture	Process	Process Cooling	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Agriculture	Process	Process Refrigeration	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Agriculture	Process	Process Electrochemical	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Agriculture	Process	Process Other	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Agriculture	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Agriculture	Cooling	Air-Cooled Chiller	1 kBTU/hr	New	18.03	20	\$26.36	3%	at stock turnover	\$0.11	37.32	37.32	Annual Energy Outlook, 2015
Agriculture	Cooling	Water-Cooled Chiller	1 kBTU/hr	New	24.90	25	\$12.65	3%	at stock turnover	\$0.03	47.14	47.14	Annual Energy Outlook, 2015
Agriculture	Cooling	RTU	1 kBTU/hr	New	3.20	15	\$6.75	12%	at stock turnover	\$0.18	29.71	29.71	Annual Energy Outlook, 2015
Agriculture	Cooling	Air-Source Heat Pump	1 kBTU/hr	New	6.16	15	\$21.65	2%	at stock turnover	\$0.18	6.43	6.43	Annual Energy Outlook, 2015
Agriculture	Heating	Air-Source Heat Pump	1 kBTU/hr	New	4.09	15	\$21.65	2%	at stock turnover	\$0.18	4.27	4.27	Annual Energy Outlook, 2015
Agriculture	Cooling	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Agriculture	Heating	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Agriculture	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	3%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Agriculture	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	16%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Agriculture	Ventilation	Ventilation	1000 CFM	New	1,964.09	20	\$1,219.71	100%	at stock turnover	\$0.05	128.59	128.59	AEG-BEST
Agriculture	Interior Lighting	Screw-in	lamps	New	37.18	8	\$4.05	100%	at stock turnover	\$0.02	45.70	48.77	7th Power Plan
Agriculture	Interior Lighting	High-Bay Fixtures	lamps	New	378.61	15	\$127.03	100%	at stock turnover	\$0.03	1,368.14	1,315.90	Annual Energy Outlook, 2015
Agriculture	Interior Lighting	Linear Lighting	lamps	New	55.29	17	\$54.19	100%	at stock turnover	\$0.08	217.97	213.16	7th Power Plan
Agriculture	Exterior Lighting	Screw-in	lamps	New	37.18	8	\$4.05	100%	at stock turnover	\$0.02	13.98	14.93	7th Power Plan
Agriculture	Exterior Lighting	Area Lighting	lamps	New	593.44	15	\$45.69	100%	at stock turnover	\$0.01	353.35	344.32	Annual Energy Outlook, 2015
Agriculture	Exterior Lighting	Linear Lighting	lamps	New	55.29	17	\$54.19	100%	at stock turnover	\$0.08	58.91	57.61	7th Power Plan
Agriculture	Motors	Pumps	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Agriculture	Motors	Fans & Blowers	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Agriculture	Motors	Compressed Air	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Agriculture	Motors	Material Handling	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Agriculture	Motors	Other Motors	1 unit	New	0.00	10	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	N/A
Agriculture	Process	Process Heating	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Agriculture	Process	Process Cooling	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Agriculture	Process	Process Refrigeration	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Agriculture	Process	Process Electrochemical	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Agriculture	Process	Process Other	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Agriculture	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Mining and Extraction	Cooling	Air-Cooled Chiller	1 kBTU/hr	Existing	20.95	20	\$26.36	3%	at stock turnover	\$0.09	221.10	221.10	Annual Energy Outlook, 2015

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Mining and Extraction	Cooling	Water-Cooled Chiller	1 kBTU/hr	Existing	28.62	25	\$12.65	3%	at stock turnover	\$0.03	302.05	302.05	Annual Energy Outlook, 2015
Mining and Extraction	Cooling	RTU	1 kBTU/hr	Existing	3.29	15	\$6.75	12%	at stock turnover	\$0.18	197.25	197.25	Annual Energy Outlook, 2015
Mining and Extraction	Cooling	Air-Source Heat Pump	1 kBTU/hr	Existing	6.34	15	\$21.65	2%	at stock turnover	\$0.18	40.18	40.18	Annual Energy Outlook, 2015
Mining and Extraction	Heating	Air-Source Heat Pump	1 kBTU/hr	Existing	4.27	15	\$21.65	2%	at stock turnover	\$0.18	27.04	27.04	Annual Energy Outlook, 2015
Mining and Extraction	Cooling	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Mining and Extraction	Heating	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Mining and Extraction	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	3%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Mining and Extraction	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	16%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Mining and Extraction	Ventilation	Ventilation	1000 CFM	Existing	2,269.39	20	\$1,219.71	100%	at stock turnover	\$0.04	882.81	882.81	AEG-BEST
Mining and Extraction	Interior Lighting	Screw-in	lamps	Existing	36.23	8	\$4.05	100%	at stock turnover	\$0.02	519.05	981.73	7th Power Plan
Mining and Extraction	Interior Lighting	High-Bay Fixtures	lamps	Existing	191.34	15	\$127.03	100%	at stock turnover	\$0.06	13,205.86	12,157.46	Annual Energy Outlook, 2015
Mining and Extraction	Interior Lighting	Linear Lighting	lamps	Existing	28.60	17	\$54.19	100%	at stock turnover	\$0.15	2,528.50	2,406.60	7th Power Plan
Mining and Extraction	Exterior Lighting	Screw-in	lamps	Existing	206.91	8	\$4.05	100%	at stock turnover	\$0.00	158.85	300.44	7th Power Plan
Mining and Extraction	Exterior Lighting	Area Lighting	lamps	Existing	2,507.81	15	\$45.69	100%	at stock turnover	\$0.00	3,433.95	3,252.84	Annual Energy Outlook, 2015
Mining and Extraction	Exterior Lighting	Linear Lighting	lamps	Existing	196.34	17	\$54.19	100%	at stock turnover	\$0.02	683.33	650.39	7th Power Plan
Mining and Extraction	Motors	Pumps	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Mining and Extraction	Motors	Fans & Blowers	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Mining and Extraction	Motors	Compressed Air	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Mining and Extraction	Motors	Material Handling	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Mining and Extraction	Motors	Other Motors	1 unit	Existing	0.00	10	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	N/A
Mining and Extraction	Process	Process Heating	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Mining and Extraction	Process	Process Cooling	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Mining and Extraction	Process	Process Refrigeration	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Mining and Extraction	Process	Process Electrochemical	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Mining and Extraction	Process	Process Other	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Mining and Extraction	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Mining and Extraction	Cooling	Air-Cooled Chiller	1 kBTU/hr	New	18.03	20	\$26.36	3%	at stock turnover	\$0.11	295.29	295.29	Annual Energy Outlook, 2015
Mining and Extraction	Cooling	Water-Cooled Chiller	1 kBTU/hr	New	24.90	25	\$12.65	3%	at stock turnover	\$0.03	373.04	373.04	Annual Energy Outlook, 2015
Mining and Extraction	Cooling	RTU	1 kBTU/hr	New	3.20	15	\$6.75	12%	at stock turnover	\$0.18	235.06	235.06	Annual Energy Outlook, 2015
Mining and Extraction	Cooling	Air-Source Heat Pump	1 kBTU/hr	New	6.16	15	\$21.65	2%	at stock turnover	\$0.18	50.86	50.86	Annual Energy Outlook, 2015
Mining and Extraction	Heating	Air-Source Heat Pump	1 kBTU/hr	New	4.09	15	\$21.65	2%	at stock turnover	\$0.18	33.78	33.78	Annual Energy Outlook, 2015
Mining and Extraction	Cooling	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Mining and Extraction	Heating	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Mining and Extraction	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	3%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Mining and Extraction	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	16%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Mining and Extraction	Ventilation	Ventilation	1000 CFM	New	1,964.09	20	\$1,219.71	100%	at stock turnover	\$0.05	1,017.41	1,017.41	AEG-BEST
Mining and Extraction	Interior Lighting	Screw-in	lamps	New	36.27	8	\$4.05	100%	at stock turnover	\$0.02	550.54	587.51	7th Power Plan
Mining and Extraction	Interior Lighting	High-Bay Fixtures	lamps	New	191.61	15	\$127.03	100%	at stock turnover	\$0.06	16,483.81	15,854.30	Annual Energy Outlook, 2015

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Mining and Extraction	Interior Lighting	Linear Lighting	lamps	New	28.60	17	\$54.19	100%	at stock turnover	\$0.15	2,625.86	2,567.90	7th Power Plan
Mining and Extraction	Exterior Lighting	Screw-in	lamps	New	207.12	8	\$4.05	100%	at stock turnover	\$0.00	168.48	179.80	7th Power Plan
Mining and Extraction	Exterior Lighting	Area Lighting	lamps	New	2,507.81	15	\$45.69	100%	at stock turnover	\$0.00	4,257.28	4,148.54	Annual Energy Outlook, 2015
Mining and Extraction	Exterior Lighting	Linear Lighting	lamps	New	196.34	17	\$54.19	100%	at stock turnover	\$0.02	709.64	693.98	7th Power Plan
Mining and Extraction	Motors	Pumps	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Mining and Extraction	Motors	Fans & Blowers	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Mining and Extraction	Motors	Compressed Air	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Mining and Extraction	Motors	Material Handling	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Mining and Extraction	Motors	Other Motors	1 unit	New	0.00	10	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	N/A
Mining and Extraction	Process	Process Heating	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Mining and Extraction	Process	Process Cooling	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Mining and Extraction	Process	Process Refrigeration	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Mining and Extraction	Process	Process Electrochemical	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Mining and Extraction	Process	Process Other	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Mining and Extraction	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Food Mfg	Cooling	Air-Cooled Chiller	1 kBTU/hr	Existing	20.95	20	\$26.36	3%	at stock turnover	\$0.09	45.39	45.39	Annual Energy Outlook, 2015
Food Mfg	Cooling	Water-Cooled Chiller	1 kBTU/hr	Existing	28.62	25	\$12.65	3%	at stock turnover	\$0.03	62.01	62.01	Annual Energy Outlook, 2015
Food Mfg	Cooling	RTU	1 kBTU/hr	Existing	3.29	15	\$6.75	12%	at stock turnover	\$0.18	40.50	40.50	Annual Energy Outlook, 2015
Food Mfg	Cooling	Air-Source Heat Pump	1 kBTU/hr	Existing	6.34	15	\$21.65	2%	at stock turnover	\$0.18	8.25	8.25	Annual Energy Outlook, 2015

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Food Mfg	Heating	Air-Source Heat Pump	1 kBTU/hr	Existing	4.27	15	\$21.65	2%	at stock turnover	\$0.18	5.55	5.55	Annual Energy Outlook, 2015
Food Mfg	Cooling	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Food Mfg	Heating	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Food Mfg	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	3%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Food Mfg	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	16%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Food Mfg	Ventilation	Ventilation	1000 CFM	Existing	2,269.39	20	\$1,219.71	100%	at stock turnover	\$0.04	181.25	181.25	AEG-BEST
Food Mfg	Interior Lighting	Screw-in	lamps	Existing	36.23	8	\$4.05	100%	at stock turnover	\$0.02	172.83	326.89	7th Power Plan
Food Mfg	Interior Lighting	High-Bay Fixtures	lamps	Existing	191.34	15	\$127.03	100%	at stock turnover	\$0.06	4,397.18	4,048.09	Annual Energy Outlook, 2015
Food Mfg	Interior Lighting	Linear Lighting	lamps	Existing	28.60	17	\$54.19	100%	at stock turnover	\$0.15	841.92	801.33	7th Power Plan
Food Mfg	Exterior Lighting	Screw-in	lamps	Existing	206.91	8	\$4.05	100%	at stock turnover	\$0.00	52.89	100.04	7th Power Plan
Food Mfg	Exterior Lighting	Area Lighting	lamps	Existing	2,507.81	15	\$45.69	100%	at stock turnover	\$0.00	1,143.41	1,083.11	Annual Energy Outlook, 2015
Food Mfg	Exterior Lighting	Linear Lighting	lamps	Existing	196.34	17	\$54.19	100%	at stock turnover	\$0.02	227.53	216.56	7th Power Plan
Food Mfg	Motors	Pumps	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Food Mfg	Motors	Fans & Blowers	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Food Mfg	Motors	Compressed Air	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Food Mfg	Motors	Material Handling	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Food Mfg	Motors	Other Motors	1 unit	Existing	0.00	10	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	N/A
Food Mfg	Process	Process Heating	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Food Mfg	Process	Process Cooling	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Food Mfg	Process	Process Refrigeration	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Food Mfg	Process	Process Electrochemical	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Food Mfg	Process	Process Other	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Food Mfg	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Food Mfg	Cooling	Air-Cooled Chiller	1 kBTU/hr	New	18.03	20	\$26.36	3%	at stock turnover	\$0.11	60.62	60.62	Annual Energy Outlook, 2015
Food Mfg	Cooling	Water-Cooled Chiller	1 kBTU/hr	New	24.90	25	\$12.65	3%	at stock turnover	\$0.03	76.59	76.59	Annual Energy Outlook, 2015
Food Mfg	Cooling	RTU	1 kBTU/hr	New	3.20	15	\$6.75	12%	at stock turnover	\$0.18	48.26	48.26	Annual Energy Outlook, 2015
Food Mfg	Cooling	Air-Source Heat Pump	1 kBTU/hr	New	6.16	15	\$21.65	2%	at stock turnover	\$0.18	10.44	10.44	Annual Energy Outlook, 2015
Food Mfg	Heating	Air-Source Heat Pump	1 kBTU/hr	New	4.09	15	\$21.65	2%	at stock turnover	\$0.18	6.94	6.94	Annual Energy Outlook, 2015
Food Mfg	Cooling	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Food Mfg	Heating	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Food Mfg	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	3%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Food Mfg	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	16%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Food Mfg	Ventilation	Ventilation	1000 CFM	New	1,964.09	20	\$1,219.71	100%	at stock turnover	\$0.05	208.88	208.88	AEG-BEST
Food Mfg	Interior Lighting	Screw-in	lamps	New	36.27	8	\$4.05	100%	at stock turnover	\$0.02	183.31	195.62	7th Power Plan
Food Mfg	Interior Lighting	High-Bay Fixtures	lamps	New	191.61	15	\$127.03	100%	at stock turnover	\$0.06	5,488.50	5,278.89	Annual Energy Outlook, 2015
Food Mfg	Interior Lighting	Linear Lighting	lamps	New	28.60	17	\$54.19	100%	at stock turnover	\$0.15	874.30	855.01	7th Power Plan
Food Mfg	Exterior Lighting	Screw-in	lamps	New	207.12	8	\$4.05	100%	at stock turnover	\$0.00	56.10	59.87	7th Power Plan
Food Mfg	Exterior Lighting	Area Lighting	lamps	New	2,507.81	15	\$45.69	100%	at stock turnover	\$0.00	1,417.52	1,381.31	Annual Energy Outlook, 2015

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Food Mfg	Exterior Lighting	Linear Lighting	lamps	New	196.34	17	\$54.19	100%	at stock turnover	\$0.02	236.28	231.07	7th Power Plan
Food Mfg	Motors	Pumps	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Food Mfg	Motors	Fans & Blowers	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Food Mfg	Motors	Compressed Air	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Food Mfg	Motors	Material Handling	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Food Mfg	Motors	Other Motors	1 unit	New	0.00	10	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	N/A
Food Mfg	Process	Process Heating	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Food Mfg	Process	Process Cooling	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Food Mfg	Process	Process Refrigeration	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Food Mfg	Process	Process Electrochemical	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Food Mfg	Process	Process Other	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Food Mfg	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Paper Mfg	Cooling	Air-Cooled Chiller	1 kBTU/hr	Existing	20.95	20	\$26.36	3%	at stock turnover	\$0.09	12.90	12.90	Annual Energy Outlook, 2015
Paper Mfg	Cooling	Water-Cooled Chiller	1 kBTU/hr	Existing	28.62	25	\$12.65	3%	at stock turnover	\$0.03	17.62	17.62	Annual Energy Outlook, 2015
Paper Mfg	Cooling	RTU	1 kBTU/hr	Existing	3.29	15	\$6.75	12%	at stock turnover	\$0.18	11.51	11.51	Annual Energy Outlook, 2015
Paper Mfg	Cooling	Air-Source Heat Pump	1 kBTU/hr	Existing	6.34	15	\$21.65	2%	at stock turnover	\$0.18	2.34	2.34	Annual Energy Outlook, 2015
Paper Mfg	Heating	Air-Source Heat Pump	1 kBTU/hr	Existing	4.27	15	\$21.65	2%	at stock turnover	\$0.18	1.58	1.58	Annual Energy Outlook, 2015
Paper Mfg	Cooling	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Paper Mfg	Heating	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Paper Mfg	Heating	Electric Furnace	1 kBtu/hr	Existing	0.00	18	\$0.00	3%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Paper Mfg	Heating	Electric Room Heat	3.5 kBtu/hr	Existing	0.00	18	\$0.00	16%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Paper Mfg	Ventilation	Ventilation	1000 CFM	Existing	2,269.39	20	\$1,219.71	100%	at stock turnover	\$0.04	51.51	51.51	AEG-BEST
Paper Mfg	Interior Lighting	Screw-in	lamps	Existing	36.23	8	\$4.05	100%	at stock turnover	\$0.02	65.92	124.67	7th Power Plan
Paper Mfg	Interior Lighting	High-Bay Fixtures	lamps	Existing	191.34	15	\$127.03	100%	at stock turnover	\$0.06	1,677.06	1,543.92	Annual Energy Outlook, 2015
Paper Mfg	Interior Lighting	Linear Lighting	lamps	Existing	28.60	17	\$54.19	100%	at stock turnover	\$0.15	321.10	305.62	7th Power Plan
Paper Mfg	Exterior Lighting	Screw-in	lamps	Existing	206.91	8	\$4.05	100%	at stock turnover	\$0.00	20.17	38.15	7th Power Plan
Paper Mfg	Exterior Lighting	Area Lighting	lamps	Existing	2,507.81	15	\$45.69	100%	at stock turnover	\$0.00	436.09	413.09	Annual Energy Outlook, 2015
Paper Mfg	Exterior Lighting	Linear Lighting	lamps	Existing	196.34	17	\$54.19	100%	at stock turnover	\$0.02	86.78	82.60	7th Power Plan
Paper Mfg	Motors	Pumps	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Paper Mfg	Motors	Fans & Blowers	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Paper Mfg	Motors	Compressed Air	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Paper Mfg	Motors	Material Handling	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Paper Mfg	Motors	Other Motors	1 unit	Existing	0.00	10	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	N/A
Paper Mfg	Process	Process Heating	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Paper Mfg	Process	Process Cooling	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Paper Mfg	Process	Process Refrigeration	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Paper Mfg	Process	Process Electrochemical	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Paper Mfg	Process	Process Other	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Paper Mfg	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Paper Mfg	Cooling	Air-Cooled Chiller	1 kBTU/hr	New	18.03	20	\$26.36	3%	at stock turnover	\$0.11	17.24	17.24	Annual Energy Outlook, 2015
Paper Mfg	Cooling	Water-Cooled Chiller	1 kBTU/hr	New	24.90	25	\$12.65	3%	at stock turnover	\$0.03	21.77	21.77	Annual Energy Outlook, 2015
Paper Mfg	Cooling	RTU	1 kBTU/hr	New	3.20	15	\$6.75	12%	at stock turnover	\$0.18	13.72	13.72	Annual Energy Outlook, 2015
Paper Mfg	Cooling	Air-Source Heat Pump	1 kBTU/hr	New	6.16	15	\$21.65	2%	at stock turnover	\$0.18	2.97	2.97	Annual Energy Outlook, 2015
Paper Mfg	Heating	Air-Source Heat Pump	1 kBTU/hr	New	4.09	15	\$21.65	2%	at stock turnover	\$0.18	1.97	1.97	Annual Energy Outlook, 2015
Paper Mfg	Cooling	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Paper Mfg	Heating	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Paper Mfg	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	3%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Paper Mfg	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	16%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Paper Mfg	Ventilation	Ventilation	1000 CFM	New	1,964.09	20	\$1,219.71	100%	at stock turnover	\$0.05	59.39	59.39	AEG-BEST
Paper Mfg	Interior Lighting	Screw-in	lamps	New	36.27	8	\$4.05	100%	at stock turnover	\$0.02	69.96	74.67	7th Power Plan
Paper Mfg	Interior Lighting	High-Bay Fixtures	lamps	New	191.61	15	\$127.03	100%	at stock turnover	\$0.06	2,094.42	2,014.47	Annual Energy Outlook, 2015
Paper Mfg	Interior Lighting	Linear Lighting	lamps	New	28.60	17	\$54.19	100%	at stock turnover	\$0.15	333.72	326.36	7th Power Plan
Paper Mfg	Exterior Lighting	Screw-in	lamps	New	207.12	8	\$4.05	100%	at stock turnover	\$0.00	21.41	22.85	7th Power Plan
Paper Mfg	Exterior Lighting	Area Lighting	lamps	New	2,507.81	15	\$45.69	100%	at stock turnover	\$0.00	540.93	527.12	Annual Energy Outlook, 2015
Paper Mfg	Exterior Lighting	Linear Lighting	lamps	New	196.34	17	\$54.19	100%	at stock turnover	\$0.02	90.19	88.20	7th Power Plan
Paper Mfg	Motors	Pumps	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Paper Mfg	Motors	Fans & Blowers	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Paper Mfg	Motors	Compressed Air	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Paper Mfg	Motors	Material Handling	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Paper Mfg	Motors	Other Motors	1 unit	New	0.00	10	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	N/A
Paper Mfg	Process	Process Heating	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Paper Mfg	Process	Process Cooling	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Paper Mfg	Process	Process Refrigeration	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Paper Mfg	Process	Process Electrochemical	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Paper Mfg	Process	Process Other	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Paper Mfg	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Petroleum Refining	Cooling	Air-Cooled Chiller	1 kBTU/hr	Existing	20.95	20	\$26.36	3%	at stock turnover	\$0.09	51.20	51.20	Annual Energy Outlook, 2015
Petroleum Refining	Cooling	Water-Cooled Chiller	1 kBTU/hr	Existing	28.62	25	\$12.65	3%	at stock turnover	\$0.03	69.95	69.95	Annual Energy Outlook, 2015
Petroleum Refining	Cooling	RTU	1 kBTU/hr	Existing	3.29	15	\$6.75	12%	at stock turnover	\$0.18	45.68	45.68	Annual Energy Outlook, 2015
Petroleum Refining	Cooling	Air-Source Heat Pump	1 kBTU/hr	Existing	6.34	15	\$21.65	2%	at stock turnover	\$0.18	9.30	9.30	Annual Energy Outlook, 2015
Petroleum Refining	Heating	Air-Source Heat Pump	1 kBTU/hr	Existing	4.27	15	\$21.65	2%	at stock turnover	\$0.18	6.26	6.26	Annual Energy Outlook, 2015
Petroleum Refining	Cooling	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Petroleum Refining	Heating	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Petroleum Refining	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	3%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Petroleum Refining	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	16%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Petroleum Refining	Ventilation	Ventilation	1000 CFM	Existing	2,269.39	20	\$1,219.71	100%	at stock turnover	\$0.04	204.43	204.43	AEG-BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Petroleum Refining	Interior Lighting	Screw-in	lamps	Existing	36.23	8	\$4.05	100%	at stock turnover	\$0.02	62.02	117.30	7th Power Plan
Petroleum Refining	Interior Lighting	High-Bay Fixtures	lamps	Existing	191.34	15	\$127.03	100%	at stock turnover	\$0.06	1,577.92	1,452.65	Annual Energy Outlook, 2015
Petroleum Refining	Interior Lighting	Linear Lighting	lamps	Existing	28.60	17	\$54.19	100%	at stock turnover	\$0.15	302.12	287.56	7th Power Plan
Petroleum Refining	Exterior Lighting	Screw-in	lamps	Existing	206.91	8	\$4.05	100%	at stock turnover	\$0.00	18.98	35.90	7th Power Plan
Petroleum Refining	Exterior Lighting	Area Lighting	lamps	Existing	2,507.81	15	\$45.69	100%	at stock turnover	\$0.00	410.31	388.67	Annual Energy Outlook, 2015
Petroleum Refining	Exterior Lighting	Linear Lighting	lamps	Existing	196.34	17	\$54.19	100%	at stock turnover	\$0.02	81.65	77.71	7th Power Plan
Petroleum Refining	Motors	Pumps	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Petroleum Refining	Motors	Fans & Blowers	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Petroleum Refining	Motors	Compressed Air	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Petroleum Refining	Motors	Material Handling	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Petroleum Refining	Motors	Other Motors	1 unit	Existing	0.00	10	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	N/A
Petroleum Refining	Process	Process Heating	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Petroleum Refining	Process	Process Cooling	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Petroleum Refining	Process	Process Refrigeration	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Petroleum Refining	Process	Process Electrochemical	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Petroleum Refining	Process	Process Other	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Petroleum Refining	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Petroleum Refining	Cooling	Air-Cooled Chiller	1 kBTU/hr	New	18.03	20	\$26.36	3%	at stock turnover	\$0.11	68.44	68.44	Annual Energy Outlook, 2015
Petroleum Refining	Cooling	Water-Cooled Chiller	1 kBTU/hr	New	24.90	25	\$12.65	3%	at stock turnover	\$0.03	86.44	86.44	Annual Energy Outlook, 2015

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Petroleum Refining	Cooling	RTU	1 kBTU/hr	New	3.20	15	\$6.75	12%	at stock turnover	\$0.18	54.50	54.50	Annual Energy Outlook, 2015
Petroleum Refining	Cooling	Air-Source Heat Pump	1 kBTU/hr	New	6.16	15	\$21.65	2%	at stock turnover	\$0.18	11.79	11.79	Annual Energy Outlook, 2015
Petroleum Refining	Heating	Air-Source Heat Pump	1 kBTU/hr	New	4.09	15	\$21.65	2%	at stock turnover	\$0.18	7.83	7.83	Annual Energy Outlook, 2015
Petroleum Refining	Cooling	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Petroleum Refining	Heating	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Petroleum Refining	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	3%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Petroleum Refining	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	16%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Petroleum Refining	Ventilation	Ventilation	1000 CFM	New	1,964.09	20	\$1,219.71	100%	at stock turnover	\$0.05	235.87	235.87	AEG-BEST
Petroleum Refining	Interior Lighting	Screw-in	lamps	New	36.27	8	\$4.05	100%	at stock turnover	\$0.02	65.88	70.34	7th Power Plan
Petroleum Refining	Interior Lighting	High-Bay Fixtures	lamps	New	191.61	15	\$127.03	100%	at stock turnover	\$0.06	1,972.02	1,896.78	Annual Energy Outlook, 2015
Petroleum Refining	Interior Lighting	Linear Lighting	lamps	New	28.60	17	\$54.19	100%	at stock turnover	\$0.15	314.32	307.39	7th Power Plan
Petroleum Refining	Exterior Lighting	Screw-in	lamps	New	207.12	8	\$4.05	100%	at stock turnover	\$0.00	20.16	21.53	7th Power Plan
Petroleum Refining	Exterior Lighting	Area Lighting	lamps	New	2,507.81	15	\$45.69	100%	at stock turnover	\$0.00	509.31	496.32	Annual Energy Outlook, 2015
Petroleum Refining	Exterior Lighting	Linear Lighting	lamps	New	196.34	17	\$54.19	100%	at stock turnover	\$0.02	84.94	83.07	7th Power Plan
Petroleum Refining	Motors	Pumps	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Petroleum Refining	Motors	Fans & Blowers	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Petroleum Refining	Motors	Compressed Air	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Petroleum Refining	Motors	Material Handling	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Petroleum Refining	Motors	Other Motors	1 unit	New	0.00	10	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Petroleum Refining	Process	Process Heating	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Petroleum Refining	Process	Process Cooling	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Petroleum Refining	Process	Process Refrigeration	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Petroleum Refining	Process	Process Electrochemical	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Petroleum Refining	Process	Process Other	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Petroleum Refining	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Cooling	Air-Cooled Chiller	1 kBTU/hr	Existing	20.95	20	\$26.36	3%	at stock turnover	\$0.09	70.24	70.24	Annual Energy Outlook, 2015
Stone Clay Glass Products	Cooling	Water-Cooled Chiller	1 kBTU/hr	Existing	28.62	25	\$12.65	3%	at stock turnover	\$0.03	95.96	95.96	Annual Energy Outlook, 2015
Stone Clay Glass Products	Cooling	RTU	1 kBTU/hr	Existing	3.29	15	\$6.75	12%	at stock turnover	\$0.18	62.66	62.66	Annual Energy Outlook, 2015
Stone Clay Glass Products	Cooling	Air-Source Heat Pump	1 kBTU/hr	Existing	6.34	15	\$21.65	2%	at stock turnover	\$0.18	12.76	12.76	Annual Energy Outlook, 2015
Stone Clay Glass Products	Heating	Air-Source Heat Pump	1 kBTU/hr	Existing	4.27	15	\$21.65	2%	at stock turnover	\$0.18	8.59	8.59	Annual Energy Outlook, 2015
Stone Clay Glass Products	Cooling	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Stone Clay Glass Products	Heating	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Stone Clay Glass Products	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	3%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Stone Clay Glass Products	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	16%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Stone Clay Glass Products	Ventilation	Ventilation	1000 CFM	Existing	2,269.39	20	\$1,219.71	100%	at stock turnover	\$0.04	280.46	280.46	AEG-BEST
Stone Clay Glass Products	Interior Lighting	Screw-in	lamps	Existing	36.23	8	\$4.05	100%	at stock turnover	\$0.02	104.14	196.97	7th Power Plan
Stone Clay Glass Products	Interior Lighting	High-Bay Fixtures	lamps	Existing	191.34	15	\$127.03	100%	at stock turnover	\$0.06	2,649.57	2,439.22	Annual Energy Outlook, 2015
Stone Clay Glass Products	Interior Lighting	Linear Lighting	lamps	Existing	28.60	17	\$54.19	100%	at stock turnover	\$0.15	507.31	482.85	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Stone Clay Glass Products	Exterior Lighting	Screw-in	lamps	Existing	206.91	8	\$4.05	100%	at stock turnover	\$0.00	31.87	60.28	7th Power Plan
Stone Clay Glass Products	Exterior Lighting	Area Lighting	lamps	Existing	2,507.81	15	\$45.69	100%	at stock turnover	\$0.00	688.97	652.64	Annual Energy Outlook, 2015
Stone Clay Glass Products	Exterior Lighting	Linear Lighting	lamps	Existing	196.34	17	\$54.19	100%	at stock turnover	\$0.02	137.10	130.49	7th Power Plan
Stone Clay Glass Products	Motors	Pumps	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Motors	Fans & Blowers	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Motors	Compressed Air	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Motors	Material Handling	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Motors	Other Motors	1 unit	Existing	0.00	10	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Process	Process Heating	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Process	Process Cooling	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Process	Process Refrigeration	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Process	Process Electrochemical	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Process	Process Other	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Cooling	Air-Cooled Chiller	1 kBTU/hr	New	18.03	20	\$26.36	3%	at stock turnover	\$0.11	93.83	93.83	Annual Energy Outlook, 2015
Stone Clay Glass Products	Cooling	Water-Cooled Chiller	1 kBTU/hr	New	24.90	25	\$12.65	3%	at stock turnover	\$0.03	118.52	118.52	Annual Energy Outlook, 2015
Stone Clay Glass Products	Cooling	RTU	1 kBTU/hr	New	3.20	15	\$6.75	12%	at stock turnover	\$0.18	74.69	74.69	Annual Energy Outlook, 2015
Stone Clay Glass Products	Cooling	Air-Source Heat Pump	1 kBTU/hr	New	6.16	15	\$21.65	2%	at stock turnover	\$0.18	16.16	16.16	Annual Energy Outlook, 2015
Stone Clay Glass Products	Heating	Air-Source Heat Pump	1 kBTU/hr	New	4.09	15	\$21.65	2%	at stock turnover	\$0.18	10.73	10.73	Annual Energy Outlook, 2015

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Stone Clay Glass Products	Cooling	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Stone Clay Glass Products	Heating	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Stone Clay Glass Products	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	3%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Stone Clay Glass Products	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	16%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Stone Clay Glass Products	Ventilation	Ventilation	1000 CFM	New	1,964.09	20	\$1,219.71	100%	at stock turnover	\$0.05	323.29	323.29	AEG-BEST
Stone Clay Glass Products	Interior Lighting	Screw-in	lamps	New	36.27	8	\$4.05	100%	at stock turnover	\$0.02	110.49	117.92	7th Power Plan
Stone Clay Glass Products	Interior Lighting	High-Bay Fixtures	lamps	New	191.61	15	\$127.03	100%	at stock turnover	\$0.06	3,308.03	3,181.72	Annual Energy Outlook, 2015
Stone Clay Glass Products	Interior Lighting	Linear Lighting	lamps	New	28.60	17	\$54.19	100%	at stock turnover	\$0.15	527.02	515.39	7th Power Plan
Stone Clay Glass Products	Exterior Lighting	Screw-in	lamps	New	207.12	8	\$4.05	100%	at stock turnover	\$0.00	33.81	36.09	7th Power Plan
Stone Clay Glass Products	Exterior Lighting	Area Lighting	lamps	New	2,507.81	15	\$45.69	100%	at stock turnover	\$0.00	854.37	832.55	Annual Energy Outlook, 2015
Stone Clay Glass Products	Exterior Lighting	Linear Lighting	lamps	New	196.34	17	\$54.19	100%	at stock turnover	\$0.02	142.43	139.29	7th Power Plan
Stone Clay Glass Products	Motors	Pumps	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Motors	Fans & Blowers	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Motors	Compressed Air	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Motors	Material Handling	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Motors	Other Motors	1 unit	New	0.00	10	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Process	Process Heating	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Process	Process Cooling	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Process	Process Refrigeration	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Stone Clay Glass Products	Process	Process Electrochemical	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Process	Process Other	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Cooling	Air-Cooled Chiller	1 kBTU/hr	Existing	20.95	20	\$26.36	3%	at stock turnover	\$0.09	320.18	320.18	Annual Energy Outlook, 2015
Transportation Equipment Mfg	Cooling	Water-Cooled Chiller	1 kBTU/hr	Existing	28.62	25	\$12.65	3%	at stock turnover	\$0.03	437.40	437.40	Annual Energy Outlook, 2015
Transportation Equipment Mfg	Cooling	RTU	1 kBTU/hr	Existing	3.29	15	\$6.75	12%	at stock turnover	\$0.18	285.64	285.64	Annual Energy Outlook, 2015
Transportation Equipment Mfg	Cooling	Air-Source Heat Pump	1 kBTU/hr	Existing	6.34	15	\$21.65	2%	at stock turnover	\$0.18	58.18	58.18	Annual Energy Outlook, 2015
Transportation Equipment Mfg	Heating	Air-Source Heat Pump	1 kBTU/hr	Existing	4.27	15	\$21.65	2%	at stock turnover	\$0.18	39.16	39.16	Annual Energy Outlook, 2015
Transportation Equipment Mfg	Cooling	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Transportation Equipment Mfg	Heating	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Transportation Equipment Mfg	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	3%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Transportation Equipment Mfg	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	16%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Transportation Equipment Mfg	Ventilation	Ventilation	1000 CFM	Existing	2,269.39	20	\$1,219.71	100%	at stock turnover	\$0.04	1,278.42	1,278.42	AEG-BEST
Transportation Equipment Mfg	Interior Lighting	Screw-in	lamps	Existing	36.23	8	\$4.05	100%	at stock turnover	\$0.02	420.69	795.71	7th Power Plan
Transportation Equipment Mfg	Interior Lighting	High-Bay Fixtures	lamps	Existing	191.34	15	\$127.03	100%	at stock turnover	\$0.06	10,703.50	9,853.76	Annual Energy Outlook, 2015
Transportation Equipment Mfg	Interior Lighting	Linear Lighting	lamps	Existing	28.60	17	\$54.19	100%	at stock turnover	\$0.15	2,049.38	1,950.58	7th Power Plan
Transportation Equipment Mfg	Exterior Lighting	Screw-in	lamps	Existing	206.91	8	\$4.05	100%	at stock turnover	\$0.00	128.75	243.51	7th Power Plan
Transportation Equipment Mfg	Exterior Lighting	Area Lighting	lamps	Existing	2,507.81	15	\$45.69	100%	at stock turnover	\$0.00	2,783.26	2,636.47	Annual Energy Outlook, 2015
Transportation Equipment Mfg	Exterior Lighting	Linear Lighting	lamps	Existing	196.34	17	\$54.19	100%	at stock turnover	\$0.02	553.85	527.15	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Transportation Equipment Mfg	Motors	Pumps	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Motors	Fans & Blowers	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Motors	Compressed Air	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Motors	Material Handling	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Motors	Other Motors	1 unit	Existing	0.00	10	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Process	Process Heating	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Process	Process Cooling	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Process	Process Refrigeration	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Process	Process Electrochemical	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Process	Process Other	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Cooling	Air-Cooled Chiller	1 kBTU/hr	New	18.03	20	\$26.36	3%	at stock turnover	\$0.11	427.62	427.62	Annual Energy Outlook, 2015
Transportation Equipment Mfg	Cooling	Water-Cooled Chiller	1 kBTU/hr	New	24.90	25	\$12.65	3%	at stock turnover	\$0.03	540.22	540.22	Annual Energy Outlook, 2015
Transportation Equipment Mfg	Cooling	RTU	1 kBTU/hr	New	3.20	15	\$6.75	12%	at stock turnover	\$0.18	340.40	340.40	Annual Energy Outlook, 2015
Transportation Equipment Mfg	Cooling	Air-Source Heat Pump	1 kBTU/hr	New	6.16	15	\$21.65	2%	at stock turnover	\$0.18	73.66	73.66	Annual Energy Outlook, 2015
Transportation Equipment Mfg	Heating	Air-Source Heat Pump	1 kBTU/hr	New	4.09	15	\$21.65	2%	at stock turnover	\$0.18	48.92	48.92	Annual Energy Outlook, 2015
Transportation Equipment Mfg	Cooling	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Transportation Equipment Mfg	Heating	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Transportation Equipment Mfg	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	3%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Transportation Equipment Mfg	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	16%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Transportation Equipment Mfg	Ventilation	Ventilation	1000 CFM	New	1,964.09	20	\$1,219.71	100%	at stock turnover	\$0.05	1,473.36	1,473.36	AEG-BEST
Transportation Equipment Mfg	Interior Lighting	Screw-in	lamps	New	36.27	8	\$4.05	100%	at stock turnover	\$0.02	446.23	476.20	7th Power Plan
Transportation Equipment Mfg	Interior Lighting	High-Bay Fixtures	lamps	New	191.61	15	\$127.03	100%	at stock turnover	\$0.06	13,360.57	12,850.34	Annual Energy Outlook, 2015
Transportation Equipment Mfg	Interior Lighting	Linear Lighting	lamps	New	28.60	17	\$54.19	100%	at stock turnover	\$0.15	2,128.35	2,081.37	7th Power Plan
Transportation Equipment Mfg	Exterior Lighting	Screw-in	lamps	New	207.12	8	\$4.05	100%	at stock turnover	\$0.00	136.56	145.73	7th Power Plan
Transportation Equipment Mfg	Exterior Lighting	Area Lighting	lamps	New	2,507.81	15	\$45.69	100%	at stock turnover	\$0.00	3,450.64	3,362.50	Annual Energy Outlook, 2015
Transportation Equipment Mfg	Exterior Lighting	Linear Lighting	lamps	New	196.34	17	\$54.19	100%	at stock turnover	\$0.02	575.19	562.50	7th Power Plan
Transportation Equipment Mfg	Motors	Pumps	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Motors	Fans & Blowers	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Motors	Compressed Air	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Motors	Material Handling	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Motors	Other Motors	1 unit	New	0.00	10	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Process	Process Heating	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Process	Process Cooling	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Process	Process Refrigeration	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Process	Process Electrochemical	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Process	Process Other	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Wastewater	Cooling	Air-Cooled Chiller	1 kBTU/hr	Existing	20.95	20	\$26.36	3%	at stock turnover	\$0.09	16.45	16.45	Annual Energy Outlook, 2015
Wastewater	Cooling	Water-Cooled Chiller	1 kBTU/hr	Existing	28.62	25	\$12.65	3%	at stock turnover	\$0.03	22.47	22.47	Annual Energy Outlook, 2015
Wastewater	Cooling	RTU	1 kBTU/hr	Existing	3.29	15	\$6.75	12%	at stock turnover	\$0.18	14.67	14.67	Annual Energy Outlook, 2015
Wastewater	Cooling	Air-Source Heat Pump	1 kBTU/hr	Existing	6.34	15	\$21.65	2%	at stock turnover	\$0.18	2.99	2.99	Annual Energy Outlook, 2015
Wastewater	Heating	Air-Source Heat Pump	1 kBTU/hr	Existing	4.27	15	\$21.65	2%	at stock turnover	\$0.18	2.01	2.01	Annual Energy Outlook, 2015
Wastewater	Cooling	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Wastewater	Heating	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Wastewater	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	3%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Wastewater	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	16%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Wastewater	Ventilation	Ventilation	1000 CFM	Existing	2,269.39	20	\$1,219.71	100%	at stock turnover	\$0.04	65.68	65.68	AEG-BEST
Wastewater	Interior Lighting	Screw-in	lamps	Existing	36.23	8	\$4.05	100%	at stock turnover	\$0.02	27.66	52.32	7th Power Plan
Wastewater	Interior Lighting	High-Bay Fixtures	lamps	Existing	191.34	15	\$127.03	100%	at stock turnover	\$0.06	703.84	647.96	Annual Energy Outlook, 2015
Wastewater	Interior Lighting	Linear Lighting	lamps	Existing	28.60	17	\$54.19	100%	at stock turnover	\$0.15	134.76	128.27	7th Power Plan
Wastewater	Exterior Lighting	Screw-in	lamps	Existing	206.91	8	\$4.05	100%	at stock turnover	\$0.00	8.47	16.01	7th Power Plan
Wastewater	Exterior Lighting	Area Lighting	lamps	Existing	2,507.81	15	\$45.69	100%	at stock turnover	\$0.00	183.02	173.37	Annual Energy Outlook, 2015
Wastewater	Exterior Lighting	Linear Lighting	lamps	Existing	196.34	17	\$54.19	100%	at stock turnover	\$0.02	36.42	34.66	7th Power Plan
Wastewater	Motors	Pumps	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Wastewater	Motors	Fans & Blowers	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Wastewater	Motors	Compressed Air	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Wastewater	Motors	Material Handling	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Wastewater	Motors	Other Motors	1 unit	Existing	0.00	10	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	N/A
Wastewater	Process	Process Heating	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Wastewater	Process	Process Cooling	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Wastewater	Process	Process Refrigeration	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Wastewater	Process	Process Electrochemical	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Wastewater	Process	Process Other	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Wastewater	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Wastewater	Cooling	Air-Cooled Chiller	1 kBTU/hr	New	18.03	20	\$26.36	3%	at stock turnover	\$0.11	22.01	22.01	Annual Energy Outlook, 2015
Wastewater	Cooling	Water-Cooled Chiller	1 kBTU/hr	New	24.90	25	\$12.65	3%	at stock turnover	\$0.03	27.79	27.79	Annual Energy Outlook, 2015
Wastewater	Cooling	RTU	1 kBTU/hr	New	3.20	15	\$6.75	12%	at stock turnover	\$0.18	17.54	17.54	Annual Energy Outlook, 2015
Wastewater	Cooling	Air-Source Heat Pump	1 kBTU/hr	New	6.16	15	\$21.65	2%	at stock turnover	\$0.18	3.79	3.79	Annual Energy Outlook, 2015
Wastewater	Heating	Air-Source Heat Pump	1 kBTU/hr	New	4.09	15	\$21.65	2%	at stock turnover	\$0.18	2.52	2.52	Annual Energy Outlook, 2015
Wastewater	Cooling	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Wastewater	Heating	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Wastewater	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	3%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Wastewater	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	16%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Wastewater	Ventilation	Ventilation	1000 CFM	New	1,964.09	20	\$1,219.71	100%	at stock turnover	\$0.05	75.89	75.89	AEG-BEST
Wastewater	Interior Lighting	Screw-in	lamps	New	36.27	8	\$4.05	100%	at stock turnover	\$0.02	29.44	31.45	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Wastewater	Interior Lighting	High-Bay Fixtures	lamps	New	191.61	15	\$127.03	100%	at stock turnover	\$0.06	880.95	847.38	Annual Energy Outlook, 2015
Wastewater	Interior Lighting	Linear Lighting	lamps	New	28.60	17	\$54.19	100%	at stock turnover	\$0.15	140.51	137.42	7th Power Plan
Wastewater	Exterior Lighting	Screw-in	lamps	New	207.12	8	\$4.05	100%	at stock turnover	\$0.00	9.01	9.63	7th Power Plan
Wastewater	Exterior Lighting	Area Lighting	lamps	New	2,507.81	15	\$45.69	100%	at stock turnover	\$0.00	227.52	221.72	Annual Energy Outlook, 2015
Wastewater	Exterior Lighting	Linear Lighting	lamps	New	196.34	17	\$54.19	100%	at stock turnover	\$0.02	37.97	37.14	7th Power Plan
Wastewater	Motors	Pumps	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Wastewater	Motors	Fans & Blowers	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Wastewater	Motors	Compressed Air	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Wastewater	Motors	Material Handling	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Wastewater	Motors	Other Motors	1 unit	New	0.00	10	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	N/A
Wastewater	Process	Process Heating	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Wastewater	Process	Process Cooling	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Wastewater	Process	Process Refrigeration	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Wastewater	Process	Process Electrochemical	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Wastewater	Process	Process Other	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Wastewater	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Water	Cooling	Air-Cooled Chiller	1 kBTU/hr	Existing	20.95	20	\$26.36	3%	at stock turnover	\$0.09	27.32	27.32	Annual Energy Outlook, 2015
Water	Cooling	Water-Cooled Chiller	1 kBTU/hr	Existing	28.62	25	\$12.65	3%	at stock turnover	\$0.03	37.32	37.32	Annual Energy Outlook, 2015
Water	Cooling	RTU	1 kBTU/hr	Existing	3.29	15	\$6.75	12%	at stock turnover	\$0.18	24.37	24.37	Annual Energy Outlook, 2015

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Water	Cooling	Air-Source Heat Pump	1 kBTU/hr	Existing	6.34	15	\$21.65	2%	at stock turnover	\$0.18	4.96	4.96	Annual Energy Outlook, 2015
Water	Heating	Air-Source Heat Pump	1 kBTU/hr	Existing	4.27	15	\$21.65	2%	at stock turnover	\$0.18	3.34	3.34	Annual Energy Outlook, 2015
Water	Cooling	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Water	Heating	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Water	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	3%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Water	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	16%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Water	Ventilation	Ventilation	1000 CFM	Existing	2,269.39	20	\$1,219.71	100%	at stock turnover	\$0.04	109.08	109.08	AEG-BEST
Water	Interior Lighting	Screw-in	lamps	Existing	36.23	8	\$4.05	100%	at stock turnover	\$0.02	45.94	86.89	7th Power Plan
Water	Interior Lighting	High-Bay Fixtures	lamps	Existing	191.34	15	\$127.03	100%	at stock turnover	\$0.06	1,168.87	1,076.08	Annual Energy Outlook, 2015
Water	Interior Lighting	Linear Lighting	lamps	Existing	28.60	17	\$54.19	100%	at stock turnover	\$0.15	223.80	213.01	7th Power Plan
Water	Exterior Lighting	Screw-in	lamps	Existing	206.91	8	\$4.05	100%	at stock turnover	\$0.00	14.06	26.59	7th Power Plan
Water	Exterior Lighting	Area Lighting	lamps	Existing	2,507.81	15	\$45.69	100%	at stock turnover	\$0.00	303.95	287.91	Annual Energy Outlook, 2015
Water	Exterior Lighting	Linear Lighting	lamps	Existing	196.34	17	\$54.19	100%	at stock turnover	\$0.02	60.48	57.57	7th Power Plan
Water	Motors	Pumps	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Water	Motors	Fans & Blowers	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Water	Motors	Compressed Air	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Water	Motors	Material Handling	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Water	Motors	Other Motors	1 unit	Existing	0.00	10	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	N/A
Water	Process	Process Heating	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Water	Process	Process Cooling	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Water	Process	Process Refrigeration	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Water	Process	Process Electrochemical	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Water	Process	Process Other	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Water	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Water	Cooling	Air-Cooled Chiller	1 kBTU/hr	New	18.03	20	\$26.36	3%	at stock turnover	\$0.11	36.50	36.50	Annual Energy Outlook, 2015
Water	Cooling	Water-Cooled Chiller	1 kBTU/hr	New	24.90	25	\$12.65	3%	at stock turnover	\$0.03	46.10	46.10	Annual Energy Outlook, 2015
Water	Cooling	RTU	1 kBTU/hr	New	3.20	15	\$6.75	12%	at stock turnover	\$0.18	29.05	29.05	Annual Energy Outlook, 2015
Water	Cooling	Air-Source Heat Pump	1 kBTU/hr	New	6.16	15	\$21.65	2%	at stock turnover	\$0.18	6.29	6.29	Annual Energy Outlook, 2015
Water	Heating	Air-Source Heat Pump	1 kBTU/hr	New	4.09	15	\$21.65	2%	at stock turnover	\$0.18	4.18	4.18	Annual Energy Outlook, 2015
Water	Cooling	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Water	Heating	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Water	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	3%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Water	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	16%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Water	Ventilation	Ventilation	1000 CFM	New	1,964.09	20	\$1,219.71	100%	at stock turnover	\$0.05	125.75	125.75	AEG-BEST
Water	Interior Lighting	Screw-in	lamps	New	36.27	8	\$4.05	100%	at stock turnover	\$0.02	48.75	52.04	7th Power Plan
Water	Interior Lighting	High-Bay Fixtures	lamps	New	191.61	15	\$127.03	100%	at stock turnover	\$0.06	1,459.59	1,403.87	Annual Energy Outlook, 2015
Water	Interior Lighting	Linear Lighting	lamps	New	28.60	17	\$54.19	100%	at stock turnover	\$0.15	232.55	227.42	7th Power Plan
Water	Exterior Lighting	Screw-in	lamps	New	207.12	8	\$4.05	100%	at stock turnover	\$0.00	14.92	15.92	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Water	Exterior Lighting	Area Lighting	lamps	New	2,507.81	15	\$45.69	100%	at stock turnover	\$0.00	376.97	367.34	Annual Energy Outlook, 2015
Water	Exterior Lighting	Linear Lighting	lamps	New	196.34	17	\$54.19	100%	at stock turnover	\$0.02	62.85	61.46	7th Power Plan
Water	Motors	Pumps	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Water	Motors	Fans & Blowers	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Water	Motors	Compressed Air	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Water	Motors	Material Handling	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Water	Motors	Other Motors	1 unit	New	0.00	10	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	N/A
Water	Process	Process Heating	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Water	Process	Process Cooling	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Water	Process	Process Refrigeration	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Water	Process	Process Electrochemical	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Water	Process	Process Other	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Water	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Chemical Mfg	Cooling	Air-Cooled Chiller	1 kBTU/hr	Existing	20.95	20	\$26.36	3%	at stock turnover	\$0.09	128.55	128.55	Annual Energy Outlook, 2015
Chemical Mfg	Cooling	Water-Cooled Chiller	1 kBTU/hr	Existing	28.62	25	\$12.65	3%	at stock turnover	\$0.03	175.62	175.62	Annual Energy Outlook, 2015
Chemical Mfg	Cooling	RTU	1 kBTU/hr	Existing	3.29	15	\$6.75	12%	at stock turnover	\$0.18	114.68	114.68	Annual Energy Outlook, 2015
Chemical Mfg	Cooling	Air-Source Heat Pump	1 kBTU/hr	Existing	6.34	15	\$21.65	2%	at stock turnover	\$0.18	23.36	23.36	Annual Energy Outlook, 2015
Chemical Mfg	Heating	Air-Source Heat Pump	1 kBTU/hr	Existing	4.27	15	\$21.65	2%	at stock turnover	\$0.18	15.72	15.72	Annual Energy Outlook, 2015
Chemical Mfg	Cooling	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Chemical Mfg	Heating	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Chemical Mfg	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	3%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Chemical Mfg	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	16%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Chemical Mfg	Ventilation	Ventilation	1000 CFM	Existing	2,269.39	20	\$1,219.71	100%	at stock turnover	\$0.04	513.28	513.28	AEG-BEST
Chemical Mfg	Interior Lighting	Screw-in	lamps	Existing	36.23	8	\$4.05	100%	at stock turnover	\$0.02	147.57	279.12	7th Power Plan
Chemical Mfg	Interior Lighting	High-Bay Fixtures	lamps	Existing	191.34	15	\$127.03	100%	at stock turnover	\$0.06	3,754.63	3,456.56	Annual Energy Outlook, 2015
Chemical Mfg	Interior Lighting	Linear Lighting	lamps	Existing	28.60	17	\$54.19	100%	at stock turnover	\$0.15	718.89	684.23	7th Power Plan
Chemical Mfg	Exterior Lighting	Screw-in	lamps	Existing	206.91	8	\$4.05	100%	at stock turnover	\$0.00	45.16	85.42	7th Power Plan
Chemical Mfg	Exterior Lighting	Area Lighting	lamps	Existing	2,507.81	15	\$45.69	100%	at stock turnover	\$0.00	976.33	924.83	Annual Energy Outlook, 2015
Chemical Mfg	Exterior Lighting	Linear Lighting	lamps	Existing	196.34	17	\$54.19	100%	at stock turnover	\$0.02	194.28	184.92	7th Power Plan
Chemical Mfg	Motors	Pumps	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Chemical Mfg	Motors	Fans & Blowers	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Chemical Mfg	Motors	Compressed Air	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Chemical Mfg	Motors	Material Handling	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Chemical Mfg	Motors	Other Motors	1 unit	Existing	0.00	10	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	N/A
Chemical Mfg	Process	Process Heating	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Chemical Mfg	Process	Process Cooling	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Chemical Mfg	Process	Process Refrigeration	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Chemical Mfg	Process	Process Electrochemical	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Chemical Mfg	Process	Process Other	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Chemical Mfg	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Chemical Mfg	Cooling	Air-Cooled Chiller	1 kBTU/hr	New	18.03	20	\$26.36	3%	at stock turnover	\$0.11	171.69	171.69	Annual Energy Outlook, 2015
Chemical Mfg	Cooling	Water-Cooled Chiller	1 kBTU/hr	New	24.90	25	\$12.65	3%	at stock turnover	\$0.03	216.89	216.89	Annual Energy Outlook, 2015
Chemical Mfg	Cooling	RTU	1 kBTU/hr	New	3.20	15	\$6.75	12%	at stock turnover	\$0.18	136.67	136.67	Annual Energy Outlook, 2015
Chemical Mfg	Cooling	Air-Source Heat Pump	1 kBTU/hr	New	6.16	15	\$21.65	2%	at stock turnover	\$0.18	29.57	29.57	Annual Energy Outlook, 2015
Chemical Mfg	Heating	Air-Source Heat Pump	1 kBTU/hr	New	4.09	15	\$21.65	2%	at stock turnover	\$0.18	19.64	19.64	Annual Energy Outlook, 2015
Chemical Mfg	Cooling	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Chemical Mfg	Heating	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Chemical Mfg	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	3%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Chemical Mfg	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	16%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Chemical Mfg	Ventilation	Ventilation	1000 CFM	New	1,964.09	20	\$1,219.71	100%	at stock turnover	\$0.05	591.54	591.54	AEG-BEST
Chemical Mfg	Interior Lighting	Screw-in	lamps	New	36.27	8	\$4.05	100%	at stock turnover	\$0.02	156.53	167.04	7th Power Plan
Chemical Mfg	Interior Lighting	High-Bay Fixtures	lamps	New	191.61	15	\$127.03	100%	at stock turnover	\$0.06	4,686.55	4,507.57	Annual Energy Outlook, 2015
Chemical Mfg	Interior Lighting	Linear Lighting	lamps	New	28.60	17	\$54.19	100%	at stock turnover	\$0.15	746.56	730.08	7th Power Plan
Chemical Mfg	Exterior Lighting	Screw-in	lamps	New	207.12	8	\$4.05	100%	at stock turnover	\$0.00	47.90	51.12	7th Power Plan
Chemical Mfg	Exterior Lighting	Area Lighting	lamps	New	2,507.81	15	\$45.69	100%	at stock turnover	\$0.00	1,210.40	1,179.48	Annual Energy Outlook, 2015
Chemical Mfg	Exterior Lighting	Linear Lighting	lamps	New	196.34	17	\$54.19	100%	at stock turnover	\$0.02	201.76	197.31	7th Power Plan
Chemical Mfg	Motors	Pumps	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Chemical Mfg	Motors	Fans & Blowers	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Chemical Mfg	Motors	Compressed Air	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Chemical Mfg	Motors	Material Handling	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Chemical Mfg	Motors	Other Motors	1 unit	New	0.00	10	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	N/A
Chemical Mfg	Process	Process Heating	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Chemical Mfg	Process	Process Cooling	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Chemical Mfg	Process	Process Refrigeration	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Chemical Mfg	Process	Process Electrochemical	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Chemical Mfg	Process	Process Other	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Chemical Mfg	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Cooling	Air-Cooled Chiller	1 kBTU/hr	Existing	20.95	20	\$26.36	3%	at stock turnover	\$0.09	477.13	477.13	Annual Energy Outlook, 2015
Electronic Equipment Mfg	Cooling	Water-Cooled Chiller	1 kBTU/hr	Existing	28.62	25	\$12.65	3%	at stock turnover	\$0.03	651.81	651.81	Annual Energy Outlook, 2015
Electronic Equipment Mfg	Cooling	RTU	1 kBTU/hr	Existing	3.29	15	\$6.75	12%	at stock turnover	\$0.18	425.65	425.65	Annual Energy Outlook, 2015
Electronic Equipment Mfg	Cooling	Air-Source Heat Pump	1 kBTU/hr	Existing	6.34	15	\$21.65	2%	at stock turnover	\$0.18	86.70	86.70	Annual Energy Outlook, 2015
Electronic Equipment Mfg	Heating	Air-Source Heat Pump	1 kBTU/hr	Existing	4.27	15	\$21.65	2%	at stock turnover	\$0.18	58.36	58.36	Annual Energy Outlook, 2015
Electronic Equipment Mfg	Cooling	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Electronic Equipment Mfg	Heating	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Electronic Equipment Mfg	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	3%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Electronic Equipment Mfg	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	16%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Electronic Equipment Mfg	Ventilation	Ventilation	1000 CFM	Existing	2,269.39	20	\$1,219.71	100%	at stock turnover	\$0.04	1,905.06	1,905.06	AEG-BEST
Electronic Equipment Mfg	Interior Lighting	Screw-in	lamps	Existing	36.23	8	\$4.05	100%	at stock turnover	\$0.02	354.84	671.15	7th Power Plan
Electronic Equipment Mfg	Interior Lighting	High-Bay Fixtures	lamps	Existing	191.34	15	\$127.03	100%	at stock turnover	\$0.06	9,028.02	8,311.30	Annual Energy Outlook, 2015
Electronic Equipment Mfg	Interior Lighting	Linear Lighting	lamps	Existing	28.60	17	\$54.19	100%	at stock turnover	\$0.15	1,728.58	1,645.25	7th Power Plan
Electronic Equipment Mfg	Exterior Lighting	Screw-in	lamps	Existing	206.91	8	\$4.05	100%	at stock turnover	\$0.00	108.59	205.39	7th Power Plan
Electronic Equipment Mfg	Exterior Lighting	Area Lighting	lamps	Existing	2,507.81	15	\$45.69	100%	at stock turnover	\$0.00	2,347.58	2,223.77	Annual Energy Outlook, 2015
Electronic Equipment Mfg	Exterior Lighting	Linear Lighting	lamps	Existing	196.34	17	\$54.19	100%	at stock turnover	\$0.02	467.15	444.63	7th Power Plan
Electronic Equipment Mfg	Motors	Pumps	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Motors	Fans & Blowers	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Motors	Compressed Air	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Motors	Material Handling	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Motors	Other Motors	1 unit	Existing	0.00	10	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Process	Process Heating	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Process	Process Cooling	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Process	Process Refrigeration	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Process	Process Electrochemical	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Process	Process Other	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Cooling	Air-Cooled Chiller	1 kBtu/hr	New	18.03	20	\$26.36	3%	at stock turnover	\$0.11	637.22	637.22	Annual Energy Outlook, 2015

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Electronic Equipment Mfg	Cooling	Water-Cooled Chiller	1 kBTU/hr	New	24.90	25	\$12.65	3%	at stock turnover	\$0.03	805.00	805.00	Annual Energy Outlook, 2015
Electronic Equipment Mfg	Cooling	RTU	1 kBTU/hr	New	3.20	15	\$6.75	12%	at stock turnover	\$0.18	507.24	507.24	Annual Energy Outlook, 2015
Electronic Equipment Mfg	Cooling	Air-Source Heat Pump	1 kBTU/hr	New	6.16	15	\$21.65	2%	at stock turnover	\$0.18	109.76	109.76	Annual Energy Outlook, 2015
Electronic Equipment Mfg	Heating	Air-Source Heat Pump	1 kBTU/hr	New	4.09	15	\$21.65	2%	at stock turnover	\$0.18	72.90	72.90	Annual Energy Outlook, 2015
Electronic Equipment Mfg	Cooling	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Electronic Equipment Mfg	Heating	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Electronic Equipment Mfg	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	3%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Electronic Equipment Mfg	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	16%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Electronic Equipment Mfg	Ventilation	Ventilation	1000 CFM	New	1,964.09	20	\$1,219.71	100%	at stock turnover	\$0.05	2,195.48	2,195.48	AEG-BEST
Electronic Equipment Mfg	Interior Lighting	Screw-in	lamps	New	36.27	8	\$4.05	100%	at stock turnover	\$0.02	376.36	401.63	7th Power Plan
Electronic Equipment Mfg	Interior Lighting	High-Bay Fixtures	lamps	New	191.61	15	\$127.03	100%	at stock turnover	\$0.06	11,268.74	10,838.38	Annual Energy Outlook, 2015
Electronic Equipment Mfg	Interior Lighting	Linear Lighting	lamps	New	28.60	17	\$54.19	100%	at stock turnover	\$0.15	1,795.09	1,755.47	7th Power Plan
Electronic Equipment Mfg	Exterior Lighting	Screw-in	lamps	New	207.12	8	\$4.05	100%	at stock turnover	\$0.00	115.18	122.91	7th Power Plan
Electronic Equipment Mfg	Exterior Lighting	Area Lighting	lamps	New	2,507.81	15	\$45.69	100%	at stock turnover	\$0.00	2,910.38	2,836.04	Annual Energy Outlook, 2015
Electronic Equipment Mfg	Exterior Lighting	Linear Lighting	lamps	New	196.34	17	\$54.19	100%	at stock turnover	\$0.02	485.13	474.42	7th Power Plan
Electronic Equipment Mfg	Motors	Pumps	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Motors	Fans & Blowers	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Motors	Compressed Air	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Motors	Material Handling	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Electronic Equipment Mfg	Motors	Other Motors	1 unit	New	0.00	10	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Process	Process Heating	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Process	Process Cooling	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Process	Process Refrigeration	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Process	Process Electrochemical	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Process	Process Other	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Industrial Machinery	Cooling	Air-Cooled Chiller	1 kBTU/hr	Existing	20.95	20	\$26.36	3%	at stock turnover	\$0.09	103.86	103.86	Annual Energy Outlook, 2015
Industrial Machinery	Cooling	Water-Cooled Chiller	1 kBTU/hr	Existing	28.62	25	\$12.65	3%	at stock turnover	\$0.03	141.88	141.88	Annual Energy Outlook, 2015
Industrial Machinery	Cooling	RTU	1 kBTU/hr	Existing	3.29	15	\$6.75	12%	at stock turnover	\$0.18	92.65	92.65	Annual Energy Outlook, 2015
Industrial Machinery	Cooling	Air-Source Heat Pump	1 kBTU/hr	Existing	6.34	15	\$21.65	2%	at stock turnover	\$0.18	18.87	18.87	Annual Energy Outlook, 2015
Industrial Machinery	Heating	Air-Source Heat Pump	1 kBTU/hr	Existing	4.27	15	\$21.65	2%	at stock turnover	\$0.18	12.70	12.70	Annual Energy Outlook, 2015
Industrial Machinery	Cooling	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Industrial Machinery	Heating	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Industrial Machinery	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	3%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Industrial Machinery	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	16%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Industrial Machinery	Ventilation	Ventilation	1000 CFM	Existing	2,269.39	20	\$1,219.71	100%	at stock turnover	\$0.04	414.69	414.69	AEG-BEST
Industrial Machinery	Interior Lighting	Screw-in	lamps	Existing	36.23	8	\$4.05	100%	at stock turnover	\$0.02	115.26	218.01	7th Power Plan
Industrial Machinery	Interior Lighting	High-Bay Fixtures	lamps	Existing	191.34	15	\$127.03	100%	at stock turnover	\$0.06	2,932.52	2,699.71	Annual Energy Outlook, 2015

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Industrial Machinery	Interior Lighting	Linear Lighting	lamps	Existing	28.60	17	\$54.19	100%	at stock turnover	\$0.15	561.48	534.41	7th Power Plan
Industrial Machinery	Exterior Lighting	Screw-in	lamps	Existing	206.91	8	\$4.05	100%	at stock turnover	\$0.00	35.27	66.72	7th Power Plan
Industrial Machinery	Exterior Lighting	Area Lighting	lamps	Existing	2,507.81	15	\$45.69	100%	at stock turnover	\$0.00	762.55	722.33	Annual Energy Outlook, 2015
Industrial Machinery	Exterior Lighting	Linear Lighting	lamps	Existing	196.34	17	\$54.19	100%	at stock turnover	\$0.02	151.74	144.43	7th Power Plan
Industrial Machinery	Motors	Pumps	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Industrial Machinery	Motors	Fans & Blowers	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Industrial Machinery	Motors	Compressed Air	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Industrial Machinery	Motors	Material Handling	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Industrial Machinery	Motors	Other Motors	1 unit	Existing	0.00	10	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	N/A
Industrial Machinery	Process	Process Heating	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Industrial Machinery	Process	Process Cooling	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Industrial Machinery	Process	Process Refrigeration	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Industrial Machinery	Process	Process Electrochemical	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Industrial Machinery	Process	Process Other	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Industrial Machinery	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Industrial Machinery	Cooling	Air-Cooled Chiller	1 kBTU/hr	New	18.03	20	\$26.36	3%	at stock turnover	\$0.11	138.73	138.73	Annual Energy Outlook, 2015
Industrial Machinery	Cooling	Water-Cooled Chiller	1 kBTU/hr	New	24.90	25	\$12.65	3%	at stock turnover	\$0.03	175.25	175.25	Annual Energy Outlook, 2015
Industrial Machinery	Cooling	RTU	1 kBTU/hr	New	3.20	15	\$6.75	12%	at stock turnover	\$0.18	110.44	110.44	Annual Energy Outlook, 2015
Industrial Machinery	Cooling	Air-Source Heat Pump	1 kBTU/hr	New	6.16	15	\$21.65	2%	at stock turnover	\$0.18	23.90	23.90	Annual Energy Outlook, 2015

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Industrial Machinery	Heating	Air-Source Heat Pump	1 kBTU/hr	New	4.09	15	\$21.65	2%	at stock turnover	\$0.18	15.87	15.87	Annual Energy Outlook, 2015
Industrial Machinery	Cooling	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Industrial Machinery	Heating	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Industrial Machinery	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	3%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Industrial Machinery	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	16%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Industrial Machinery	Ventilation	Ventilation	1000 CFM	New	1,964.09	20	\$1,219.71	100%	at stock turnover	\$0.05	478.00	478.00	AEG-BEST
Industrial Machinery	Interior Lighting	Screw-in	lamps	New	36.27	8	\$4.05	100%	at stock turnover	\$0.02	122.28	130.50	7th Power Plan
Industrial Machinery	Interior Lighting	High-Bay Fixtures	lamps	New	191.61	15	\$127.03	100%	at stock turnover	\$0.06	3,661.12	3,521.32	Annual Energy Outlook, 2015
Industrial Machinery	Interior Lighting	Linear Lighting	lamps	New	28.60	17	\$54.19	100%	at stock turnover	\$0.15	583.26	570.39	7th Power Plan
Industrial Machinery	Exterior Lighting	Screw-in	lamps	New	207.12	8	\$4.05	100%	at stock turnover	\$0.00	37.42	39.94	7th Power Plan
Industrial Machinery	Exterior Lighting	Area Lighting	lamps	New	2,507.81	15	\$45.69	100%	at stock turnover	\$0.00	945.56	921.41	Annual Energy Outlook, 2015
Industrial Machinery	Exterior Lighting	Linear Lighting	lamps	New	196.34	17	\$54.19	100%	at stock turnover	\$0.02	157.63	154.15	7th Power Plan
Industrial Machinery	Motors	Pumps	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Industrial Machinery	Motors	Fans & Blowers	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Industrial Machinery	Motors	Compressed Air	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Industrial Machinery	Motors	Material Handling	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Industrial Machinery	Motors	Other Motors	1 unit	New	0.00	10	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	N/A
Industrial Machinery	Process	Process Heating	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Industrial Machinery	Process	Process Cooling	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Industrial Machinery	Process	Process Refrigeration	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Industrial Machinery	Process	Process Electrochemical	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Industrial Machinery	Process	Process Other	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Industrial Machinery	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Cooling	Air-Cooled Chiller	1 kBTU/hr	Existing	20.95	20	\$26.36	3%	at stock turnover	\$0.09	3.94	3.94	Annual Energy Outlook, 2015
Lumber Wood Products	Cooling	Water-Cooled Chiller	1 kBTU/hr	Existing	28.62	25	\$12.65	3%	at stock turnover	\$0.03	5.38	5.38	Annual Energy Outlook, 2015
Lumber Wood Products	Cooling	RTU	1 kBTU/hr	Existing	3.29	15	\$6.75	12%	at stock turnover	\$0.18	3.51	3.51	Annual Energy Outlook, 2015
Lumber Wood Products	Cooling	Air-Source Heat Pump	1 kBTU/hr	Existing	6.34	15	\$21.65	2%	at stock turnover	\$0.18	0.72	0.72	Annual Energy Outlook, 2015
Lumber Wood Products	Heating	Air-Source Heat Pump	1 kBTU/hr	Existing	4.27	15	\$21.65	2%	at stock turnover	\$0.18	0.48	0.48	Annual Energy Outlook, 2015
Lumber Wood Products	Cooling	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Lumber Wood Products	Heating	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Lumber Wood Products	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	3%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Lumber Wood Products	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	16%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Lumber Wood Products	Ventilation	Ventilation	1000 CFM	Existing	2,269.39	20	\$1,219.71	100%	at stock turnover	\$0.04	15.73	15.73	AEG-BEST
Lumber Wood Products	Interior Lighting	Screw-in	lamps	Existing	36.23	8	\$4.05	100%	at stock turnover	\$0.02	10.41	19.69	7th Power Plan
Lumber Wood Products	Interior Lighting	High-Bay Fixtures	lamps	Existing	191.34	15	\$127.03	100%	at stock turnover	\$0.06	264.90	243.87	Annual Energy Outlook, 2015
Lumber Wood Products	Interior Lighting	Linear Lighting	lamps	Existing	28.60	17	\$54.19	100%	at stock turnover	\$0.15	50.72	48.28	7th Power Plan
Lumber Wood Products	Exterior Lighting	Screw-in	lamps	Existing	206.91	8	\$4.05	100%	at stock turnover	\$0.00	3.19	6.03	7th Power Plan
Lumber Wood Products	Exterior Lighting	Area Lighting	lamps	Existing	2,507.81	15	\$45.69	100%	at stock turnover	\$0.00	68.88	65.25	Annual Energy Outlook, 2015

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Lumber Wood Products	Exterior Lighting	Linear Lighting	lamps	Existing	196.34	17	\$54.19	100%	at stock turnover	\$0.02	13.71	13.05	7th Power Plan
Lumber Wood Products	Motors	Pumps	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Motors	Fans & Blowers	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Motors	Compressed Air	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Motors	Material Handling	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Motors	Other Motors	1 unit	Existing	0.00	10	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Process	Process Heating	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Process	Process Cooling	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Process	Process Refrigeration	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Process	Process Electrochemical	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Process	Process Other	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Cooling	Air-Cooled Chiller	1 kBTU/hr	New	18.03	20	\$26.36	3%	at stock turnover	\$0.11	5.27	5.27	Annual Energy Outlook, 2015
Lumber Wood Products	Cooling	Water-Cooled Chiller	1 kBTU/hr	New	24.90	25	\$12.65	3%	at stock turnover	\$0.03	6.65	6.65	Annual Energy Outlook, 2015
Lumber Wood Products	Cooling	RTU	1 kBTU/hr	New	3.20	15	\$6.75	12%	at stock turnover	\$0.18	4.19	4.19	Annual Energy Outlook, 2015
Lumber Wood Products	Cooling	Air-Source Heat Pump	1 kBTU/hr	New	6.16	15	\$21.65	2%	at stock turnover	\$0.18	0.91	0.91	Annual Energy Outlook, 2015
Lumber Wood Products	Heating	Air-Source Heat Pump	1 kBTU/hr	New	4.09	15	\$21.65	2%	at stock turnover	\$0.18	0.60	0.60	Annual Energy Outlook, 2015
Lumber Wood Products	Cooling	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Lumber Wood Products	Heating	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Lumber Wood Products	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	3%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Lumber Wood Products	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	16%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Lumber Wood Products	Ventilation	Ventilation	1000 CFM	New	1,964.09	20	\$1,219.71	100%	at stock turnover	\$0.05	18.14	18.14	AEG-BEST
Lumber Wood Products	Interior Lighting	Screw-in	lamps	New	36.27	8	\$4.05	100%	at stock turnover	\$0.02	11.05	11.80	7th Power Plan
Lumber Wood Products	Interior Lighting	High-Bay Fixtures	lamps	New	191.61	15	\$127.03	100%	at stock turnover	\$0.06	330.95	318.32	Annual Energy Outlook, 2015
Lumber Wood Products	Interior Lighting	Linear Lighting	lamps	New	28.60	17	\$54.19	100%	at stock turnover	\$0.15	52.74	51.58	7th Power Plan
Lumber Wood Products	Exterior Lighting	Screw-in	lamps	New	207.12	8	\$4.05	100%	at stock turnover	\$0.00	3.38	3.61	7th Power Plan
Lumber Wood Products	Exterior Lighting	Area Lighting	lamps	New	2,507.81	15	\$45.69	100%	at stock turnover	\$0.00	85.47	83.29	Annual Energy Outlook, 2015
Lumber Wood Products	Exterior Lighting	Linear Lighting	lamps	New	196.34	17	\$54.19	100%	at stock turnover	\$0.02	14.25	13.94	7th Power Plan
Lumber Wood Products	Motors	Pumps	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Motors	Fans & Blowers	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Motors	Compressed Air	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Motors	Material Handling	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Motors	Other Motors	1 unit	New	0.00	10	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Process	Process Heating	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Process	Process Cooling	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Process	Process Refrigeration	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Process	Process Electrochemical	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Process	Process Other	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Lumber Wood Products	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Metal Mfg	Cooling	Air-Cooled Chiller	1 kBTU/hr	Existing	20.95	20	\$26.36	3%	at stock turnover	\$0.09	115.91	115.91	Annual Energy Outlook, 2015
Metal Mfg	Cooling	Water-Cooled Chiller	1 kBTU/hr	Existing	28.62	25	\$12.65	3%	at stock turnover	\$0.03	158.35	158.35	Annual Energy Outlook, 2015
Metal Mfg	Cooling	RTU	1 kBTU/hr	Existing	3.29	15	\$6.75	12%	at stock turnover	\$0.18	103.41	103.41	Annual Energy Outlook, 2015
Metal Mfg	Cooling	Air-Source Heat Pump	1 kBTU/hr	Existing	6.34	15	\$21.65	2%	at stock turnover	\$0.18	21.06	21.06	Annual Energy Outlook, 2015
Metal Mfg	Heating	Air-Source Heat Pump	1 kBTU/hr	Existing	4.27	15	\$21.65	2%	at stock turnover	\$0.18	14.18	14.18	Annual Energy Outlook, 2015
Metal Mfg	Cooling	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Metal Mfg	Heating	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Metal Mfg	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	3%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Metal Mfg	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	16%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Metal Mfg	Ventilation	Ventilation	1000 CFM	Existing	2,269.39	20	\$1,219.71	100%	at stock turnover	\$0.04	462.81	462.81	AEG-BEST
Metal Mfg	Interior Lighting	Screw-in	lamps	Existing	36.23	8	\$4.05	100%	at stock turnover	\$0.02	190.21	359.77	7th Power Plan
Metal Mfg	Interior Lighting	High-Bay Fixtures	lamps	Existing	191.34	15	\$127.03	100%	at stock turnover	\$0.06	4,839.49	4,455.29	Annual Energy Outlook, 2015
Metal Mfg	Interior Lighting	Linear Lighting	lamps	Existing	28.60	17	\$54.19	100%	at stock turnover	\$0.15	926.61	881.94	7th Power Plan
Metal Mfg	Exterior Lighting	Screw-in	lamps	Existing	206.91	8	\$4.05	100%	at stock turnover	\$0.00	58.21	110.10	7th Power Plan
Metal Mfg	Exterior Lighting	Area Lighting	lamps	Existing	2,507.81	15	\$45.69	100%	at stock turnover	\$0.00	1,258.43	1,192.06	Annual Energy Outlook, 2015
Metal Mfg	Exterior Lighting	Linear Lighting	lamps	Existing	196.34	17	\$54.19	100%	at stock turnover	\$0.02	250.42	238.35	7th Power Plan
Metal Mfg	Motors	Pumps	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Metal Mfg	Motors	Fans & Blowers	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Metal Mfg	Motors	Compressed Air	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Metal Mfg	Motors	Material Handling	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Metal Mfg	Motors	Other Motors	1 unit	Existing	0.00	10	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	N/A
Metal Mfg	Process	Process Heating	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Metal Mfg	Process	Process Cooling	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Metal Mfg	Process	Process Refrigeration	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Metal Mfg	Process	Process Electrochemical	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Metal Mfg	Process	Process Other	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Metal Mfg	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Metal Mfg	Cooling	Air-Cooled Chiller	1 kBTU/hr	New	18.03	20	\$26.36	3%	at stock turnover	\$0.11	154.80	154.80	Annual Energy Outlook, 2015
Metal Mfg	Cooling	Water-Cooled Chiller	1 kBTU/hr	New	24.90	25	\$12.65	3%	at stock turnover	\$0.03	195.56	195.56	Annual Energy Outlook, 2015
Metal Mfg	Cooling	RTU	1 kBTU/hr	New	3.20	15	\$6.75	12%	at stock turnover	\$0.18	123.23	123.23	Annual Energy Outlook, 2015
Metal Mfg	Cooling	Air-Source Heat Pump	1 kBTU/hr	New	6.16	15	\$21.65	2%	at stock turnover	\$0.18	26.66	26.66	Annual Energy Outlook, 2015
Metal Mfg	Heating	Air-Source Heat Pump	1 kBTU/hr	New	4.09	15	\$21.65	2%	at stock turnover	\$0.18	17.71	17.71	Annual Energy Outlook, 2015
Metal Mfg	Cooling	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Metal Mfg	Heating	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Metal Mfg	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	3%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Metal Mfg	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	16%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Metal Mfg	Ventilation	Ventilation	1000 CFM	New	1,964.09	20	\$1,219.71	100%	at stock turnover	\$0.05	533.36	533.36	AEG-BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Metal Mfg	Interior Lighting	Screw-in	lamps	New	36.27	8	\$4.05	100%	at stock turnover	\$0.02	201.75	215.29	7th Power Plan
Metal Mfg	Interior Lighting	High-Bay Fixtures	lamps	New	191.61	15	\$127.03	100%	at stock turnover	\$0.06	6,040.53	5,809.84	Annual Energy Outlook, 2015
Metal Mfg	Interior Lighting	Linear Lighting	lamps	New	28.60	17	\$54.19	100%	at stock turnover	\$0.15	962.24	941.00	7th Power Plan
Metal Mfg	Exterior Lighting	Screw-in	lamps	New	207.12	8	\$4.05	100%	at stock turnover	\$0.00	61.74	65.89	7th Power Plan
Metal Mfg	Exterior Lighting	Area Lighting	lamps	New	2,507.81	15	\$45.69	100%	at stock turnover	\$0.00	1,560.09	1,520.24	Annual Energy Outlook, 2015
Metal Mfg	Exterior Lighting	Linear Lighting	lamps	New	196.34	17	\$54.19	100%	at stock turnover	\$0.02	260.05	254.31	7th Power Plan
Metal Mfg	Motors	Pumps	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Metal Mfg	Motors	Fans & Blowers	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Metal Mfg	Motors	Compressed Air	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Metal Mfg	Motors	Material Handling	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Metal Mfg	Motors	Other Motors	1 unit	New	0.00	10	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	N/A
Metal Mfg	Process	Process Heating	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Metal Mfg	Process	Process Cooling	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Metal Mfg	Process	Process Refrigeration	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Metal Mfg	Process	Process Electrochemical	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Metal Mfg	Process	Process Other	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Metal Mfg	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Misc. Mfg	Cooling	Air-Cooled Chiller	1 kBTU/hr	Existing	20.95	20	\$26.36	3%	at stock turnover	\$0.09	564.60	564.60	Annual Energy Outlook, 2015
Misc. Mfg	Cooling	Water-Cooled Chiller	1 kBTU/hr	Existing	28.62	25	\$12.65	3%	at stock turnover	\$0.03	771.30	771.30	Annual Energy Outlook, 2015

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Misc. Mfg	Cooling	RTU	1 kBTU/hr	Existing	3.29	15	\$6.75	12%	at stock turnover	\$0.18	503.68	503.68	Annual Energy Outlook, 2015
Misc. Mfg	Cooling	Air-Source Heat Pump	1 kBTU/hr	Existing	6.34	15	\$21.65	2%	at stock turnover	\$0.18	102.59	102.59	Annual Energy Outlook, 2015
Misc. Mfg	Heating	Air-Source Heat Pump	1 kBTU/hr	Existing	4.27	15	\$21.65	2%	at stock turnover	\$0.18	69.06	69.06	Annual Energy Outlook, 2015
Misc. Mfg	Cooling	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Misc. Mfg	Heating	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Misc. Mfg	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	3%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Misc. Mfg	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	16%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Misc. Mfg	Ventilation	Ventilation	1000 CFM	Existing	2,269.39	20	\$1,219.71	100%	at stock turnover	\$0.04	2,254.29	2,254.29	AEG-BEST
Misc. Mfg	Interior Lighting	Screw-in	lamps	Existing	36.23	8	\$4.05	100%	at stock turnover	\$0.02	674.37	1,275.50	7th Power Plan
Misc. Mfg	Interior Lighting	High-Bay Fixtures	lamps	Existing	191.34	15	\$127.03	100%	at stock turnover	\$0.06	17,157.55	15,795.43	Annual Energy Outlook, 2015
Misc. Mfg	Interior Lighting	Linear Lighting	lamps	Existing	28.60	17	\$54.19	100%	at stock turnover	\$0.15	3,285.12	3,126.75	7th Power Plan
Misc. Mfg	Exterior Lighting	Screw-in	lamps	Existing	206.91	8	\$4.05	100%	at stock turnover	\$0.00	206.38	390.35	7th Power Plan
Misc. Mfg	Exterior Lighting	Area Lighting	lamps	Existing	2,507.81	15	\$45.69	100%	at stock turnover	\$0.00	4,461.52	4,226.22	Annual Energy Outlook, 2015
Misc. Mfg	Exterior Lighting	Linear Lighting	lamps	Existing	196.34	17	\$54.19	100%	at stock turnover	\$0.02	887.81	845.01	7th Power Plan
Misc. Mfg	Motors	Pumps	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Misc. Mfg	Motors	Fans & Blowers	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Misc. Mfg	Motors	Compressed Air	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Misc. Mfg	Motors	Material Handling	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Misc. Mfg	Motors	Other Motors	1 unit	Existing	0.00	10	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Misc. Mfg	Process	Process Heating	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Misc. Mfg	Process	Process Cooling	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Misc. Mfg	Process	Process Refrigeration	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Misc. Mfg	Process	Process Electrochemical	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Misc. Mfg	Process	Process Other	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Misc. Mfg	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Misc. Mfg	Cooling	Air-Cooled Chiller	1 kBTU/hr	New	18.03	20	\$26.36	3%	at stock turnover	\$0.11	753.99	753.99	Annual Energy Outlook, 2015
Misc. Mfg	Cooling	Water-Cooled Chiller	1 kBTU/hr	New	24.90	25	\$12.65	3%	at stock turnover	\$0.03	952.54	952.54	Annual Energy Outlook, 2015
Misc. Mfg	Cooling	RTU	1 kBTU/hr	New	3.20	15	\$6.75	12%	at stock turnover	\$0.18	600.18	600.18	Annual Energy Outlook, 2015
Misc. Mfg	Cooling	Air-Source Heat Pump	1 kBTU/hr	New	6.16	15	\$21.65	2%	at stock turnover	\$0.18	129.87	129.87	Annual Energy Outlook, 2015
Misc. Mfg	Heating	Air-Source Heat Pump	1 kBTU/hr	New	4.09	15	\$21.65	2%	at stock turnover	\$0.18	86.25	86.25	Annual Energy Outlook, 2015
Misc. Mfg	Cooling	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Misc. Mfg	Heating	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Misc. Mfg	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	3%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Misc. Mfg	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	16%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Misc. Mfg	Ventilation	Ventilation	1000 CFM	New	1,964.09	20	\$1,219.71	100%	at stock turnover	\$0.05	2,597.77	2,597.77	AEG-BEST
Misc. Mfg	Interior Lighting	Screw-in	lamps	New	36.27	8	\$4.05	100%	at stock turnover	\$0.02	715.21	763.20	7th Power Plan
Misc. Mfg	Interior Lighting	High-Bay Fixtures	lamps	New	191.61	15	\$127.03	100%	at stock turnover	\$0.06	21,414.39	20,596.52	Annual Energy Outlook, 2015
Misc. Mfg	Interior Lighting	Linear Lighting	lamps	New	28.60	17	\$54.19	100%	at stock turnover	\$0.15	3,411.15	3,335.85	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Misc. Mfg	Exterior Lighting	Screw-in	lamps	New	207.12	8	\$4.05	100%	at stock turnover	\$0.00	218.88	233.57	7th Power Plan
Misc. Mfg	Exterior Lighting	Area Lighting	lamps	New	2,507.81	15	\$45.69	100%	at stock turnover	\$0.00	5,530.71	5,389.42	Annual Energy Outlook, 2015
Misc. Mfg	Exterior Lighting	Linear Lighting	lamps	New	196.34	17	\$54.19	100%	at stock turnover	\$0.02	921.87	901.52	7th Power Plan
Misc. Mfg	Motors	Pumps	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Misc. Mfg	Motors	Fans & Blowers	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Misc. Mfg	Motors	Compressed Air	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Misc. Mfg	Motors	Material Handling	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Misc. Mfg	Motors	Other Motors	1 unit	New	0.00	10	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	N/A
Misc. Mfg	Process	Process Heating	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Misc. Mfg	Process	Process Cooling	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Misc. Mfg	Process	Process Refrigeration	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Misc. Mfg	Process	Process Electrochemical	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Misc. Mfg	Process	Process Other	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Misc. Mfg	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Agriculture	Cooling	Insulation - Ceiling	sqft	Existing	0.18	45	\$1.28	15%	25%	\$0.11	8.87	9.74	Building Energy Simulation Tool
Agriculture	Heating	Insulation - Ceiling	sqft	Existing	0.40	45	\$1.28	15%	25%	\$0.11	22.13	22.99	Building Energy Simulation Tool
Agriculture	Ventilation	Insulation - Ceiling	sqft	Existing	0.01	45	\$1.28	15%	25%	\$0.11	3.40	4.10	Building Energy Simulation Tool
Agriculture	Cooling	Insulation - Ducting	sqft	Existing	0.07	20	\$0.84	15%	25%	\$0.62	3.42	3.78	Building Energy Simulation Tool
Agriculture	Heating	Insulation - Ducting	sqft	Existing	0.02	20	\$0.84	15%	25%	\$0.62	0.93	0.97	Building Energy Simulation Tool

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Agriculture	Ventilation	Insulation - Ducting	sqft	Existing	0.00	20	\$0.84	15%	25%	\$0.62	0.14	0.17	Building Energy Simulation Tool
Agriculture	Cooling	Insulation - Wall Cavity	sqft	Existing	0.00	45	\$0.15	45%	50%	\$0.01	0.08	0.08	Building Energy Simulation Tool
Agriculture	Heating	Insulation - Wall Cavity	sqft	Existing	0.58	45	\$0.15	45%	50%	\$0.01	16.16	16.19	Building Energy Simulation Tool
Agriculture	Ventilation	Insulation - Wall Cavity	sqft	Existing	0.02	45	\$0.15	45%	50%	\$0.01	2.31	2.75	Building Energy Simulation Tool
Agriculture	Cooling	HVAC - Duct Repair and Sealing	sqft	Existing	0.02	18	\$0.00	15%	25%	\$0.00	1.25	1.32	Building Energy Simulation Tool
Agriculture	Heating	HVAC - Duct Repair and Sealing	sqft	Existing	0.04	18	\$0.00	15%	25%	\$0.00	2.28	2.28	Building Energy Simulation Tool
Agriculture	Ventilation	HVAC - Duct Repair and Sealing	sqft	Existing	0.00	18	\$0.00	15%	25%	\$0.00	0.33	0.39	Building Energy Simulation Tool
Agriculture	Cooling	Chiller - Chilled Water Reset	sqft	Existing	0.07	10	\$0.01	15%	45%	\$0.02	2.89	3.13	AEG-BEST
Agriculture	Cooling	Chiller - Chilled Water Variable-Flow System	sqft	Existing	0.36	15	\$0.50	15%	60%	\$0.11	22.95	25.54	AEG-BEST
Agriculture	Cooling	Chiller - Variable Speed Fans	sqft	Existing	0.14	15	\$0.03	15%	75%	\$0.02	11.68	12.65	New Jersey TRM
Agriculture	Cooling	HVAC - Economizer	sqft	Existing	0.19	10	\$0.25	18%	30%	\$0.13	12.02	13.42	AEG-BEST
Agriculture	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.25	15%	35%	\$7.50	1.33	1.71	7th Power Plan
Agriculture	Cooling	Destratification Fans (HVLS)	sqft	Existing	0.25	15	\$0.63	15%	50%	\$0.04	46.72	50.51	AEG Research
Agriculture	Heating	Destratification Fans (HVLS)	sqft	Existing	1.05	15	\$0.63	15%	50%	\$0.04	221.62	223.18	AEG Research
Agriculture	Cooling	RTU - Maintenance	sqft	Existing	0.12	3	\$0.07	15%	75%	\$0.15	26.17	29.56	AEG Research
Agriculture	Cooling	Thermostat - WiFi/Interactive	sqft	Existing	0.36	5	\$0.66	5%	15%	\$0.10	17.96	19.56	7th Power Plan
Agriculture	Heating	Thermostat - WiFi/Interactive	sqft	Existing	0.81	5	\$0.66	5%	15%	\$0.10	44.79	46.15	7th Power Plan
Agriculture	Ventilation	Thermostat - WiFi/Interactive	sqft	Existing	0.03	5	\$0.66	5%	15%	\$0.10	6.88	8.22	7th Power Plan
Agriculture	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.23	15	\$0.35	3%	17%	\$0.10	61.19	77.30	7th Power Plan
Agriculture	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.31	15	\$0.58	3%	17%	\$0.12	83.43	106.98	7th Power Plan
Agriculture	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	Existing	0.02	15	\$0.00	1%	2%	\$0.01	0.61	0.90	7th Power Plan

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Agriculture	Interior Lighting	Interior Lighting - Timeclocks and Timers	sqft	Existing	0.00	8	\$0.00	7%	7%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Agriculture	Interior Lighting	Interior Lighting - Skylights	sqft	Existing	0.00	15	\$1.01	15%	23%	\$0.00	0.00	0.00	AEG Research
Agriculture	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	sqft	Existing	0.04	16	\$1.81	5%	40%	\$2.85	20.93	32.19	7th Power Plan
Agriculture	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	Existing	0.04	11	\$0.00	15%	50%	\$0.01	20.44	29.21	Illinois TRM
Agriculture	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	sqft	Existing	0.05	8	\$0.03	15%	25%	\$0.07	24.61	37.94	7th Power Plan
Agriculture	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	Existing	0.03	8	\$0.02	33%	60%	\$0.07	34.16	54.22	Pacific Gas and Electric Research
Agriculture	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	Existing	0.03	7	\$1.19	15%	30%	\$3.70	21.30	35.84	AEG Research
Agriculture	Process	Process - Conductivity Controls	employee	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Agriculture	Process	Process - Timers and Controls	employee	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Agriculture	Motors	Process - Timers and Controls	employee	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Agriculture	Process	Refrigeration - Floating Head Pressure	employee	Existing	189.40	15	\$186.21	20%	50%	\$0.08	189.55	191.22	RTF Workbook
Agriculture	Process	Refrigeration - System Optimization	employee	Existing	306.80	15	\$131.13	20%	50%	\$0.04	307.99	307.99	AEG Research
Agriculture	Motors	Pumping System - Equipment Upgrade	employee	Existing	110.92	10	\$16.18	9%	38%	\$0.02	105.87	108.05	7th Power Plan
Agriculture	Motors	Pumping System - System Optimization	employee	Existing	81.10	12	\$24.66	9%	38%	\$0.03	74.74	77.35	UNIDO Study on Industrial Energy Efficiency
Agriculture	Motors	Pumping System - Variable Speed Drive	employee	Existing	80.88	10	\$25.65	9%	38%	\$0.03	74.46	77.22	UNIDO Study on Industrial Energy Efficiency
Agriculture	Motors	Fan System - Equipment Upgrade	employee	Existing	386.76	10	\$38.01	9%	38%	\$0.01	361.51	363.21	UNIDO Study on Industrial Energy Efficiency
Agriculture	Motors	Fan System - Flow Optimization	employee	Existing	447.74	10	\$62.89	9%	38%	\$0.02	415.87	423.51	UNIDO Study on Industrial Energy Efficiency
Agriculture	Motors	Fan System - Variable Speed Drive	employee	Existing	658.89	10	\$316.44	9%	38%	\$0.05	602.14	633.81	UNIDO Study on Industrial Energy Efficiency
Agriculture	Motors	Compressed Air - Equipment Upgrade	employee	Existing	263.48	10	\$19.17	17%	50%	\$0.01	295.63	295.63	7th Power Plan

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Agriculture	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	Existing	0.00	15	\$0.00	16%	38%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Agriculture	Motors	Compressed Air - Refrigerated Cycling Dryers	employee	Existing	0.00	10	\$0.00	16%	30%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Agriculture	Motors	Compressed Air - System Controls	employee	Existing	57.50	10	\$13.71	9%	38%	\$0.03	54.48	56.63	UNIDO Study on Industrial Energy Efficiency
Agriculture	Motors	Compressed Air - Leak Management Program	employee	Existing	147.91	10	\$13.78	18%	75%	\$0.01	282.91	287.08	7th Power Plan
Agriculture	Motors	Compressed Air - Variable Speed Drive	employee	Existing	103.12	15	\$84.04	26%	45%	\$0.06	64.06	69.37	UNIDO Study on Industrial Energy Efficiency
Agriculture	Motors	Compressed Air - Low Pressure-Drop Filters	employee	Existing	3.51	10	\$1.30	17%	50%	\$0.04	3.85	4.08	Illinois TRM
Agriculture	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	Existing	21.70	10	\$4.20	17%	50%	\$0.02	24.04	24.85	UNIDO Study on Industrial Energy Efficiency
Agriculture	Motors	Compressed Air - Outside Air Intake	employee	Existing	0.00	20	\$0.00	17%	50%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Agriculture	Motors	Compressed Air - Receiver Capacity Addition	employee	Existing	21.06	15	\$11.56	17%	50%	\$0.04	23.08	24.50	UNIDO Study on Industrial Energy Efficiency
Agriculture	Motors	Material Handling - Variable Speed Drive	employee	Existing	771.44	10	\$278.34	25%	45%	\$0.04	498.01	517.29	7th Power Plan
Agriculture	Motors	Motors - Green Rewind (<100 HP)	employee	Existing	19.34	10	\$8.50	10%	50%	\$0.05	99.33	104.33	7th Power Plan
Agriculture	Motors	Motors - Green Rewind (100 HP+)	employee	Existing	10.93	10	\$3.02	6%	25%	\$0.03	26.84	27.82	7th Power Plan
Agriculture	Motors	Switch from Belt Drive to Direct Drive	employee	Existing	166.05	12	\$37.29	16%	25%	\$0.02	204.75	210.38	2015-mdu-irp-report---volume-iii.pdf
Agriculture	Motors	Motors - Synchronous Belts	employee	Existing	43.97	10	\$11.22	16%	36%	\$0.03	116.60	121.33	7th Power Plan
Agriculture	Miscellaneous	Agriculture - Engine Block Timer	employee	Existing	612.40	3	\$7.55	15%	33%	\$0.00	0.00	502.72	Vermont TRM
Agriculture	Motors	Agriculture - Live Stock Waterer	employee	Existing	260.01	10	\$142.48	15%	17%	\$0.06	16.56	17.67	Ontario Power TRM
Agriculture	Process	Dairy - Milk Precoolers	employee	Existing	1,263.43	15	\$592.55	15%	15%	\$0.04	16.56	16.67	Ontario Power TRM
Agriculture	Process	Clean Room: Change Filter Strategy	employee	Existing	19.58	15	\$0.14	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Agriculture	Process	Clean Room: Chiller Optimize	employee	Existing	378.96	15	\$35.09	0%	0%	\$0.01	0.00	0.00	7th Power Plan

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Agriculture	Process	Clean Room: Clean Room HVAC	employee	Existing	230.10	15	\$42.35	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Agriculture	Process	Elec Chip Fab: Solidstate Chiller	employee	Existing	227.29	15	\$133.03	0%	0%	\$0.05	0.00	0.00	7th Power Plan
Agriculture	Process	Elec Chip Fab: Eliminate Exhaust	employee	Existing	2.45	15	\$0.52	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Agriculture	Process	Elec Chip Fab: Exhaust Injector	employee	Existing	4.83	15	\$2.51	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Agriculture	Process	Elec Chip Fab: Reduce Gas Pressure	employee	Existing	4.89	15	\$0.05	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Agriculture	Motors	Panel: Hydraulic Press	employee	Existing	1,162.98	10	\$278.17	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Agriculture	Motors	Wood: Replace Pneumatic Conveyor	employee	Existing	1,263.65	10	\$20.83	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Agriculture	Process	Metal: New Arc Furnace	employee	Existing	683.70	10	\$71.77	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Agriculture	Process	Paper: Premium Control Large Material	employee	Existing	254.23	10	\$128.75	0%	0%	\$0.06	0.00	0.00	7th Power Plan
Agriculture	Process	Paper: Efficient Pulp Screen	employee	Existing	206.15	10	\$42.41	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Agriculture	Process	Kraft: Effluent Treatment System	employee	Existing	206.15	10	\$17.39	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Agriculture	Motors	Kraft: Efficient Agitator	employee	Existing	2,140.32	10	\$207.58	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Agriculture	Process	Mech Pulp: Premium Process	employee	Existing	2.31	5	\$0.30	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Agriculture	Motors	Mech Pulp: Refiner Plate Improvement	employee	Existing	18.39	1	\$0.79	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Agriculture	Cooling	Transformer - High Efficiency	employee	Existing	33.03	10	\$44.85	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Agriculture	Heating	Transformer - High Efficiency	employee	Existing	73.94	10	\$44.85	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Agriculture	Ventilation	Transformer - High Efficiency	employee	Existing	2.28	10	\$44.85	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Agriculture	Interior Lighting	Transformer - High Efficiency	employee	Existing	13.02	10	\$44.85	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Agriculture	Exterior Lighting	Transformer - High Efficiency	employee	Existing	2.69	10	\$44.85	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Agriculture	Motors	Transformer - High Efficiency	employee	Existing	126.11	10	\$44.85	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Agriculture	Process	Transformer - High Efficiency	employee	Existing	101.08	10	\$44.85	15%	15%	\$0.01	0.00	0.00	7th Power Plan

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Agriculture	Miscellaneous	Transformer - High Efficiency	employee	Existing	21.43	10	\$44.85	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Agriculture	Cooling	Strategic Energy Management	employee	Existing	90.39	3	\$275.45	0%	5%	\$0.07	2.47	2.73	AEG Research
Agriculture	Heating	Strategic Energy Management	employee	Existing	210.88	3	\$275.45	0%	5%	\$0.07	6.43	6.71	AEG Research
Agriculture	Ventilation	Strategic Energy Management	employee	Existing	6.52	3	\$275.45	0%	5%	\$0.07	0.99	1.20	AEG Research
Agriculture	Interior Lighting	Strategic Energy Management	employee	Existing	36.69	3	\$275.45	0%	5%	\$0.07	4.70	6.49	AEG Research
Agriculture	Exterior Lighting	Strategic Energy Management	employee	Existing	7.70	3	\$275.45	0%	5%	\$0.07	0.97	1.41	AEG Research
Agriculture	Motors	Strategic Energy Management	employee	Existing	360.77	3	\$275.45	0%	5%	\$0.07	53.98	57.28	AEG Research
Agriculture	Process	Strategic Energy Management	employee	Existing	289.09	3	\$275.45	0%	5%	\$0.07	44.45	45.25	AEG Research
Agriculture	Miscellaneous	Strategic Energy Management	employee	Existing	61.24	3	\$275.45	0%	5%	\$0.07	11.89	9.54	AEG Research
Agriculture	Interior Lighting	Commissioning	employee	Existing	42.28	3	\$405.20	0%	0%	\$0.13	0.00	0.00	AEG Research
Agriculture	Exterior Lighting	Commissioning	employee	Existing	8.88	3	\$405.20	0%	0%	\$0.13	0.00	0.00	AEG Research
Agriculture	Motors	Commissioning	employee	Existing	415.76	3	\$405.20	0%	0%	\$0.13	0.00	0.00	AEG Research
Agriculture	Process	Commissioning	employee	Existing	333.14	3	\$405.20	0%	0%	\$0.13	0.00	0.00	AEG Research
Agriculture	Miscellaneous	Commissioning	employee	Existing	70.56	3	\$405.20	0%	0%	\$0.13	0.00	0.00	AEG Research
Agriculture	Interior Lighting	Retrocommissioning	employee	Existing	42.70	3	\$257.23	5%	39%	\$0.08	37.53	51.29	AEG Research
Agriculture	Exterior Lighting	Retrocommissioning	employee	Existing	8.96	3	\$257.23	5%	39%	\$0.08	7.78	11.15	AEG Research
Agriculture	Motors	Retrocommissioning	employee	Existing	420.37	3	\$257.23	5%	39%	\$0.08	430.94	452.94	AEG Research
Agriculture	Process	Retrocommissioning	employee	Existing	336.92	3	\$257.23	5%	39%	\$0.08	354.88	357.93	AEG Research
Agriculture	Miscellaneous	Retrocommissioning	employee	Existing	71.43	3	\$257.23	5%	39%	\$0.08	94.92	75.50	AEG Research
Agriculture	Motors	Municipal Sewage Treatment	employee	Existing	14.05	12	\$8.13	0%	0%	\$0.05	0.00	0.00	7th Power Plan
Agriculture	Motors	Municipal Water Supply Treatment	employee	Existing	0.00	12	\$0.00	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Agriculture	Cooling	Insulation - Ceiling	sqft	New	0.17	45	\$1.28	15%	25%	\$0.12	3.95	3.98	Building Energy Simulation Tool

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Agriculture	Heating	Insulation - Ceiling	sqft	New	0.40	45	\$1.28	15%	25%	\$0.12	9.73	9.70	Building Energy Simulation Tool
Agriculture	Ventilation	Insulation - Ceiling	sqft	New	0.01	45	\$1.28	15%	25%	\$0.12	1.20	1.32	Building Energy Simulation Tool
Agriculture	Cooling	Insulation - Ducting	sqft	New	0.07	20	\$0.84	15%	25%	\$0.66	1.53	1.55	Building Energy Simulation Tool
Agriculture	Heating	Insulation - Ducting	sqft	New	0.02	20	\$0.84	15%	25%	\$0.66	0.41	0.41	Building Energy Simulation Tool
Agriculture	Ventilation	Insulation - Ducting	sqft	New	0.00	20	\$0.84	15%	25%	\$0.66	0.05	0.06	Building Energy Simulation Tool
Agriculture	Cooling	Insulation - Wall Cavity	sqft	New	0.00	45	\$0.15	45%	50%	\$0.01	0.03	0.03	Building Energy Simulation Tool
Agriculture	Heating	Insulation - Wall Cavity	sqft	New	0.54	45	\$0.15	45%	50%	\$0.01	6.59	6.60	Building Energy Simulation Tool
Agriculture	Ventilation	Insulation - Wall Cavity	sqft	New	0.01	45	\$0.15	45%	50%	\$0.01	0.80	0.88	Building Energy Simulation Tool
Agriculture	Cooling	HVAC - Duct Repair and Sealing	sqft	New	0.02	18	\$0.00	15%	25%	\$0.00	0.50	0.50	Building Energy Simulation Tool
Agriculture	Heating	HVAC - Duct Repair and Sealing	sqft	New	0.04	18	\$0.00	15%	25%	\$0.00	0.91	0.91	Building Energy Simulation Tool
Agriculture	Ventilation	HVAC - Duct Repair and Sealing	sqft	New	0.00	18	\$0.00	15%	25%	\$0.00	0.11	0.12	Building Energy Simulation Tool
Agriculture	Cooling	Chiller - Chilled Water Reset	sqft	New	0.05	10	\$0.01	15%	45%	\$0.02	0.36	0.38	AEG-BEST
Agriculture	Cooling	Chiller - Chilled Water Variable-Flow System	sqft	New	0.30	15	\$0.50	15%	60%	\$0.13	3.87	3.97	AEG-BEST
Agriculture	Cooling	Chiller - Variable Speed Fans	sqft	New	0.11	15	\$0.03	15%	75%	\$0.02	1.90	1.95	New Jersey TRM
Agriculture	Cooling	HVAC - Economizer	sqft	New	0.18	10	\$0.25	18%	30%	\$0.14	1.71	1.76	AEG-BEST
Agriculture	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.25	15%	35%	\$8.97	0.21	0.25	7th Power Plan
Agriculture	Cooling	Destratification Fans (HVLS)	sqft	New	0.22	15	\$0.63	15%	50%	\$0.04	8.48	8.71	AEG Research
Agriculture	Heating	Destratification Fans (HVLS)	sqft	New	0.99	15	\$0.63	15%	50%	\$0.04	40.53	40.61	AEG Research
Agriculture	Cooling	RTU - Maintenance	sqft	New	0.12	3	\$0.07	15%	75%	\$0.16	0.57	0.61	AEG Research
Agriculture	Cooling	Thermostat - WiFi/Interactive	sqft	New	0.34	5	\$0.66	5%	15%	\$0.10	1.03	1.06	7th Power Plan
Agriculture	Heating	Thermostat - WiFi/Interactive	sqft	New	0.79	5	\$0.66	5%	15%	\$0.10	2.54	2.54	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Agriculture	Ventilation	Thermostat - WiFi/Interactive	sqft	New	0.02	5	\$0.66	5%	15%	\$0.10	0.31	0.38	7th Power Plan
Agriculture	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.18	15	\$0.35	22%	41%	\$0.10	72.85	85.14	7th Power Plan
Agriculture	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.25	15	\$0.58	22%	41%	\$0.12	98.69	115.96	7th Power Plan
Agriculture	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	New	0.02	15	\$0.00	1%	2%	\$0.01	0.09	0.11	7th Power Plan
Agriculture	Interior Lighting	Interior Lighting - Timeclocks and Timers	sqft	New	0.00	8	\$0.00	7%	7%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Agriculture	Interior Lighting	Interior Lighting - Skylights	sqft	New	0.00	15	\$1.01	18%	24%	\$0.00	0.00	0.00	AEG Research
Agriculture	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	sqft	New	0.03	16	\$1.81	5%	40%	\$2.85	3.85	4.95	7th Power Plan
Agriculture	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	New	0.03	11	\$0.00	15%	50%	\$0.01	3.00	3.89	Illinois TRM
Agriculture	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	sqft	New	0.04	8	\$0.03	15%	25%	\$0.07	2.76	3.85	7th Power Plan
Agriculture	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	New	0.02	8	\$0.02	44%	60%	\$0.07	2.36	3.27	Pacific Gas and Electric Research
Agriculture	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	New	0.02	7	\$1.19	15%	30%	\$3.69	2.40	3.35	AEG Research
Agriculture	Process	Process - Conductivity Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Agriculture	Process	Process - Timers and Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Agriculture	Motors	Process - Timers and Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Agriculture	Process	Refrigeration - Floating Head Pressure	employee	New	190.94	15	\$131.60	20%	50%	\$0.06	37.11	37.07	RTF Workbook
Agriculture	Process	Refrigeration - System Optimization	employee	New	306.80	15	\$46.02	20%	50%	\$0.01	59.54	59.54	AEG Research
Agriculture	Motors	Pumping System - Equipment Upgrade	employee	New	112.29	10	\$16.18	9%	38%	\$0.02	16.26	16.22	7th Power Plan
Agriculture	Motors	Pumping System - System Optimization	employee	New	83.78	12	\$24.66	9%	38%	\$0.03	19.96	19.83	UNIDO Study on Industrial Energy Efficiency
Agriculture	Motors	Pumping System - Variable Speed Drive	employee	New	83.69	10	\$25.65	9%	38%	\$0.03	18.42	18.29	UNIDO Study on Industrial Energy Efficiency

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Agriculture	Motors	Fan System - Equipment Upgrade	employee	New	387.98	10	\$38.01	9%	38%	\$0.01	85.03	84.81	UNIDO Study on Industrial Energy Efficiency
Agriculture	Motors	Fan System - Flow Optimization	employee	New	456.75	10	\$62.89	9%	38%	\$0.02	100.20	99.84	UNIDO Study on Industrial Energy Efficiency
Agriculture	Motors	Fan System - Variable Speed Drive	employee	New	689.55	10	\$316.44	9%	38%	\$0.05	152.08	150.71	UNIDO Study on Industrial Energy Efficiency
Agriculture	Motors	Compressed Air - Equipment Upgrade	employee	New	263.48	10	\$19.17	17%	50%	\$0.01	44.31	44.31	7th Power Plan
Agriculture	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	New	0.00	15	\$0.00	16%	38%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Agriculture	Motors	Compressed Air - Refrigerated Cycling Dryers	employee	New	0.00	10	\$0.00	16%	30%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Agriculture	Motors	Compressed Air - System Controls	employee	New	59.20	10	\$13.71	9%	38%	\$0.03	8.58	8.55	UNIDO Study on Industrial Energy Efficiency
Agriculture	Motors	Compressed Air - Leak Management Program	employee	New	150.17	10	\$13.78	18%	75%	\$0.01	43.35	43.30	7th Power Plan
Agriculture	Motors	Compressed Air - Variable Speed Drive	employee	New	109.01	15	\$84.04	26%	45%	\$0.06	13.65	13.56	UNIDO Study on Industrial Energy Efficiency
Agriculture	Motors	Compressed Air - Low Pressure-Drop Filters	employee	New	3.67	10	\$1.30	17%	50%	\$0.04	0.62	0.62	Illinois TRM
Agriculture	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	New	22.26	10	\$4.20	17%	50%	\$0.02	3.76	3.75	UNIDO Study on Industrial Energy Efficiency
Agriculture	Motors	Compressed Air - Outside Air Intake	employee	New	0.00	20	\$0.00	17%	50%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Agriculture	Motors	Compressed Air - Receiver Capacity Addition	employee	New	21.99	15	\$11.56	17%	50%	\$0.04	4.81	4.78	UNIDO Study on Industrial Energy Efficiency
Agriculture	Motors	Material Handling - Variable Speed Drive	employee	New	799.18	10	\$278.34	25%	45%	\$0.04	123.46	122.58	7th Power Plan
Agriculture	Motors	Motors - Green Rewind (<100 HP)	employee	New	20.21	10	\$8.50	10%	50%	\$0.05	25.01	24.79	7th Power Plan
Agriculture	Motors	Motors - Green Rewind (100 HP+)	employee	New	11.31	10	\$3.02	6%	25%	\$0.03	6.64	6.59	7th Power Plan
Agriculture	Motors	Switch from Belt Drive to Direct Drive	employee	New	170.41	12	\$37.29	16%	25%	\$0.02	54.08	53.78	2015-mdu-irp-report---volume-iii.pdf
Agriculture	Motors	Motors - Synchronous Belts	employee	New	45.31	10	\$11.22	16%	36%	\$0.03	18.40	18.33	7th Power Plan
Agriculture	Miscellaneous	Agriculture - Engine Block Timer	employee	New	612.40	3	\$7.55	15%	33%	\$0.00	0.00	27.12	Vermont TRM

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Agriculture	Motors	Agriculture - Live Stock Waterer	employee	New	274.80	10	\$142.48	15%	17%	\$0.06	4.26	4.21	Ontario Power TRM
Agriculture	Process	Dairy - Milk Precoolers	employee	New	1,273.25	15	\$592.55	15%	15%	\$0.04	4.42	4.41	Ontario Power TRM
Agriculture	Process	Clean Room: Change Filter Strategy	employee	New	19.58	15	\$0.14	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Agriculture	Process	Clean Room: Chiller Optimize	employee	New	378.96	15	\$35.09	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Agriculture	Process	Clean Room: Clean Room HVAC	employee	New	229.18	15	\$42.35	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Agriculture	Process	Elec Chip Fab: Solidstate Chiller	employee	New	229.13	15	\$133.03	0%	0%	\$0.05	0.00	0.00	7th Power Plan
Agriculture	Process	Elec Chip Fab: Eliminate Exhaust	employee	New	2.44	15	\$0.52	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Agriculture	Process	Elec Chip Fab: Exhaust Injector	employee	New	4.87	15	\$2.51	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Agriculture	Process	Elec Chip Fab: Reduce Gas Pressure	employee	New	4.89	15	\$0.05	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Agriculture	Motors	Panel: Hydraulic Press	employee	New	1,199.24	10	\$278.17	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Agriculture	Motors	Wood: Replace Pneumatic Conveyor	employee	New	1,263.65	10	\$20.83	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Agriculture	Process	Metal: New Arc Furnace	employee	New	683.70	10	\$71.77	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Agriculture	Process	Paper: Premium Control Large Material	employee	New	256.29	10	\$128.75	0%	0%	\$0.06	0.00	0.00	7th Power Plan
Agriculture	Process	Paper: Efficient Pulp Screen	employee	New	205.33	10	\$42.41	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Agriculture	Process	Kraft: Effluent Treatment System	employee	New	206.15	10	\$17.39	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Agriculture	Motors	Kraft: Efficient Agitator	employee	New	2,172.98	10	\$207.58	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Agriculture	Process	Mech Pulp: Premium Process	employee	New	2.30	5	\$0.30	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Agriculture	Motors	Mech Pulp: Refiner Plate Improvement	employee	New	19.05	1	\$0.79	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Agriculture	Cooling	Transformer - High Efficiency	employee	New	29.89	10	\$44.09	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Agriculture	Heating	Transformer - High Efficiency	employee	New	71.88	10	\$44.09	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Agriculture	Ventilation	Transformer - High Efficiency	employee	New	1.40	10	\$44.09	15%	15%	\$0.01	0.00	0.00	7th Power Plan

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Agriculture	Interior Lighting	Transformer - High Efficiency	employee	New	10.25	10	\$44.09	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Agriculture	Exterior Lighting	Transformer - High Efficiency	employee	New	2.14	10	\$44.09	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Agriculture	Motors	Transformer - High Efficiency	employee	New	133.49	10	\$44.09	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Agriculture	Process	Transformer - High Efficiency	employee	New	102.39	10	\$44.09	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Agriculture	Miscellaneous	Transformer - High Efficiency	employee	New	21.56	10	\$44.09	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Agriculture	Cooling	Strategic Energy Management	employee	New	85.10	3	\$270.77	0%	5%	\$0.07	0.05	0.05	AEG Research
Agriculture	Heating	Strategic Energy Management	employee	New	206.72	3	\$270.77	0%	5%	\$0.07	0.13	0.13	AEG Research
Agriculture	Ventilation	Strategic Energy Management	employee	New	4.02	3	\$270.77	0%	5%	\$0.07	0.02	0.02	AEG Research
Agriculture	Interior Lighting	Strategic Energy Management	employee	New	28.41	3	\$270.77	0%	5%	\$0.07	0.09	0.13	AEG Research
Agriculture	Exterior Lighting	Strategic Energy Management	employee	New	6.19	3	\$270.77	0%	5%	\$0.07	0.02	0.03	AEG Research
Agriculture	Motors	Strategic Energy Management	employee	New	385.65	3	\$270.77	0%	5%	\$0.07	1.22	1.23	AEG Research
Agriculture	Process	Strategic Energy Management	employee	New	295.78	3	\$270.77	0%	5%	\$0.07	0.93	0.93	AEG Research
Agriculture	Miscellaneous	Strategic Energy Management	employee	New	62.29	3	\$270.77	0%	5%	\$0.07	0.24	0.16	AEG Research
Agriculture	Interior Lighting	Commissioning	employee	New	32.78	3	\$407.73	5%	39%	\$0.13	0.68	1.04	AEG Research
Agriculture	Exterior Lighting	Commissioning	employee	New	7.14	3	\$407.73	5%	39%	\$0.13	0.16	0.24	AEG Research
Agriculture	Motors	Commissioning	employee	New	444.89	3	\$407.73	5%	39%	\$0.13	9.55	9.63	AEG Research
Agriculture	Process	Commissioning	employee	New	341.21	3	\$407.73	5%	39%	\$0.13	7.26	7.26	AEG Research
Agriculture	Miscellaneous	Commissioning	employee	New	71.86	3	\$407.73	5%	39%	\$0.13	1.92	1.28	AEG Research
Agriculture	Interior Lighting	Retrocommissioning	employee	New	32.78	3	\$258.83	0%	0%	\$0.08	0.00	0.00	AEG Research
Agriculture	Exterior Lighting	Retrocommissioning	employee	New	7.14	3	\$258.83	0%	0%	\$0.08	0.00	0.00	AEG Research
Agriculture	Motors	Retrocommissioning	employee	New	444.98	3	\$258.83	0%	0%	\$0.08	0.00	0.00	AEG Research

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Agriculture	Process	Retrocommissioning	employee	New	341.29	3	\$258.83	0%	0%	\$0.08	0.00	0.00	AEG Research
Agriculture	Miscellaneous	Retrocommissioning	employee	New	71.87	3	\$258.83	0%	0%	\$0.08	0.00	0.00	AEG Research
Agriculture	Motors	Municipal Sewage Treatment	employee	New	14.85	12	\$8.13	0%	0%	\$0.05	0.00	0.00	7th Power Plan
Agriculture	Motors	Municipal Water Supply Treatment	employee	New	0.00	12	\$0.00	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Mining and Extraction	Cooling	Insulation - Ceiling	sqft	Existing	0.18	45	\$1.28	15%	25%	\$0.11	70.20	77.09	Building Energy Simulation Tool
Mining and Extraction	Heating	Insulation - Ceiling	sqft	Existing	0.40	45	\$1.28	15%	25%	\$0.11	175.15	181.94	Building Energy Simulation Tool
Mining and Extraction	Ventilation	Insulation - Ceiling	sqft	Existing	0.01	45	\$1.28	15%	25%	\$0.11	26.92	32.41	Building Energy Simulation Tool
Mining and Extraction	Cooling	Insulation - Ducting	sqft	Existing	0.07	20	\$0.84	15%	25%	\$0.62	27.16	29.95	Building Energy Simulation Tool
Mining and Extraction	Heating	Insulation - Ducting	sqft	Existing	0.02	20	\$0.84	15%	25%	\$0.62	7.35	7.67	Building Energy Simulation Tool
Mining and Extraction	Ventilation	Insulation - Ducting	sqft	Existing	0.00	20	\$0.84	15%	25%	\$0.62	1.13	1.37	Building Energy Simulation Tool
Mining and Extraction	Cooling	Insulation - Wall Cavity	sqft	Existing	0.00	45	\$0.15	45%	50%	\$0.01	0.60	0.63	Building Energy Simulation Tool
Mining and Extraction	Heating	Insulation - Wall Cavity	sqft	Existing	0.58	45	\$0.15	45%	50%	\$0.01	127.88	128.16	Building Energy Simulation Tool
Mining and Extraction	Ventilation	Insulation - Wall Cavity	sqft	Existing	0.02	45	\$0.15	45%	50%	\$0.01	18.31	21.80	Building Energy Simulation Tool
Mining and Extraction	Cooling	HVAC - Duct Repair and Sealing	sqft	Existing	0.02	18	\$0.00	15%	25%	\$0.00	9.92	10.42	Building Energy Simulation Tool
Mining and Extraction	Heating	HVAC - Duct Repair and Sealing	sqft	Existing	0.04	18	\$0.00	15%	25%	\$0.00	18.03	18.06	Building Energy Simulation Tool
Mining and Extraction	Ventilation	HVAC - Duct Repair and Sealing	sqft	Existing	0.00	18	\$0.00	15%	25%	\$0.00	2.58	3.07	Building Energy Simulation Tool
Mining and Extraction	Cooling	Chiller - Chilled Water Reset	sqft	Existing	0.07	10	\$0.01	15%	45%	\$0.02	22.89	24.77	AEG-BEST
Mining and Extraction	Cooling	Chiller - Chilled Water Variable-Flow System	sqft	Existing	0.36	15	\$0.50	15%	60%	\$0.11	179.78	201.24	AEG-BEST
Mining and Extraction	Cooling	Chiller - Variable Speed Fans	sqft	Existing	0.14	15	\$0.03	15%	75%	\$0.02	92.40	100.12	New Jersey TRM
Mining and Extraction	Cooling	HVAC - Economizer	sqft	Existing	0.60	10	\$0.25	18%	30%	\$0.04	100.65	108.81	AEG-BEST

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Mining and Extraction	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.25	15%	35%	\$7.50	10.52	13.56	7th Power Plan
Mining and Extraction	Cooling	Destratification Fans (HVLS)	sqft	Existing	0.24	15	\$0.63	15%	50%	\$0.04	366.05	398.01	AEG Research
Mining and Extraction	Heating	Destratification Fans (HVLS)	sqft	Existing	1.05	15	\$0.63	15%	50%	\$0.04	1,753.88	1,766.23	AEG Research
Mining and Extraction	Cooling	RTU - Maintenance	sqft	Existing	0.12	3	\$0.07	15%	75%	\$0.15	207.15	233.94	AEG Research
Mining and Extraction	Cooling	Thermostat - WiFi/Interactive	sqft	Existing	0.36	5	\$0.66	5%	15%	\$0.10	142.15	154.77	7th Power Plan
Mining and Extraction	Heating	Thermostat - WiFi/Interactive	sqft	Existing	0.81	5	\$0.66	5%	15%	\$0.10	354.45	365.22	7th Power Plan
Mining and Extraction	Ventilation	Thermostat - WiFi/Interactive	sqft	Existing	0.03	5	\$0.66	5%	15%	\$0.10	54.47	65.04	7th Power Plan
Mining and Extraction	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.68	15	\$0.35	7%	33%	\$0.03	1,474.92	1,863.12	7th Power Plan
Mining and Extraction	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.92	15	\$0.58	7%	33%	\$0.04	1,956.68	2,548.69	7th Power Plan
Mining and Extraction	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	Existing	0.02	15	\$0.00	1%	2%	\$0.01	7.41	10.90	7th Power Plan
Mining and Extraction	Interior Lighting	Interior Lighting - Timeclocks and Timers	sqft	Existing	0.00	8	\$0.00	7%	7%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Mining and Extraction	Interior Lighting	Interior Lighting - Skylights	sqft	Existing	0.00	15	\$1.01	15%	23%	\$0.00	0.00	0.00	AEG Research
Mining and Extraction	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	sqft	Existing	0.04	16	\$1.81	5%	40%	\$2.85	237.15	384.05	7th Power Plan
Mining and Extraction	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	Existing	0.04	11	\$0.00	15%	50%	\$0.01	246.33	352.03	Illinois TRM
Mining and Extraction	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	sqft	Existing	0.05	8	\$0.03	15%	25%	\$0.07	296.54	457.24	7th Power Plan
Mining and Extraction	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	Existing	0.03	8	\$0.02	33%	60%	\$0.07	411.70	653.46	Pacific Gas and Electric Research
Mining and Extraction	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	Existing	0.03	7	\$1.19	15%	30%	\$3.70	257.79	432.28	AEG Research
Mining and Extraction	Process	Process - Conductivity Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Mining and Extraction	Process	Process - Timers and Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A

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Mining and Extraction	Motors	Process - Timers and Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Mining and Extraction	Process	Refrigeration - Floating Head Pressure	employee	Existing	0.00	15	\$110.31	20%	50%	\$0.00	0.00	0.00	RTF Workbook
Mining and Extraction	Process	Refrigeration - System Optimization	employee	Existing	0.00	15	\$77.68	20%	50%	\$0.00	0.00	0.00	AEG Research
Mining and Extraction	Motors	Pumping System - Equipment Upgrade	employee	Existing	10,023.56	10	\$1,472.21	9%	38%	\$0.02	24,499.17	25,089.86	7th Power Plan
Mining and Extraction	Motors	Pumping System - System Optimization	employee	Existing	7,265.35	12	\$2,243.65	9%	38%	\$0.03	17,125.45	17,827.46	UNIDO Study on Industrial Energy Efficiency
Mining and Extraction	Motors	Pumping System - Variable Speed Drive	employee	Existing	7,174.34	10	\$2,334.24	9%	38%	\$0.03	16,828.05	17,690.96	UNIDO Study on Industrial Energy Efficiency
Mining and Extraction	Motors	Fan System - Equipment Upgrade	employee	Existing	1,558.40	10	\$154.23	9%	38%	\$0.01	3,727.15	3,759.61	UNIDO Study on Industrial Energy Efficiency
Mining and Extraction	Motors	Fan System - Flow Optimization	employee	Existing	1,777.44	10	\$255.18	9%	38%	\$0.02	4,211.56	4,336.81	UNIDO Study on Industrial Energy Efficiency
Mining and Extraction	Motors	Fan System - Variable Speed Drive	employee	Existing	2,606.94	10	\$1,284.07	9%	38%	\$0.05	6,069.95	6,475.48	UNIDO Study on Industrial Energy Efficiency
Mining and Extraction	Motors	Compressed Air - Equipment Upgrade	employee	Existing	7,553.42	10	\$549.63	17%	50%	\$0.01	21,723.25	21,723.25	7th Power Plan
Mining and Extraction	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	Existing	0.00	15	\$0.00	16%	38%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Mining and Extraction	Motors	Compressed Air - Refrigerated Cycling Dryers	employee	Existing	0.00	10	\$0.00	16%	30%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Mining and Extraction	Motors	Compressed Air - System Controls	employee	Existing	1,624.94	10	\$392.98	9%	38%	\$0.03	3,939.36	4,122.73	UNIDO Study on Industrial Energy Efficiency
Mining and Extraction	Motors	Compressed Air - Leak Management Program	employee	Existing	4,239.84	10	\$395.04	18%	75%	\$0.01	20,804.56	21,079.83	7th Power Plan
Mining and Extraction	Motors	Compressed Air - Variable Speed Drive	employee	Existing	2,920.10	15	\$2,409.35	26%	45%	\$0.06	4,645.99	5,053.73	UNIDO Study on Industrial Energy Efficiency
Mining and Extraction	Motors	Compressed Air - Low Pressure-Drop Filters	employee	Existing	98.18	10	\$37.14	17%	50%	\$0.04	274.24	295.97	Illinois TRM
Mining and Extraction	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	Existing	613.51	10	\$120.47	17%	50%	\$0.02	1,739.47	1,809.36	UNIDO Study on Industrial Energy Efficiency
Mining and Extraction	Motors	Compressed Air - Outside Air Intake	employee	Existing	0.00	20	\$0.00	17%	50%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Mining and Extraction	Motors	Compressed Air - Receiver Capacity Addition	employee	Existing	588.93	15	\$331.29	17%	50%	\$0.04	1,645.00	1,775.59	UNIDO Study on Industrial Energy Efficiency

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Mining and Extraction	Motors	Material Handling - Variable Speed Drive	employee	Existing	2,581.75	10	\$964.97	25%	45%	\$0.04	4,229.81	4,488.19	7th Power Plan
Mining and Extraction	Motors	Motors - Green Rewind (<100 HP)	employee	Existing	235.27	10	\$106.00	10%	50%	\$0.05	3,848.39	4,096.65	7th Power Plan
Mining and Extraction	Motors	Motors - Green Rewind (100 HP+)	employee	Existing	132.95	10	\$37.62	6%	25%	\$0.03	1,039.82	1,092.52	7th Power Plan
Mining and Extraction	Motors	Switch from Belt Drive to Direct Drive	employee	Existing	2,042.38	12	\$465.29	16%	25%	\$0.02	8,054.06	8,318.03	2015-mdu-irp-report---volume-iii.pdf
Mining and Extraction	Motors	Motors - Synchronous Belts	employee	Existing	540.04	10	\$139.98	16%	36%	\$0.03	4,578.75	4,802.08	7th Power Plan
Mining and Extraction	Miscellaneous	Agriculture - Engine Block Timer	employee	Existing	923.26	3	\$11.39	0%	0%	\$0.00	0.00	0.00	Vermont TRM
Mining and Extraction	Motors	Agriculture - Live Stock Waterer	employee	Existing	23,360.84	10	\$12,965.45	0%	0%	\$0.06	0.00	0.00	Ontario Power TRM
Mining and Extraction	Process	Dairy - Milk Precoolers	employee	Existing	0.00	15	\$351.01	0%	0%	\$0.00	0.00	0.00	Ontario Power TRM
Mining and Extraction	Process	Clean Room: Change Filter Strategy	employee	Existing	605.79	15	\$4.47	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Mining and Extraction	Process	Clean Room: Chiller Optimize	employee	Existing	0.00	15	\$20.78	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Mining and Extraction	Process	Clean Room: Clean Room HVAC	employee	Existing	0.00	15	\$25.09	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Mining and Extraction	Process	Elec Chip Fab: Solidstate Chiller	employee	Existing	0.00	15	\$78.81	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Mining and Extraction	Process	Elec Chip Fab: Eliminate Exhaust	employee	Existing	75.72	15	\$16.07	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Mining and Extraction	Process	Elec Chip Fab: Exhaust Injector	employee	Existing	151.45	15	\$77.54	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Mining and Extraction	Process	Elec Chip Fab: Reduce Gas Pressure	employee	Existing	151.45	15	\$1.55	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Mining and Extraction	Motors	Panel: Hydraulic Press	employee	Existing	3,969.31	10	\$964.39	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Mining and Extraction	Motors	Wood: Replace Pneumatic Conveyor	employee	Existing	4,380.98	10	\$72.22	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Mining and Extraction	Process	Metal: New Arc Furnace	employee	Existing	681.51	10	\$71.54	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Mining and Extraction	Process	Paper: Premium Control Large Material	employee	Existing	709.05	10	\$354.71	0%	0%	\$0.06	0.00	0.00	7th Power Plan

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Mining and Extraction	Process	Paper: Efficient Pulp Screen	employee	Existing	567.93	10	\$116.84	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Mining and Extraction	Process	Kraft: Effluent Treatment System	employee	Existing	567.93	10	\$47.90	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Mining and Extraction	Motors	Kraft: Efficient Agitator	employee	Existing	7,437.83	10	\$719.66	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Mining and Extraction	Process	Mech Pulp: Premium Process	employee	Existing	6.36	5	\$0.82	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Mining and Extraction	Motors	Mech Pulp: Refiner Plate Improvement	employee	Existing	61.53	1	\$2.75	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Mining and Extraction	Cooling	Transformer - High Efficiency	employee	Existing	101.18	10	\$318.61	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Mining and Extraction	Heating	Transformer - High Efficiency	employee	Existing	228.29	10	\$318.61	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Mining and Extraction	Ventilation	Transformer - High Efficiency	employee	Existing	7.05	10	\$318.61	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Mining and Extraction	Interior Lighting	Transformer - High Efficiency	employee	Existing	58.53	10	\$318.61	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Mining and Extraction	Exterior Lighting	Transformer - High Efficiency	employee	Existing	12.64	10	\$318.61	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Mining and Extraction	Motors	Transformer - High Efficiency	employee	Existing	1,939.59	10	\$318.61	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Mining and Extraction	Process	Transformer - High Efficiency	employee	Existing	170.38	10	\$318.61	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Mining and Extraction	Miscellaneous	Transformer - High Efficiency	employee	Existing	34.94	10	\$318.61	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Mining and Extraction	Cooling	Strategic Energy Management	employee	Existing	279.09	3	\$1,956.82	0%	0%	\$0.07	0.00	0.00	AEG Research
Mining and Extraction	Heating	Strategic Energy Management	employee	Existing	651.07	3	\$1,956.82	0%	0%	\$0.07	0.00	0.00	AEG Research
Mining and Extraction	Ventilation	Strategic Energy Management	employee	Existing	20.12	3	\$1,956.82	0%	0%	\$0.07	0.00	0.00	AEG Research
Mining and Extraction	Interior Lighting	Strategic Energy Management	employee	Existing	167.82	3	\$1,956.82	0%	0%	\$0.07	0.00	0.00	AEG Research
Mining and Extraction	Exterior Lighting	Strategic Energy Management	employee	Existing	36.25	3	\$1,956.82	0%	0%	\$0.07	0.00	0.00	AEG Research
Mining and Extraction	Motors	Strategic Energy Management	employee	Existing	5,555.20	3	\$1,956.82	0%	0%	\$0.07	0.00	0.00	AEG Research

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Mining and Extraction	Process	Strategic Energy Management	employee	Existing	487.86	3	\$1,956.82	0%	0%	\$0.07	0.00	0.00	AEG Research
Mining and Extraction	Miscellaneous	Strategic Energy Management	employee	Existing	99.97	3	\$1,956.82	0%	0%	\$0.07	0.00	0.00	AEG Research
Mining and Extraction	Interior Lighting	Commissioning	employee	Existing	193.63	3	\$3,742.25	0%	0%	\$0.14	0.00	0.00	AEG Research
Mining and Extraction	Exterior Lighting	Commissioning	employee	Existing	41.82	3	\$3,742.25	0%	0%	\$0.14	0.00	0.00	AEG Research
Mining and Extraction	Motors	Commissioning	employee	Existing	6,409.85	3	\$3,742.25	0%	0%	\$0.14	0.00	0.00	AEG Research
Mining and Extraction	Process	Commissioning	employee	Existing	562.92	3	\$3,742.25	0%	0%	\$0.14	0.00	0.00	AEG Research
Mining and Extraction	Miscellaneous	Commissioning	employee	Existing	115.35	3	\$3,742.25	0%	0%	\$0.14	0.00	0.00	AEG Research
Mining and Extraction	Interior Lighting	Retrocommissioning	employee	Existing	195.11	3	\$2,375.65	10%	40%	\$0.09	373.56	532.72	AEG Research
Mining and Extraction	Exterior Lighting	Retrocommissioning	employee	Existing	42.14	3	\$2,375.65	10%	40%	\$0.09	82.72	118.55	AEG Research
Mining and Extraction	Motors	Retrocommissioning	employee	Existing	6,465.29	3	\$2,375.65	10%	40%	\$0.09	14,970.03	15,792.83	AEG Research
Mining and Extraction	Process	Retrocommissioning	employee	Existing	567.93	3	\$2,375.65	10%	40%	\$0.09	1,359.64	1,359.64	AEG Research
Mining and Extraction	Miscellaneous	Retrocommissioning	employee	Existing	116.48	3	\$2,375.65	10%	40%	\$0.09	353.01	274.35	AEG Research
Mining and Extraction	Motors	Municipal Sewage Treatment	employee	Existing	1,262.41	12	\$740.11	0%	0%	\$0.05	0.00	0.00	7th Power Plan
Mining and Extraction	Motors	Municipal Water Supply Treatment	employee	Existing	0.00	12	\$0.00	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Mining and Extraction	Cooling	Insulation - Ceiling	sqft	New	0.17	45	\$1.28	15%	25%	\$0.12	31.23	31.45	Building Energy Simulation Tool
Mining and Extraction	Heating	Insulation - Ceiling	sqft	New	0.40	45	\$1.28	15%	25%	\$0.12	76.99	76.74	Building Energy Simulation Tool
Mining and Extraction	Ventilation	Insulation - Ceiling	sqft	New	0.01	45	\$1.28	15%	25%	\$0.12	9.50	10.41	Building Energy Simulation Tool
Mining and Extraction	Cooling	Insulation - Ducting	sqft	New	0.07	20	\$0.84	15%	25%	\$0.66	12.14	12.23	Building Energy Simulation Tool
Mining and Extraction	Heating	Insulation - Ducting	sqft	New	0.02	20	\$0.84	15%	25%	\$0.66	3.25	3.24	Building Energy Simulation Tool

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Mining and Extraction	Ventilation	Insulation - Ducting	sqft	New	0.00	20	\$0.84	15%	25%	\$0.66	0.40	0.44	Building Energy Simulation Tool
Mining and Extraction	Cooling	Insulation - Wall Cavity	sqft	New	0.00	45	\$0.15	45%	50%	\$0.01	0.24	0.25	Building Energy Simulation Tool
Mining and Extraction	Heating	Insulation - Wall Cavity	sqft	New	0.54	45	\$0.15	45%	50%	\$0.01	52.14	52.17	Building Energy Simulation Tool
Mining and Extraction	Ventilation	Insulation - Wall Cavity	sqft	New	0.01	45	\$0.15	45%	50%	\$0.01	6.35	6.96	Building Energy Simulation Tool
Mining and Extraction	Cooling	HVAC - Duct Repair and Sealing	sqft	New	0.02	18	\$0.00	15%	25%	\$0.00	3.92	3.97	Building Energy Simulation Tool
Mining and Extraction	Heating	HVAC - Duct Repair and Sealing	sqft	New	0.04	18	\$0.00	15%	25%	\$0.00	7.22	7.22	Building Energy Simulation Tool
Mining and Extraction	Ventilation	HVAC - Duct Repair and Sealing	sqft	New	0.00	18	\$0.00	15%	25%	\$0.00	0.88	0.97	Building Energy Simulation Tool
Mining and Extraction	Cooling	Chiller - Chilled Water Reset	sqft	New	0.05	10	\$0.01	15%	45%	\$0.02	2.88	2.97	AEG-BEST
Mining and Extraction	Cooling	Chiller - Chilled Water Variable-Flow System	sqft	New	0.30	15	\$0.50	15%	60%	\$0.13	30.59	31.31	AEG-BEST
Mining and Extraction	Cooling	Chiller - Variable Speed Fans	sqft	New	0.11	15	\$0.03	15%	75%	\$0.02	15.00	15.42	New Jersey TRM
Mining and Extraction	Cooling	HVAC - Economizer	sqft	New	0.53	10	\$0.25	18%	30%	\$0.05	13.67	14.11	AEG-BEST
Mining and Extraction	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.25	15%	35%	\$8.97	1.66	1.96	7th Power Plan
Mining and Extraction	Cooling	Destratification Fans (HVLS)	sqft	New	0.22	15	\$0.63	15%	50%	\$0.04	66.97	68.72	AEG Research
Mining and Extraction	Heating	Destratification Fans (HVLS)	sqft	New	0.99	15	\$0.63	15%	50%	\$0.04	320.51	321.19	AEG Research
Mining and Extraction	Cooling	RTU - Maintenance	sqft	New	0.12	3	\$0.07	15%	75%	\$0.16	4.50	4.80	AEG Research
Mining and Extraction	Cooling	Thermostat - WiFi/Interactive	sqft	New	0.34	5	\$0.66	5%	15%	\$0.10	8.16	8.39	7th Power Plan
Mining and Extraction	Heating	Thermostat - WiFi/Interactive	sqft	New	0.79	5	\$0.66	5%	15%	\$0.10	20.11	20.08	7th Power Plan
Mining and Extraction	Ventilation	Thermostat - WiFi/Interactive	sqft	New	0.02	5	\$0.66	5%	15%	\$0.10	2.48	3.01	7th Power Plan
Mining and Extraction	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.54	15	\$0.35	22%	41%	\$0.03	877.63	1,025.64	7th Power Plan

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Mining and Extraction	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.73	15	\$0.58	22%	41%	\$0.04	1,188.93	1,396.85	7th Power Plan
Mining and Extraction	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	New	0.02	15	\$0.00	1%	2%	\$0.01	1.03	1.33	7th Power Plan
Mining and Extraction	Interior Lighting	Interior Lighting - Timerclocks and Timers	sqft	New	0.00	8	\$0.00	7%	7%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Mining and Extraction	Interior Lighting	Interior Lighting - Skylights	sqft	New	0.00	15	\$1.01	18%	24%	\$0.00	0.00	0.00	AEG Research
Mining and Extraction	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	sqft	New	0.03	16	\$1.81	5%	40%	\$2.85	46.42	59.62	7th Power Plan
Mining and Extraction	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	New	0.03	11	\$0.00	15%	50%	\$0.01	36.13	46.84	Illinois TRM
Mining and Extraction	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	sqft	New	0.04	8	\$0.03	15%	25%	\$0.07	33.27	46.34	7th Power Plan
Mining and Extraction	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	New	0.02	8	\$0.02	44%	60%	\$0.07	28.45	39.40	Pacific Gas and Electric Research
Mining and Extraction	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	New	0.02	7	\$1.19	15%	30%	\$3.69	28.89	40.37	AEG Research
Mining and Extraction	Process	Process - Conductivity Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Mining and Extraction	Process	Process - Timers and Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Mining and Extraction	Motors	Process - Timers and Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Mining and Extraction	Process	Refrigeration - Floating Head Pressure	employee	New	0.00	15	\$77.96	20%	50%	\$0.00	0.00	0.00	RTF Workbook
Mining and Extraction	Process	Refrigeration - System Optimization	employee	New	0.00	15	\$27.26	20%	50%	\$0.00	0.00	0.00	AEG Research
Mining and Extraction	Motors	Pumping System - Equipment Upgrade	employee	New	10,249.77	10	\$1,472.21	9%	38%	\$0.02	3,801.99	3,786.43	7th Power Plan
Mining and Extraction	Motors	Pumping System - System Optimization	employee	New	7,597.95	12	\$2,243.65	9%	38%	\$0.03	4,649.87	4,604.66	UNIDO Study on Industrial Energy Efficiency
Mining and Extraction	Motors	Pumping System - Variable Speed Drive	employee	New	7,557.19	10	\$2,334.24	9%	38%	\$0.03	4,275.98	4,229.46	UNIDO Study on Industrial Energy Efficiency
Mining and Extraction	Motors	Fan System - Equipment Upgrade	employee	New	1,567.51	10	\$154.23	9%	38%	\$0.01	881.80	877.62	UNIDO Study on Industrial Energy Efficiency
Mining and Extraction	Motors	Fan System - Flow Optimization	employee	New	1,840.14	10	\$255.18	9%	38%	\$0.02	1,037.99	1,029.90	UNIDO Study on Industrial Energy Efficiency

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Mining and Extraction	Motors	Fan System - Variable Speed Drive	employee	New	2,777.03	10	\$1,284.07	9%	38%	\$0.05	1,574.54	1,554.13	UNIDO Study on Industrial Energy Efficiency
Mining and Extraction	Motors	Compressed Air - Equipment Upgrade	employee	New	7,553.42	10	\$549.63	17%	50%	\$0.01	3,254.36	3,254.36	7th Power Plan
Mining and Extraction	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	New	0.00	15	\$0.00	16%	38%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Mining and Extraction	Motors	Compressed Air - Refrigerated Cycling Dryers	employee	New	0.00	10	\$0.00	16%	30%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Mining and Extraction	Motors	Compressed Air - System Controls	employee	New	1,691.90	10	\$392.98	9%	38%	\$0.03	629.76	625.53	UNIDO Study on Industrial Energy Efficiency
Mining and Extraction	Motors	Compressed Air - Leak Management Program	employee	New	4,295.37	10	\$395.04	18%	75%	\$0.01	3,179.22	3,172.74	7th Power Plan
Mining and Extraction	Motors	Compressed Air - Variable Speed Drive	employee	New	3,118.47	15	\$2,409.35	26%	45%	\$0.06	1,002.55	992.77	UNIDO Study on Industrial Energy Efficiency
Mining and Extraction	Motors	Compressed Air - Low Pressure-Drop Filters	employee	New	104.31	10	\$37.14	17%	50%	\$0.04	45.47	45.10	Illinois TRM
Mining and Extraction	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	New	636.22	10	\$120.47	17%	50%	\$0.02	276.09	274.28	UNIDO Study on Industrial Energy Efficiency
Mining and Extraction	Motors	Compressed Air - Outside Air Intake	employee	New	0.00	20	\$0.00	17%	50%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Mining and Extraction	Motors	Compressed Air - Receiver Capacity Addition	employee	New	625.83	15	\$331.29	17%	50%	\$0.04	351.77	348.54	UNIDO Study on Industrial Energy Efficiency
Mining and Extraction	Motors	Material Handling - Variable Speed Drive	employee	New	2,738.33	10	\$964.97	25%	45%	\$0.04	1,088.68	1,075.44	7th Power Plan
Mining and Extraction	Motors	Motors - Green Rewind (<100 HP)	employee	New	250.22	10	\$106.00	10%	50%	\$0.05	995.30	982.69	7th Power Plan
Mining and Extraction	Motors	Motors - Green Rewind (100 HP+)	employee	New	139.99	10	\$37.62	6%	25%	\$0.03	264.01	261.16	7th Power Plan
Mining and Extraction	Motors	Switch from Belt Drive to Direct Drive	employee	New	2,119.84	12	\$465.29	16%	25%	\$0.02	2,159.18	2,141.44	2015-mdu-irp-report---volume-iii.pdf
Mining and Extraction	Motors	Motors - Synchronous Belts	employee	New	563.43	10	\$139.98	16%	36%	\$0.03	734.33	729.10	7th Power Plan
Mining and Extraction	Miscellaneous	Agriculture - Engine Block Timer	employee	New	923.26	3	\$11.39	0%	0%	\$0.00	0.00	0.00	Vermont TRM
Mining and Extraction	Motors	Agriculture - Live Stock Waterer	employee	New	24,947.73	10	\$12,965.45	0%	0%	\$0.06	0.00	0.00	Ontario Power TRM
Mining and Extraction	Process	Dairy - Milk Precoolers	employee	New	0.00	15	\$351.01	0%	0%	\$0.00	0.00	0.00	Ontario Power TRM

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Mining and Extraction	Process	Clean Room: Change Filter Strategy	employee	New	605.79	15	\$4.47	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Mining and Extraction	Process	Clean Room: Chiller Optimize	employee	New	0.00	15	\$20.78	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Mining and Extraction	Process	Clean Room: Clean Room HVAC	employee	New	0.00	15	\$25.09	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Mining and Extraction	Process	Elec Chip Fab: Solidstate Chiller	employee	New	0.00	15	\$78.81	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Mining and Extraction	Process	Elec Chip Fab: Eliminate Exhaust	employee	New	75.72	15	\$16.07	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Mining and Extraction	Process	Elec Chip Fab: Exhaust Injector	employee	New	151.45	15	\$77.54	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Mining and Extraction	Process	Elec Chip Fab: Reduce Gas Pressure	employee	New	151.45	15	\$1.55	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Mining and Extraction	Motors	Panel: Hydraulic Press	employee	New	4,141.23	10	\$964.39	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Mining and Extraction	Motors	Wood: Replace Pneumatic Conveyor	employee	New	4,380.98	10	\$72.22	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Mining and Extraction	Process	Metal: New Arc Furnace	employee	New	681.51	10	\$71.54	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Mining and Extraction	Process	Paper: Premium Control Large Material	employee	New	709.05	10	\$354.71	0%	0%	\$0.06	0.00	0.00	7th Power Plan
Mining and Extraction	Process	Paper: Efficient Pulp Screen	employee	New	567.93	10	\$116.84	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Mining and Extraction	Process	Kraft: Effluent Treatment System	employee	New	567.93	10	\$47.90	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Mining and Extraction	Motors	Kraft: Efficient Agitator	employee	New	7,473.79	10	\$719.66	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Mining and Extraction	Process	Mech Pulp: Premium Process	employee	New	6.36	5	\$0.82	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Mining and Extraction	Motors	Mech Pulp: Refiner Plate Improvement	employee	New	65.26	1	\$2.75	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Mining and Extraction	Cooling	Transformer - High Efficiency	employee	New	92.04	10	\$316.46	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Mining and Extraction	Heating	Transformer - High Efficiency	employee	New	221.93	10	\$316.46	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Mining and Extraction	Ventilation	Transformer - High Efficiency	employee	New	4.31	10	\$316.46	15%	15%	\$0.01	0.00	0.00	7th Power Plan

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Mining and Extraction	Interior Lighting	Transformer - High Efficiency	employee	New	46.22	10	\$316.46	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Mining and Extraction	Exterior Lighting	Transformer - High Efficiency	employee	New	10.06	10	\$316.46	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Mining and Extraction	Motors	Transformer - High Efficiency	employee	New	2,076.34	10	\$316.46	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Mining and Extraction	Process	Transformer - High Efficiency	employee	New	170.38	10	\$316.46	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Mining and Extraction	Miscellaneous	Transformer - High Efficiency	employee	New	33.10	10	\$316.46	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Mining and Extraction	Cooling	Strategic Energy Management	employee	New	262.72	3	\$1,943.58	0%	0%	\$0.07	0.00	0.00	AEG Research
Mining and Extraction	Heating	Strategic Energy Management	employee	New	638.25	3	\$1,943.58	0%	0%	\$0.07	0.00	0.00	AEG Research
Mining and Extraction	Ventilation	Strategic Energy Management	employee	New	12.39	3	\$1,943.58	0%	0%	\$0.07	0.00	0.00	AEG Research
Mining and Extraction	Interior Lighting	Strategic Energy Management	employee	New	133.52	3	\$1,943.58	0%	0%	\$0.07	0.00	0.00	AEG Research
Mining and Extraction	Exterior Lighting	Strategic Energy Management	employee	New	29.06	3	\$1,943.58	0%	0%	\$0.07	0.00	0.00	AEG Research
Mining and Extraction	Motors	Strategic Energy Management	employee	New	5,998.30	3	\$1,943.58	0%	0%	\$0.07	0.00	0.00	AEG Research
Mining and Extraction	Process	Strategic Energy Management	employee	New	492.20	3	\$1,943.58	0%	0%	\$0.07	0.00	0.00	AEG Research
Mining and Extraction	Miscellaneous	Strategic Energy Management	employee	New	95.62	3	\$1,943.58	0%	0%	\$0.07	0.00	0.00	AEG Research
Mining and Extraction	Interior Lighting	Commissioning	employee	New	154.06	3	\$3,754.13	10%	40%	\$0.14	7.28	11.00	AEG Research
Mining and Extraction	Exterior Lighting	Commissioning	employee	New	33.53	3	\$3,754.13	10%	40%	\$0.14	1.67	2.54	AEG Research
Mining and Extraction	Motors	Commissioning	employee	New	6,921.12	3	\$3,754.13	10%	40%	\$0.14	336.78	338.03	AEG Research
Mining and Extraction	Process	Commissioning	employee	New	567.93	3	\$3,754.13	10%	40%	\$0.14	27.28	27.28	AEG Research
Mining and Extraction	Miscellaneous	Commissioning	employee	New	110.33	3	\$3,754.13	10%	40%	\$0.14	6.56	4.43	AEG Research
Mining and Extraction	Interior Lighting	Retrocommissioning	employee	New	154.06	3	\$2,383.19	0%	0%	\$0.09	0.00	0.00	AEG Research

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Mining and Extraction	Exterior Lighting	Retrocommissioning	employee	New	33.53	3	\$2,383.19	0%	0%	\$0.09	0.00	0.00	AEG Research
Mining and Extraction	Motors	Retrocommissioning	employee	New	6,921.12	3	\$2,383.19	0%	0%	\$0.09	0.00	0.00	AEG Research
Mining and Extraction	Process	Retrocommissioning	employee	New	567.93	3	\$2,383.19	0%	0%	\$0.09	0.00	0.00	AEG Research
Mining and Extraction	Miscellaneous	Retrocommissioning	employee	New	110.33	3	\$2,383.19	0%	0%	\$0.09	0.00	0.00	AEG Research
Mining and Extraction	Motors	Municipal Sewage Treatment	employee	New	1,348.17	12	\$740.11	0%	0%	\$0.05	0.00	0.00	7th Power Plan
Mining and Extraction	Motors	Municipal Water Supply Treatment	employee	New	0.00	12	\$0.00	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Food Mfg	Cooling	Insulation - Ceiling	sqft	Existing	0.18	45	\$1.28	15%	25%	\$0.11	14.41	15.83	Building Energy Simulation Tool
Food Mfg	Heating	Insulation - Ceiling	sqft	Existing	0.40	45	\$1.28	15%	25%	\$0.11	35.96	37.35	Building Energy Simulation Tool
Food Mfg	Ventilation	Insulation - Ceiling	sqft	Existing	0.01	45	\$1.28	15%	25%	\$0.11	5.53	6.65	Building Energy Simulation Tool
Food Mfg	Cooling	Insulation - Ducting	sqft	Existing	0.07	20	\$0.84	15%	25%	\$0.62	5.53	6.13	Building Energy Simulation Tool
Food Mfg	Heating	Insulation - Ducting	sqft	Existing	0.02	20	\$0.84	15%	25%	\$0.62	1.50	1.57	Building Energy Simulation Tool
Food Mfg	Ventilation	Insulation - Ducting	sqft	Existing	0.00	20	\$0.84	15%	25%	\$0.62	0.23	0.28	Building Energy Simulation Tool
Food Mfg	Cooling	Insulation - Wall Cavity	sqft	Existing	0.00	45	\$0.15	45%	50%	\$0.01	0.12	0.13	Building Energy Simulation Tool
Food Mfg	Heating	Insulation - Wall Cavity	sqft	Existing	0.58	45	\$0.15	45%	50%	\$0.01	26.25	26.31	Building Energy Simulation Tool
Food Mfg	Ventilation	Insulation - Wall Cavity	sqft	Existing	0.02	45	\$0.15	45%	50%	\$0.01	3.76	4.48	Building Energy Simulation Tool
Food Mfg	Cooling	HVAC - Duct Repair and Sealing	sqft	Existing	0.02	18	\$0.00	15%	25%	\$0.00	2.04	2.14	Building Energy Simulation Tool
Food Mfg	Heating	HVAC - Duct Repair and Sealing	sqft	Existing	0.04	18	\$0.00	15%	25%	\$0.00	3.70	3.71	Building Energy Simulation Tool
Food Mfg	Ventilation	HVAC - Duct Repair and Sealing	sqft	Existing	0.00	18	\$0.00	15%	25%	\$0.00	0.53	0.63	Building Energy Simulation Tool
Food Mfg	Cooling	Chiller - Chilled Water Reset	sqft	Existing	0.07	10	\$0.01	15%	45%	\$0.02	4.70	5.09	AEG-BEST

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Food Mfg	Cooling	Chiller - Chilled Water Variable-Flow System	sqft	Existing	0.36	15	\$0.50	15%	60%	\$0.11	37.28	41.49	AEG-BEST
Food Mfg	Cooling	Chiller - Variable Speed Fans	sqft	Existing	0.14	15	\$0.03	15%	75%	\$0.02	18.97	20.56	New Jersey TRM
Food Mfg	Cooling	HVAC - Economizer	sqft	Existing	0.09	10	\$0.25	18%	30%	\$0.29	19.10	21.56	AEG-BEST
Food Mfg	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.25	15%	35%	\$7.50	2.14	2.78	7th Power Plan
Food Mfg	Cooling	Destratification Fans (HVLS)	sqft	Existing	0.25	15	\$0.63	15%	50%	\$0.04	75.91	82.07	AEG Research
Food Mfg	Heating	Destratification Fans (HVLS)	sqft	Existing	1.05	15	\$0.63	15%	50%	\$0.04	360.08	362.62	AEG Research
Food Mfg	Cooling	RTU - Maintenance	sqft	Existing	0.12	3	\$0.07	15%	75%	\$0.15	42.96	48.20	AEG Research
Food Mfg	Cooling	Thermostat - WiFi/Interactive	sqft	Existing	0.36	5	\$0.66	5%	15%	\$0.10	29.18	31.78	7th Power Plan
Food Mfg	Heating	Thermostat - WiFi/Interactive	sqft	Existing	0.81	5	\$0.66	5%	15%	\$0.10	72.77	74.98	7th Power Plan
Food Mfg	Ventilation	Thermostat - WiFi/Interactive	sqft	Existing	0.03	5	\$0.66	5%	15%	\$0.10	11.18	13.35	7th Power Plan
Food Mfg	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.10	15	\$0.35	7%	33%	\$0.22	491.11	620.37	7th Power Plan
Food Mfg	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.14	15	\$0.58	7%	33%	\$0.25	651.52	848.64	7th Power Plan
Food Mfg	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	Existing	0.02	15	\$0.00	1%	2%	\$0.01	2.47	3.63	7th Power Plan
Food Mfg	Interior Lighting	Interior Lighting - Timers and Timers	sqft	Existing	0.00	8	\$0.00	7%	7%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Food Mfg	Interior Lighting	Interior Lighting - Skylights	sqft	Existing	0.00	15	\$1.01	15%	23%	\$0.00	0.00	0.00	AEG Research
Food Mfg	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	sqft	Existing	0.04	16	\$1.81	5%	40%	\$2.85	78.46	127.69	7th Power Plan
Food Mfg	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	Existing	0.04	11	\$0.00	15%	50%	\$0.01	82.02	117.21	Illinois TRM
Food Mfg	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	sqft	Existing	0.05	8	\$0.03	15%	25%	\$0.07	98.74	152.25	7th Power Plan
Food Mfg	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	Existing	0.03	8	\$0.02	33%	60%	\$0.07	137.09	217.58	Pacific Gas and Electric Research
Food Mfg	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	Existing	0.03	7	\$1.19	15%	30%	\$3.70	85.29	143.73	AEG Research

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Food Mfg	Process	Process - Conductivity Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Food Mfg	Process	Process - Timers and Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Food Mfg	Motors	Process - Timers and Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Food Mfg	Process	Refrigeration - Floating Head Pressure	employee	Existing	163.54	15	\$160.53	20%	50%	\$0.08	512.82	516.71	RTF Workbook
Food Mfg	Process	Refrigeration - System Optimization	employee	Existing	264.48	15	\$113.04	20%	50%	\$0.04	831.58	831.58	AEG Research
Food Mfg	Motors	Pumping System - Equipment Upgrade	employee	Existing	754.18	10	\$109.92	9%	38%	\$0.02	2,255.78	2,299.31	7th Power Plan
Food Mfg	Motors	Pumping System - System Optimization	employee	Existing	551.04	12	\$167.51	9%	38%	\$0.03	1,592.07	1,645.02	UNIDO Study on Industrial Energy Efficiency
Food Mfg	Motors	Pumping System - Variable Speed Drive	employee	Existing	547.95	10	\$174.28	9%	38%	\$0.03	1,579.76	1,639.40	UNIDO Study on Industrial Energy Efficiency
Food Mfg	Motors	Fan System - Equipment Upgrade	employee	Existing	693.81	10	\$68.92	9%	38%	\$0.01	2,025.63	2,047.57	UNIDO Study on Industrial Energy Efficiency
Food Mfg	Motors	Fan System - Flow Optimization	employee	Existing	809.05	10	\$114.04	9%	38%	\$0.02	2,352.42	2,398.81	UNIDO Study on Industrial Energy Efficiency
Food Mfg	Motors	Fan System - Variable Speed Drive	employee	Existing	1,188.30	10	\$573.83	9%	38%	\$0.05	3,397.04	3,585.57	UNIDO Study on Industrial Energy Efficiency
Food Mfg	Motors	Compressed Air - Equipment Upgrade	employee	Existing	865.48	10	\$62.98	17%	50%	\$0.01	3,041.36	3,041.36	7th Power Plan
Food Mfg	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	Existing	0.00	15	\$0.00	16%	38%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Food Mfg	Motors	Compressed Air - Refrigerated Cycling Dryers	employee	Existing	0.00	10	\$0.00	16%	30%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Food Mfg	Motors	Compressed Air - System Controls	employee	Existing	188.93	10	\$45.03	9%	38%	\$0.03	561.26	582.26	UNIDO Study on Industrial Energy Efficiency
Food Mfg	Motors	Compressed Air - Leak Management Program	employee	Existing	489.79	10	\$45.26	18%	75%	\$0.01	2,943.47	2,963.63	7th Power Plan
Food Mfg	Motors	Compressed Air - Variable Speed Drive	employee	Existing	339.10	15	\$276.07	26%	45%	\$0.06	660.74	713.47	UNIDO Study on Industrial Energy Efficiency
Food Mfg	Motors	Compressed Air - Low Pressure-Drop Filters	employee	Existing	11.47	10	\$4.25	17%	50%	\$0.04	39.32	41.89	Illinois TRM
Food Mfg	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	Existing	71.30	10	\$13.80	17%	50%	\$0.02	247.68	255.47	UNIDO Study on Industrial Energy Efficiency

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Food Mfg	Motors	Compressed Air - Outside Air Intake	employee	Existing	0.00	20	\$0.00	17%	50%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Food Mfg	Motors	Compressed Air - Receiver Capacity Addition	employee	Existing	68.80	15	\$37.96	17%	50%	\$0.04	235.91	251.32	UNIDO Study on Industrial Energy Efficiency
Food Mfg	Motors	Material Handling - Variable Speed Drive	employee	Existing	2,135.36	10	\$774.78	25%	45%	\$0.04	4,312.06	4,491.79	7th Power Plan
Food Mfg	Motors	Motors - Green Rewind (<100 HP)	employee	Existing	43.60	10	\$19.26	10%	50%	\$0.05	875.62	922.23	7th Power Plan
Food Mfg	Motors	Motors - Green Rewind (100 HP+)	employee	Existing	24.71	10	\$6.84	6%	25%	\$0.03	237.54	246.37	7th Power Plan
Food Mfg	Motors	Switch from Belt Drive to Direct Drive	employee	Existing	376.54	12	\$84.54	16%	25%	\$0.02	1,819.50	1,866.36	2015-mdu-irp-report---volume-iii.pdf
Food Mfg	Motors	Motors - Synchronous Belts	employee	Existing	99.67	10	\$25.43	16%	36%	\$0.03	1,035.82	1,076.01	7th Power Plan
Food Mfg	Miscellaneous	Agriculture - Engine Block Timer	employee	Existing	429.92	3	\$5.30	0%	0%	\$0.00	0.00	0.00	Vermont TRM
Food Mfg	Motors	Agriculture - Live Stock Waterer	employee	Existing	1,767.65	10	\$968.02	0%	0%	\$0.06	0.00	0.00	Ontario Power TRM
Food Mfg	Process	Dairy - Milk Precoolers	employee	Existing	1,090.24	15	\$510.83	0%	0%	\$0.04	0.00	0.00	Ontario Power TRM
Food Mfg	Process	Clean Room: Change Filter Strategy	employee	Existing	34.82	15	\$0.26	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Food Mfg	Process	Clean Room: Chiller Optimize	employee	Existing	326.70	15	\$30.25	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Food Mfg	Process	Clean Room: Clean Room HVAC	employee	Existing	198.36	15	\$36.51	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Food Mfg	Process	Elec Chip Fab: Solidstate Chiller	employee	Existing	196.24	15	\$114.69	0%	0%	\$0.05	0.00	0.00	7th Power Plan
Food Mfg	Process	Elec Chip Fab: Eliminate Exhaust	employee	Existing	4.35	15	\$0.92	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Food Mfg	Process	Elec Chip Fab: Exhaust Injector	employee	Existing	8.61	15	\$4.46	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Food Mfg	Process	Elec Chip Fab: Reduce Gas Pressure	employee	Existing	8.70	15	\$0.09	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Food Mfg	Motors	Panel: Hydraulic Press	employee	Existing	3,243.60	10	\$774.32	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Food Mfg	Motors	Wood: Replace Pneumatic Conveyor	employee	Existing	3,517.51	10	\$57.99	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Food Mfg	Process	Metal: New Arc Furnace	employee	Existing	729.36	10	\$76.56	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Food Mfg	Process	Paper: Premium Control Large Material	employee	Existing	239.15	10	\$120.93	0%	0%	\$0.06	0.00	0.00	7th Power Plan

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Food Mfg	Process	Paper: Efficient Pulp Screen	employee	Existing	193.62	10	\$39.83	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Food Mfg	Process	Kraft: Effluent Treatment System	employee	Existing	193.62	10	\$16.33	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Food Mfg	Motors	Kraft: Efficient Agitator	employee	Existing	5,949.46	10	\$577.82	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Food Mfg	Process	Mech Pulp: Premium Process	employee	Existing	2.17	5	\$0.28	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Food Mfg	Motors	Mech Pulp: Refiner Plate Improvement	employee	Existing	50.89	1	\$2.20	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Food Mfg	Cooling	Transformer - High Efficiency	employee	Existing	17.14	10	\$66.54	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Food Mfg	Heating	Transformer - High Efficiency	employee	Existing	38.36	10	\$66.54	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Food Mfg	Ventilation	Transformer - High Efficiency	employee	Existing	1.18	10	\$66.54	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Food Mfg	Interior Lighting	Transformer - High Efficiency	employee	Existing	16.88	10	\$66.54	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Food Mfg	Exterior Lighting	Transformer - High Efficiency	employee	Existing	3.44	10	\$66.54	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Food Mfg	Motors	Transformer - High Efficiency	employee	Existing	357.62	10	\$66.54	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Food Mfg	Process	Transformer - High Efficiency	employee	Existing	95.14	10	\$66.54	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Food Mfg	Miscellaneous	Transformer - High Efficiency	employee	Existing	16.27	10	\$66.54	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Food Mfg	Cooling	Strategic Energy Management	employee	Existing	46.89	3	\$408.67	0%	18%	\$0.07	14.46	15.95	AEG Research
Food Mfg	Heating	Strategic Energy Management	employee	Existing	109.40	3	\$408.67	0%	18%	\$0.07	37.63	39.25	AEG Research
Food Mfg	Ventilation	Strategic Energy Management	employee	Existing	3.38	3	\$408.67	0%	18%	\$0.07	5.78	6.99	AEG Research
Food Mfg	Interior Lighting	Strategic Energy Management	employee	Existing	45.77	3	\$408.67	0%	18%	\$0.07	63.80	91.72	AEG Research
Food Mfg	Exterior Lighting	Strategic Energy Management	employee	Existing	9.89	3	\$408.67	0%	18%	\$0.07	14.13	20.41	AEG Research
Food Mfg	Motors	Strategic Energy Management	employee	Existing	1,025.13	3	\$408.67	0%	18%	\$0.07	1,734.52	1,833.86	AEG Research
Food Mfg	Process	Strategic Energy Management	employee	Existing	272.66	3	\$408.67	0%	18%	\$0.07	473.76	480.87	AEG Research

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Food Mfg	Miscellaneous	Strategic Energy Management	employee	Existing	46.60	3	\$408.67	0%	18%	\$0.07	103.02	80.60	AEG Research
Food Mfg	Interior Lighting	Commissioning	employee	Existing	52.60	3	\$795.58	0%	0%	\$0.14	0.00	0.00	AEG Research
Food Mfg	Exterior Lighting	Commissioning	employee	Existing	11.36	3	\$795.58	0%	0%	\$0.14	0.00	0.00	AEG Research
Food Mfg	Motors	Commissioning	employee	Existing	1,177.57	3	\$795.58	0%	0%	\$0.14	0.00	0.00	AEG Research
Food Mfg	Process	Commissioning	employee	Existing	313.18	3	\$795.58	0%	0%	\$0.14	0.00	0.00	AEG Research
Food Mfg	Miscellaneous	Commissioning	employee	Existing	53.50	3	\$795.58	0%	0%	\$0.14	0.00	0.00	AEG Research
Food Mfg	Interior Lighting	Retrocommissioning	employee	Existing	53.17	3	\$505.05	10%	37%	\$0.09	111.95	159.64	AEG Research
Food Mfg	Exterior Lighting	Retrocommissioning	employee	Existing	11.48	3	\$505.05	10%	37%	\$0.09	24.79	35.53	AEG Research
Food Mfg	Motors	Retrocommissioning	employee	Existing	1,192.07	3	\$505.05	10%	37%	\$0.09	3,043.46	3,193.81	AEG Research
Food Mfg	Process	Retrocommissioning	employee	Existing	317.12	3	\$505.05	10%	37%	\$0.09	831.28	837.58	AEG Research
Food Mfg	Miscellaneous	Retrocommissioning	employee	Existing	54.24	3	\$505.05	10%	37%	\$0.09	180.77	140.49	AEG Research
Food Mfg	Motors	Municipal Sewage Treatment	employee	Existing	95.52	12	\$55.26	0%	0%	\$0.05	0.00	0.00	7th Power Plan
Food Mfg	Motors	Municipal Water Supply Treatment	employee	Existing	0.00	12	\$0.00	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Food Mfg	Cooling	Insulation - Ceiling	sqft	New	0.17	45	\$1.28	15%	25%	\$0.12	6.41	6.46	Building Energy Simulation Tool
Food Mfg	Heating	Insulation - Ceiling	sqft	New	0.40	45	\$1.28	15%	25%	\$0.12	15.81	15.75	Building Energy Simulation Tool
Food Mfg	Ventilation	Insulation - Ceiling	sqft	New	0.01	45	\$1.28	15%	25%	\$0.12	1.95	2.14	Building Energy Simulation Tool
Food Mfg	Cooling	Insulation - Ducting	sqft	New	0.07	20	\$0.84	15%	25%	\$0.66	2.49	2.51	Building Energy Simulation Tool
Food Mfg	Heating	Insulation - Ducting	sqft	New	0.02	20	\$0.84	15%	25%	\$0.66	0.67	0.66	Building Energy Simulation Tool
Food Mfg	Ventilation	Insulation - Ducting	sqft	New	0.00	20	\$0.84	15%	25%	\$0.66	0.08	0.09	Building Energy Simulation Tool
Food Mfg	Cooling	Insulation - Wall Cavity	sqft	New	0.00	45	\$0.15	45%	50%	\$0.01	0.05	0.05	Building Energy Simulation Tool
Food Mfg	Heating	Insulation - Wall Cavity	sqft	New	0.54	45	\$0.15	45%	50%	\$0.01	10.70	10.71	Building Energy Simulation Tool
Food Mfg	Ventilation	Insulation - Wall Cavity	sqft	New	0.01	45	\$0.15	45%	50%	\$0.01	1.30	1.43	Building Energy Simulation Tool

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Food Mfg	Cooling	HVAC - Duct Repair and Sealing	sqft	New	0.02	18	\$0.00	15%	25%	\$0.00	0.80	0.81	Building Energy Simulation Tool
Food Mfg	Heating	HVAC - Duct Repair and Sealing	sqft	New	0.04	18	\$0.00	15%	25%	\$0.00	1.48	1.48	Building Energy Simulation Tool
Food Mfg	Ventilation	HVAC - Duct Repair and Sealing	sqft	New	0.00	18	\$0.00	15%	25%	\$0.00	0.18	0.20	Building Energy Simulation Tool
Food Mfg	Cooling	Chiller - Chilled Water Reset	sqft	New	0.05	10	\$0.01	15%	45%	\$0.02	0.59	0.61	AEG-BEST
Food Mfg	Cooling	Chiller - Chilled Water Variable-Flow System	sqft	New	0.30	15	\$0.50	15%	60%	\$0.13	6.29	6.44	AEG-BEST
Food Mfg	Cooling	Chiller - Variable Speed Fans	sqft	New	0.11	15	\$0.03	15%	75%	\$0.02	3.08	3.16	New Jersey TRM
Food Mfg	Cooling	HVAC - Economizer	sqft	New	0.08	10	\$0.25	18%	30%	\$0.31	2.78	2.85	AEG-BEST
Food Mfg	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.25	15%	35%	\$8.97	0.34	0.40	7th Power Plan
Food Mfg	Cooling	Destratification Fans (HVLS)	sqft	New	0.22	15	\$0.63	15%	50%	\$0.04	13.77	14.14	AEG Research
Food Mfg	Heating	Destratification Fans (HVLS)	sqft	New	0.99	15	\$0.63	15%	50%	\$0.04	65.80	65.94	AEG Research
Food Mfg	Cooling	RTU - Maintenance	sqft	New	0.12	3	\$0.07	15%	75%	\$0.16	0.93	0.99	AEG Research
Food Mfg	Cooling	Thermostat - WiFi/Interactive	sqft	New	0.34	5	\$0.66	5%	15%	\$0.10	1.67	1.72	7th Power Plan
Food Mfg	Heating	Thermostat - WiFi/Interactive	sqft	New	0.79	5	\$0.66	5%	15%	\$0.10	4.13	4.12	7th Power Plan
Food Mfg	Ventilation	Thermostat - WiFi/Interactive	sqft	New	0.02	5	\$0.66	5%	15%	\$0.10	0.51	0.62	7th Power Plan
Food Mfg	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.08	15	\$0.35	22%	41%	\$0.21	292.22	341.49	7th Power Plan
Food Mfg	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.11	15	\$0.58	22%	41%	\$0.25	395.86	465.09	7th Power Plan
Food Mfg	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	New	0.02	15	\$0.00	1%	2%	\$0.01	0.34	0.44	7th Power Plan
Food Mfg	Interior Lighting	Interior Lighting - Timeclocks and Timers	sqft	New	0.00	8	\$0.00	7%	7%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Food Mfg	Interior Lighting	Interior Lighting - Skylights	sqft	New	0.00	15	\$1.01	18%	24%	\$0.00	0.00	0.00	AEG Research
Food Mfg	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	sqft	New	0.03	16	\$1.81	5%	40%	\$2.85	15.45	19.84	7th Power Plan

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Food Mfg	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	New	0.03	11	\$0.00	15%	50%	\$0.01	12.03	15.59	Illinois TRM
Food Mfg	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	sqft	New	0.04	8	\$0.03	15%	25%	\$0.07	11.08	15.43	7th Power Plan
Food Mfg	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	New	0.02	8	\$0.02	44%	60%	\$0.07	9.47	13.12	Pacific Gas and Electric Research
Food Mfg	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	New	0.02	7	\$1.19	15%	30%	\$3.69	9.62	13.43	AEG Research
Food Mfg	Process	Process - Conductivity Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Food Mfg	Process	Process - Timers and Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Food Mfg	Motors	Process - Timers and Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Food Mfg	Process	Refrigeration - Floating Head Pressure	employee	New	164.70	15	\$113.45	20%	50%	\$0.06	100.15	100.06	RTF Workbook
Food Mfg	Process	Refrigeration - System Optimization	employee	New	264.48	15	\$39.67	20%	50%	\$0.01	160.64	160.64	AEG Research
Food Mfg	Motors	Pumping System - Equipment Upgrade	employee	New	764.61	10	\$109.92	9%	38%	\$0.02	346.39	345.39	7th Power Plan
Food Mfg	Motors	Pumping System - System Optimization	employee	New	569.66	12	\$167.51	9%	38%	\$0.03	424.93	421.94	UNIDO Study on Industrial Energy Efficiency
Food Mfg	Motors	Pumping System - Variable Speed Drive	employee	New	568.30	10	\$174.28	9%	38%	\$0.03	391.68	388.75	UNIDO Study on Industrial Energy Efficiency
Food Mfg	Motors	Fan System - Equipment Upgrade	employee	New	705.09	10	\$68.92	9%	38%	\$0.01	483.25	482.52	UNIDO Study on Industrial Energy Efficiency
Food Mfg	Motors	Fan System - Flow Optimization	employee	New	828.74	10	\$114.04	9%	38%	\$0.02	569.10	567.03	UNIDO Study on Industrial Energy Efficiency
Food Mfg	Motors	Fan System - Variable Speed Drive	employee	New	1,248.44	10	\$573.83	9%	38%	\$0.05	862.49	853.97	UNIDO Study on Industrial Energy Efficiency
Food Mfg	Motors	Compressed Air - Equipment Upgrade	employee	New	865.48	10	\$62.98	17%	50%	\$0.01	455.59	455.59	7th Power Plan
Food Mfg	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	New	0.00	15	\$0.00	16%	38%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Food Mfg	Motors	Compressed Air - Refrigerated Cycling Dryers	employee	New	0.00	10	\$0.00	16%	30%	\$0.00	0.00	0.00	Michigan Energy Measures Database

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Food Mfg	Motors	Compressed Air - System Controls	employee	New	194.61	10	\$45.03	9%	38%	\$0.03	88.31	87.96	UNIDO Study on Industrial Energy Efficiency
Food Mfg	Motors	Compressed Air - Leak Management Program	employee	New	491.83	10	\$45.26	18%	75%	\$0.01	444.71	444.07	7th Power Plan
Food Mfg	Motors	Compressed Air - Variable Speed Drive	employee	New	358.50	15	\$276.07	26%	45%	\$0.06	140.53	139.47	UNIDO Study on Industrial Energy Efficiency
Food Mfg	Motors	Compressed Air - Low Pressure-Drop Filters	employee	New	12.02	10	\$4.25	17%	50%	\$0.04	6.38	6.35	Illinois TRM
Food Mfg	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	New	73.17	10	\$13.80	17%	50%	\$0.02	38.71	38.56	UNIDO Study on Industrial Energy Efficiency
Food Mfg	Motors	Compressed Air - Outside Air Intake	employee	New	0.00	20	\$0.00	17%	50%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Food Mfg	Motors	Compressed Air - Receiver Capacity Addition	employee	New	72.13	15	\$37.96	17%	50%	\$0.04	49.40	49.07	UNIDO Study on Industrial Energy Efficiency
Food Mfg	Motors	Material Handling - Variable Speed Drive	employee	New	2,220.94	10	\$774.78	25%	45%	\$0.04	1,074.75	1,066.14	7th Power Plan
Food Mfg	Motors	Motors - Green Rewind (<100 HP)	employee	New	45.73	10	\$19.26	10%	50%	\$0.05	221.65	219.53	7th Power Plan
Food Mfg	Motors	Motors - Green Rewind (100 HP+)	employee	New	25.62	10	\$6.84	6%	25%	\$0.03	58.85	58.41	7th Power Plan
Food Mfg	Motors	Switch from Belt Drive to Direct Drive	employee	New	386.62	12	\$84.54	16%	25%	\$0.02	480.07	477.33	2015-mdu-irp-report---volume-iii.pdf
Food Mfg	Motors	Motors - Synchronous Belts	employee	New	102.80	10	\$25.43	16%	36%	\$0.03	163.30	162.61	7th Power Plan
Food Mfg	Miscellaneous	Agriculture - Engine Block Timer	employee	New	429.92	3	\$5.30	0%	0%	\$0.00	0.00	0.00	Vermont TRM
Food Mfg	Motors	Agriculture - Live Stock Waterer	employee	New	1,868.77	10	\$968.02	0%	0%	\$0.06	0.00	0.00	Ontario Power TRM
Food Mfg	Process	Dairy - Milk Precoolers	employee	New	1,098.01	15	\$510.83	0%	0%	\$0.04	0.00	0.00	Ontario Power TRM
Food Mfg	Process	Clean Room: Change Filter Strategy	employee	New	34.82	15	\$0.26	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Food Mfg	Process	Clean Room: Chiller Optimize	employee	New	326.70	15	\$30.25	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Food Mfg	Process	Clean Room: Clean Room HVAC	employee	New	197.64	15	\$36.51	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Food Mfg	Process	Elec Chip Fab: Solidstate Chiller	employee	New	197.64	15	\$114.69	0%	0%	\$0.05	0.00	0.00	7th Power Plan
Food Mfg	Process	Elec Chip Fab: Eliminate Exhaust	employee	New	4.34	15	\$0.92	0%	0%	\$0.02	0.00	0.00	7th Power Plan

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Food Mfg	Process	Elec Chip Fab: Exhaust Injector	employee	New	8.67	15	\$4.46	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Food Mfg	Process	Elec Chip Fab: Reduce Gas Pressure	employee	New	8.70	15	\$0.09	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Food Mfg	Motors	Panel: Hydraulic Press	employee	New	3,338.99	10	\$774.32	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Food Mfg	Motors	Wood: Replace Pneumatic Conveyor	employee	New	3,517.51	10	\$57.99	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Food Mfg	Process	Metal: New Arc Furnace	employee	New	729.36	10	\$76.56	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Food Mfg	Process	Paper: Premium Control Large Material	employee	New	240.85	10	\$120.93	0%	0%	\$0.06	0.00	0.00	7th Power Plan
Food Mfg	Process	Paper: Efficient Pulp Screen	employee	New	192.91	10	\$39.83	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Food Mfg	Process	Kraft: Effluent Treatment System	employee	New	193.62	10	\$16.33	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Food Mfg	Motors	Kraft: Efficient Agitator	employee	New	6,046.19	10	\$577.82	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Food Mfg	Process	Mech Pulp: Premium Process	employee	New	2.16	5	\$0.28	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Food Mfg	Motors	Mech Pulp: Refiner Plate Improvement	employee	New	52.93	1	\$2.20	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Food Mfg	Cooling	Transformer - High Efficiency	employee	New	15.50	10	\$66.30	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Food Mfg	Heating	Transformer - High Efficiency	employee	New	37.29	10	\$66.30	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Food Mfg	Ventilation	Transformer - High Efficiency	employee	New	0.72	10	\$66.30	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Food Mfg	Interior Lighting	Transformer - High Efficiency	employee	New	13.51	10	\$66.30	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Food Mfg	Exterior Lighting	Transformer - High Efficiency	employee	New	2.74	10	\$66.30	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Food Mfg	Motors	Transformer - High Efficiency	employee	New	378.66	10	\$66.30	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Food Mfg	Process	Transformer - High Efficiency	employee	New	96.24	10	\$66.30	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Food Mfg	Miscellaneous	Transformer - High Efficiency	employee	New	15.41	10	\$66.30	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Food Mfg	Cooling	Strategic Energy Management	employee	New	44.14	3	\$407.17	0%	18%	\$0.07	0.30	0.31	AEG Research
Food Mfg	Heating	Strategic Energy Management	employee	New	107.24	3	\$407.17	0%	18%	\$0.07	0.77	0.77	AEG Research

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Food Mfg	Ventilation	Strategic Energy Management	employee	New	2.08	3	\$407.17	0%	18%	\$0.07	0.09	0.12	AEG Research
Food Mfg	Interior Lighting	Strategic Energy Management	employee	New	36.38	3	\$407.17	0%	18%	\$0.07	1.26	1.91	AEG Research
Food Mfg	Exterior Lighting	Strategic Energy Management	employee	New	7.92	3	\$407.17	0%	18%	\$0.07	0.29	0.44	AEG Research
Food Mfg	Motors	Strategic Energy Management	employee	New	1,093.90	3	\$407.17	0%	18%	\$0.07	38.94	39.18	AEG Research
Food Mfg	Process	Strategic Energy Management	employee	New	278.02	3	\$407.17	0%	18%	\$0.07	9.81	9.81	AEG Research
Food Mfg	Miscellaneous	Strategic Energy Management	employee	New	44.53	3	\$407.17	0%	18%	\$0.07	1.94	1.31	AEG Research
Food Mfg	Interior Lighting	Commissioning	employee	New	41.95	3	\$798.82	10%	37%	\$0.14	2.18	3.30	AEG Research
Food Mfg	Exterior Lighting	Commissioning	employee	New	9.13	3	\$798.82	10%	37%	\$0.14	0.50	0.76	AEG Research
Food Mfg	Motors	Commissioning	employee	New	1,261.21	3	\$798.82	10%	37%	\$0.14	67.38	67.78	AEG Research
Food Mfg	Process	Commissioning	employee	New	320.54	3	\$798.82	10%	37%	\$0.14	16.98	16.97	AEG Research
Food Mfg	Miscellaneous	Commissioning	employee	New	51.34	3	\$798.82	10%	37%	\$0.14	3.36	2.26	AEG Research
Food Mfg	Interior Lighting	Retrocommissioning	employee	New	41.98	3	\$507.11	0%	0%	\$0.09	0.00	0.00	AEG Research
Food Mfg	Exterior Lighting	Retrocommissioning	employee	New	9.14	3	\$507.11	0%	0%	\$0.09	0.00	0.00	AEG Research
Food Mfg	Motors	Retrocommissioning	employee	New	1,262.19	3	\$507.11	0%	0%	\$0.09	0.00	0.00	AEG Research
Food Mfg	Process	Retrocommissioning	employee	New	320.79	3	\$507.11	0%	0%	\$0.09	0.00	0.00	AEG Research
Food Mfg	Miscellaneous	Retrocommissioning	employee	New	51.38	3	\$507.11	0%	0%	\$0.09	0.00	0.00	AEG Research
Food Mfg	Motors	Municipal Sewage Treatment	employee	New	100.99	12	\$55.26	0%	0%	\$0.05	0.00	0.00	7th Power Plan
Food Mfg	Motors	Municipal Water Supply Treatment	employee	New	0.00	12	\$0.00	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Paper Mfg	Cooling	Insulation - Ceiling	sqft	Existing	0.18	45	\$1.28	15%	25%	\$0.11	4.14	4.53	Building Energy Simulation Tool
Paper Mfg	Heating	Insulation - Ceiling	sqft	Existing	0.40	45	\$1.28	15%	25%	\$0.11	10.22	10.62	Building Energy Simulation Tool
Paper Mfg	Ventilation	Insulation - Ceiling	sqft	Existing	0.01	45	\$1.28	15%	25%	\$0.11	1.57	1.89	Building Energy Simulation Tool
Paper Mfg	Cooling	Insulation - Ducting	sqft	Existing	0.07	20	\$0.84	15%	25%	\$0.62	1.57	1.74	Building Energy Simulation Tool

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Paper Mfg	Heating	Insulation - Ducting	sqft	Existing	0.02	20	\$0.84	15%	25%	\$0.62	0.42	0.45	Building Energy Simulation Tool
Paper Mfg	Ventilation	Insulation - Ducting	sqft	Existing	0.00	20	\$0.84	15%	25%	\$0.62	0.07	0.08	Building Energy Simulation Tool
Paper Mfg	Cooling	Insulation - Wall Cavity	sqft	Existing	0.00	45	\$0.15	45%	50%	\$0.01	0.03	0.04	Building Energy Simulation Tool
Paper Mfg	Heating	Insulation - Wall Cavity	sqft	Existing	0.58	45	\$0.15	45%	50%	\$0.01	7.46	7.48	Building Energy Simulation Tool
Paper Mfg	Ventilation	Insulation - Wall Cavity	sqft	Existing	0.02	45	\$0.15	45%	50%	\$0.01	1.07	1.27	Building Energy Simulation Tool
Paper Mfg	Cooling	HVAC - Duct Repair and Sealing	sqft	Existing	0.02	18	\$0.00	15%	25%	\$0.00	0.58	0.61	Building Energy Simulation Tool
Paper Mfg	Heating	HVAC - Duct Repair and Sealing	sqft	Existing	0.04	18	\$0.00	15%	25%	\$0.00	1.05	1.05	Building Energy Simulation Tool
Paper Mfg	Ventilation	HVAC - Duct Repair and Sealing	sqft	Existing	0.00	18	\$0.00	15%	25%	\$0.00	0.15	0.18	Building Energy Simulation Tool
Paper Mfg	Cooling	Chiller - Chilled Water Reset	sqft	Existing	0.07	10	\$0.01	15%	45%	\$0.02	1.34	1.45	AEG-BEST
Paper Mfg	Cooling	Chiller - Chilled Water Variable-Flow System	sqft	Existing	0.36	15	\$0.50	15%	60%	\$0.11	10.60	11.79	AEG-BEST
Paper Mfg	Cooling	Chiller - Variable Speed Fans	sqft	Existing	0.14	15	\$0.03	15%	75%	\$0.02	5.39	5.84	New Jersey TRM
Paper Mfg	Cooling	HVAC - Economizer	sqft	Existing	0.02	10	\$0.25	18%	30%	\$1.26	5.25	6.08	AEG-BEST
Paper Mfg	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.25	15%	35%	\$7.50	0.61	0.79	7th Power Plan
Paper Mfg	Cooling	Destratification Fans (HVLS)	sqft	Existing	0.25	15	\$0.63	15%	50%	\$0.04	21.57	23.32	AEG Research
Paper Mfg	Heating	Destratification Fans (HVLS)	sqft	Existing	1.05	15	\$0.63	15%	50%	\$0.04	102.34	103.06	AEG Research
Paper Mfg	Cooling	RTU - Maintenance	sqft	Existing	0.12	3	\$0.07	15%	75%	\$0.15	12.21	13.70	AEG Research
Paper Mfg	Cooling	Thermostat - WiFi/Interactive	sqft	Existing	0.37	5	\$0.66	5%	15%	\$0.10	8.38	9.09	7th Power Plan
Paper Mfg	Heating	Thermostat - WiFi/Interactive	sqft	Existing	0.81	5	\$0.66	5%	15%	\$0.10	20.68	21.31	7th Power Plan
Paper Mfg	Ventilation	Thermostat - WiFi/Interactive	sqft	Existing	0.03	5	\$0.66	5%	15%	\$0.10	3.18	3.79	7th Power Plan
Paper Mfg	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.02	15	\$0.35	7%	33%	\$0.94	183.01	233.93	7th Power Plan
Paper Mfg	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.03	15	\$0.58	7%	33%	\$1.11	242.78	320.04	7th Power Plan

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Paper Mfg	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	Existing	0.02	15	\$0.00	1%	2%	\$0.01	0.94	1.38	7th Power Plan
Paper Mfg	Interior Lighting	Interior Lighting - Timeclocks and Timers	sqft	Existing	0.00	8	\$0.00	7%	7%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Paper Mfg	Interior Lighting	Interior Lighting - Skylights	sqft	Existing	0.00	15	\$1.01	15%	23%	\$0.00	0.00	0.00	AEG Research
Paper Mfg	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	sqft	Existing	0.04	16	\$1.81	5%	40%	\$2.85	29.88	48.68	7th Power Plan
Paper Mfg	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	Existing	0.04	11	\$0.00	15%	50%	\$0.01	31.28	44.70	Illinois TRM
Paper Mfg	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	sqft	Existing	0.05	8	\$0.03	15%	25%	\$0.07	37.66	58.07	7th Power Plan
Paper Mfg	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	Existing	0.03	8	\$0.02	33%	60%	\$0.07	52.28	82.99	Pacific Gas and Electric Research
Paper Mfg	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	Existing	0.03	7	\$1.19	15%	30%	\$3.70	32.48	54.80	AEG Research
Paper Mfg	Process	Process - Conductivity Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Paper Mfg	Process	Process - Timers and Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Paper Mfg	Motors	Process - Timers and Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Paper Mfg	Process	Refrigeration - Floating Head Pressure	employee	Existing	34.29	15	\$35.07	20%	50%	\$0.08	18.75	20.04	RTF Workbook
Paper Mfg	Process	Refrigeration - System Optimization	employee	Existing	56.56	15	\$24.69	20%	50%	\$0.04	31.59	32.48	AEG Research
Paper Mfg	Motors	Pumping System - Equipment Upgrade	employee	Existing	3,225.75	10	\$483.39	9%	38%	\$0.02	1,710.83	1,802.18	7th Power Plan
Paper Mfg	Motors	Pumping System - System Optimization	employee	Existing	2,366.01	12	\$736.68	9%	38%	\$0.03	1,214.16	1,287.24	UNIDO Study on Industrial Energy Efficiency
Paper Mfg	Motors	Pumping System - Variable Speed Drive	employee	Existing	2,348.45	10	\$766.43	9%	38%	\$0.03	1,201.63	1,281.39	UNIDO Study on Industrial Energy Efficiency
Paper Mfg	Motors	Fan System - Equipment Upgrade	employee	Existing	1,787.84	10	\$176.23	9%	38%	\$0.01	943.49	949.56	UNIDO Study on Industrial Energy Efficiency
Paper Mfg	Motors	Fan System - Flow Optimization	employee	Existing	2,038.43	10	\$291.59	9%	38%	\$0.02	1,055.21	1,098.49	UNIDO Study on Industrial Energy Efficiency
Paper Mfg	Motors	Fan System - Variable Speed Drive	employee	Existing	2,953.53	10	\$1,467.25	9%	38%	\$0.05	1,496.40	1,626.86	UNIDO Study on Industrial Energy Efficiency

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Paper Mfg	Motors	Compressed Air - Equipment Upgrade	employee	Existing	3,233.27	10	\$235.27	17%	50%	\$0.01	2,049.74	2,049.74	7th Power Plan
Paper Mfg	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	Existing	0.00	15	\$0.00	16%	38%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Paper Mfg	Motors	Compressed Air - Refrigerated Cycling Dryers	employee	Existing	0.00	10	\$0.00	16%	30%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Paper Mfg	Motors	Compressed Air - System Controls	employee	Existing	689.34	10	\$168.22	9%	38%	\$0.03	363.76	388.27	UNIDO Study on Industrial Energy Efficiency
Paper Mfg	Motors	Compressed Air - Leak Management Program	employee	Existing	1,781.89	10	\$169.10	18%	75%	\$0.01	1,899.64	1,974.72	7th Power Plan
Paper Mfg	Motors	Compressed Air - Variable Speed Drive	employee	Existing	1,234.09	15	\$1,031.33	26%	45%	\$0.06	426.49	475.20	UNIDO Study on Industrial Energy Efficiency
Paper Mfg	Motors	Compressed Air - Low Pressure-Drop Filters	employee	Existing	41.65	10	\$15.90	17%	50%	\$0.04	25.31	27.88	Illinois TRM
Paper Mfg	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	Existing	260.17	10	\$51.57	17%	50%	\$0.02	160.56	170.37	UNIDO Study on Industrial Energy Efficiency
Paper Mfg	Motors	Compressed Air - Outside Air Intake	employee	Existing	0.00	20	\$0.00	17%	50%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Paper Mfg	Motors	Compressed Air - Receiver Capacity Addition	employee	Existing	249.87	15	\$141.81	17%	50%	\$0.04	151.85	167.24	UNIDO Study on Industrial Energy Efficiency
Paper Mfg	Motors	Material Handling - Variable Speed Drive	employee	Existing	6,711.05	10	\$2,504.28	25%	45%	\$0.04	2,402.48	2,576.87	7th Power Plan
Paper Mfg	Motors	Motors - Green Rewind (<100 HP)	employee	Existing	134.45	10	\$61.10	10%	50%	\$0.05	478.56	519.16	7th Power Plan
Paper Mfg	Motors	Motors - Green Rewind (100 HP+)	employee	Existing	76.40	10	\$21.69	6%	25%	\$0.03	130.34	138.91	7th Power Plan
Paper Mfg	Motors	Switch from Belt Drive to Direct Drive	employee	Existing	1,166.63	12	\$268.19	16%	25%	\$0.02	1,001.43	1,053.77	2015-mdu-irp-report---volume-iii.pdf
Paper Mfg	Motors	Motors - Synchronous Belts	employee	Existing	308.72	10	\$80.68	16%	36%	\$0.03	569.86	609.22	7th Power Plan
Paper Mfg	Miscellaneous	Agriculture - Engine Block Timer	employee	Existing	899.23	3	\$11.09	0%	0%	\$0.00	0.00	0.00	Vermont TRM
Paper Mfg	Motors	Agriculture - Live Stock Waterer	employee	Existing	7,572.91	10	\$4,257.09	0%	0%	\$0.06	0.00	0.00	Ontario Power TRM
Paper Mfg	Process	Dairy - Milk Precoolers	employee	Existing	235.02	15	\$111.58	0%	0%	\$0.04	0.00	0.00	Ontario Power TRM
Paper Mfg	Process	Clean Room: Change Filter Strategy	employee	Existing	320.93	15	\$2.37	0%	0%	\$0.00	0.00	0.00	7th Power Plan

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Paper Mfg	Process	Clean Room: Chiller Optimize	employee	Existing	71.36	15	\$6.61	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Paper Mfg	Process	Clean Room: Clean Room HVAC	employee	Existing	42.97	15	\$7.98	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Paper Mfg	Process	Elec Chip Fab: Solidstate Chiller	employee	Existing	42.30	15	\$25.05	0%	0%	\$0.05	0.00	0.00	7th Power Plan
Paper Mfg	Process	Elec Chip Fab: Eliminate Exhaust	employee	Existing	39.78	15	\$8.52	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Paper Mfg	Process	Elec Chip Fab: Exhaust Injector	employee	Existing	78.34	15	\$41.08	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Paper Mfg	Process	Elec Chip Fab: Reduce Gas Pressure	employee	Existing	80.23	15	\$0.82	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Paper Mfg	Motors	Panel: Hydraulic Press	employee	Existing	10,239.25	10	\$2,502.78	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Paper Mfg	Motors	Wood: Replace Pneumatic Conveyor	employee	Existing	11,369.46	10	\$187.44	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Paper Mfg	Process	Metal: New Arc Furnace	employee	Existing	1,086.55	10	\$115.02	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Paper Mfg	Process	Paper: Premium Control Large Material	employee	Existing	204.46	10	\$104.76	15%	40%	\$0.06	442.42	451.72	7th Power Plan
Paper Mfg	Process	Paper: Efficient Pulp Screen	employee	Existing	166.33	10	\$34.51	15%	29%	\$0.02	207.21	208.82	7th Power Plan
Paper Mfg	Process	Kraft: Effluent Treatment System	employee	Existing	167.74	10	\$14.15	15%	25%	\$0.01	140.15	140.15	7th Power Plan
Paper Mfg	Motors	Kraft: Efficient Agitator	employee	Existing	19,286.10	10	\$1,867.65	15%	29%	\$0.01	4,812.15	4,849.23	7th Power Plan
Paper Mfg	Process	Mech Pulp: Premium Process	employee	Existing	1.84	5	\$0.24	15%	38%	\$0.03	3.71	3.78	7th Power Plan
Paper Mfg	Motors	Mech Pulp: Refiner Plate Improvement	employee	Existing	160.01	1	\$7.12	15%	52%	\$0.04	99.74	105.22	7th Power Plan
Paper Mfg	Cooling	Transformer - High Efficiency	employee	Existing	26.99	10	\$170.14	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Paper Mfg	Heating	Transformer - High Efficiency	employee	Existing	60.43	10	\$170.14	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Paper Mfg	Ventilation	Transformer - High Efficiency	employee	Existing	1.87	10	\$170.14	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Paper Mfg	Interior Lighting	Transformer - High Efficiency	employee	Existing	35.70	10	\$170.14	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Paper Mfg	Exterior Lighting	Transformer - High Efficiency	employee	Existing	7.28	10	\$170.14	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Paper Mfg	Motors	Transformer - High Efficiency	employee	Existing	1,104.81	10	\$170.14	15%	15%	\$0.01	0.00	0.00	7th Power Plan

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Paper Mfg	Process	Transformer - High Efficiency	employee	Existing	79.51	10	\$170.14	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Paper Mfg	Miscellaneous	Transformer - High Efficiency	employee	Existing	34.03	10	\$170.14	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Paper Mfg	Cooling	Strategic Energy Management	employee	Existing	74.46	3	\$1,044.93	0%	24%	\$0.07	5.54	6.08	AEG Research
Paper Mfg	Heating	Strategic Energy Management	employee	Existing	172.34	3	\$1,044.93	0%	24%	\$0.07	14.26	14.87	AEG Research
Paper Mfg	Ventilation	Strategic Energy Management	employee	Existing	5.33	3	\$1,044.93	0%	24%	\$0.07	2.19	2.65	AEG Research
Paper Mfg	Interior Lighting	Strategic Energy Management	employee	Existing	102.45	3	\$1,044.93	0%	24%	\$0.07	36.99	48.89	AEG Research
Paper Mfg	Exterior Lighting	Strategic Energy Management	employee	Existing	20.91	3	\$1,044.93	0%	24%	\$0.07	7.19	10.38	AEG Research
Paper Mfg	Motors	Strategic Energy Management	employee	Existing	3,169.01	3	\$1,044.93	0%	24%	\$0.07	1,268.33	1,370.52	AEG Research
Paper Mfg	Process	Strategic Energy Management	employee	Existing	228.05	3	\$1,044.93	0%	24%	\$0.07	92.27	97.45	AEG Research
Paper Mfg	Miscellaneous	Strategic Energy Management	employee	Existing	97.53	3	\$1,044.93	0%	24%	\$0.07	51.89	40.57	AEG Research
Paper Mfg	Interior Lighting	Commissioning	employee	Existing	117.58	3	\$2,134.86	0%	0%	\$0.14	0.00	0.00	AEG Research
Paper Mfg	Exterior Lighting	Commissioning	employee	Existing	24.00	3	\$2,134.86	0%	0%	\$0.14	0.00	0.00	AEG Research
Paper Mfg	Motors	Commissioning	employee	Existing	3,635.00	3	\$2,134.86	0%	0%	\$0.14	0.00	0.00	AEG Research
Paper Mfg	Process	Commissioning	employee	Existing	261.56	3	\$2,134.86	0%	0%	\$0.14	0.00	0.00	AEG Research
Paper Mfg	Miscellaneous	Commissioning	employee	Existing	111.78	3	\$2,134.86	0%	0%	\$0.14	0.00	0.00	AEG Research
Paper Mfg	Interior Lighting	Retrocommissioning	employee	Existing	118.98	3	\$1,355.25	10%	35%	\$0.09	45.02	59.08	AEG Research
Paper Mfg	Exterior Lighting	Retrocommissioning	employee	Existing	24.28	3	\$1,355.25	10%	35%	\$0.09	8.75	12.55	AEG Research
Paper Mfg	Motors	Retrocommissioning	employee	Existing	3,682.71	3	\$1,355.25	10%	35%	\$0.09	1,543.88	1,656.71	AEG Research
Paper Mfg	Process	Retrocommissioning	employee	Existing	265.05	3	\$1,355.25	10%	35%	\$0.09	112.31	117.81	AEG Research
Paper Mfg	Miscellaneous	Retrocommissioning	employee	Existing	113.45	3	\$1,355.25	10%	35%	\$0.09	63.16	49.09	AEG Research
Paper Mfg	Motors	Municipal Sewage Treatment	employee	Existing	409.24	12	\$243.01	0%	0%	\$0.05	0.00	0.00	7th Power Plan
Paper Mfg	Motors	Municipal Water Supply Treatment	employee	Existing	0.00	12	\$0.00	0%	0%	\$0.00	0.00	0.00	7th Power Plan

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Paper Mfg	Cooling	Insulation - Ceiling	sqft	New	0.17	45	\$1.28	15%	25%	\$0.12	1.83	1.84	Building Energy Simulation Tool
Paper Mfg	Heating	Insulation - Ceiling	sqft	New	0.40	45	\$1.28	15%	25%	\$0.12	4.50	4.48	Building Energy Simulation Tool
Paper Mfg	Ventilation	Insulation - Ceiling	sqft	New	0.01	45	\$1.28	15%	25%	\$0.12	0.56	0.61	Building Energy Simulation Tool
Paper Mfg	Cooling	Insulation - Ducting	sqft	New	0.07	20	\$0.84	15%	25%	\$0.66	0.71	0.71	Building Energy Simulation Tool
Paper Mfg	Heating	Insulation - Ducting	sqft	New	0.02	20	\$0.84	15%	25%	\$0.66	0.19	0.19	Building Energy Simulation Tool
Paper Mfg	Ventilation	Insulation - Ducting	sqft	New	0.00	20	\$0.84	15%	25%	\$0.66	0.02	0.03	Building Energy Simulation Tool
Paper Mfg	Cooling	Insulation - Wall Cavity	sqft	New	0.00	45	\$0.15	45%	50%	\$0.01	0.01	0.01	Building Energy Simulation Tool
Paper Mfg	Heating	Insulation - Wall Cavity	sqft	New	0.54	45	\$0.15	45%	50%	\$0.01	3.05	3.05	Building Energy Simulation Tool
Paper Mfg	Ventilation	Insulation - Wall Cavity	sqft	New	0.01	45	\$0.15	45%	50%	\$0.01	0.37	0.41	Building Energy Simulation Tool
Paper Mfg	Cooling	HVAC - Duct Repair and Sealing	sqft	New	0.02	18	\$0.00	15%	25%	\$0.00	0.23	0.23	Building Energy Simulation Tool
Paper Mfg	Heating	HVAC - Duct Repair and Sealing	sqft	New	0.04	18	\$0.00	15%	25%	\$0.00	0.42	0.42	Building Energy Simulation Tool
Paper Mfg	Ventilation	HVAC - Duct Repair and Sealing	sqft	New	0.00	18	\$0.00	15%	25%	\$0.00	0.05	0.06	Building Energy Simulation Tool
Paper Mfg	Cooling	Chiller - Chilled Water Reset	sqft	New	0.05	10	\$0.01	15%	45%	\$0.02	0.17	0.17	AEG-BEST
Paper Mfg	Cooling	Chiller - Chilled Water Variable-Flow System	sqft	New	0.30	15	\$0.50	15%	60%	\$0.13	1.79	1.83	AEG-BEST
Paper Mfg	Cooling	Chiller - Variable Speed Fans	sqft	New	0.11	15	\$0.03	15%	75%	\$0.02	0.88	0.90	New Jersey TRM
Paper Mfg	Cooling	HVAC - Economizer	sqft	New	0.02	10	\$0.25	18%	30%	\$1.35	0.79	0.81	AEG-BEST
Paper Mfg	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.25	15%	35%	\$8.97	0.10	0.11	7th Power Plan
Paper Mfg	Cooling	Destratification Fans (HVLS)	sqft	New	0.22	15	\$0.63	15%	50%	\$0.04	3.92	4.03	AEG Research
Paper Mfg	Heating	Destratification Fans (HVLS)	sqft	New	0.99	15	\$0.63	15%	50%	\$0.04	18.73	18.77	AEG Research
Paper Mfg	Cooling	RTU - Maintenance	sqft	New	0.12	3	\$0.07	15%	75%	\$0.16	0.27	0.28	AEG Research
Paper Mfg	Cooling	Thermostat - WiFi/Interactive	sqft	New	0.34	5	\$0.66	5%	15%	\$0.10	0.48	0.49	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Paper Mfg	Heating	Thermostat - WiFi/Interactive	sqft	New	0.79	5	\$0.66	5%	15%	\$0.10	1.17	1.17	7th Power Plan
Paper Mfg	Ventilation	Thermostat - WiFi/Interactive	sqft	New	0.02	5	\$0.66	5%	15%	\$0.10	0.14	0.18	7th Power Plan
Paper Mfg	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.02	15	\$0.35	22%	41%	\$0.94	111.48	130.24	7th Power Plan
Paper Mfg	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.03	15	\$0.58	22%	41%	\$1.10	151.02	177.38	7th Power Plan
Paper Mfg	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	New	0.02	15	\$0.00	1%	2%	\$0.01	0.13	0.17	7th Power Plan
Paper Mfg	Interior Lighting	Interior Lighting - Timeclocks and Timers	sqft	New	0.00	8	\$0.00	7%	7%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Paper Mfg	Interior Lighting	Interior Lighting - Skylights	sqft	New	0.00	15	\$1.01	18%	24%	\$0.00	0.00	0.00	AEG Research
Paper Mfg	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	sqft	New	0.03	16	\$1.81	5%	40%	\$2.85	5.91	7.59	7th Power Plan
Paper Mfg	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	New	0.03	11	\$0.00	15%	50%	\$0.01	4.59	5.96	Illinois TRM
Paper Mfg	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	sqft	New	0.04	8	\$0.03	15%	25%	\$0.07	4.23	5.90	7th Power Plan
Paper Mfg	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	New	0.02	8	\$0.02	44%	60%	\$0.07	3.62	5.02	Pacific Gas and Electric Research
Paper Mfg	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	New	0.02	7	\$1.19	15%	30%	\$3.69	3.67	5.14	AEG Research
Paper Mfg	Process	Process - Conductivity Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Paper Mfg	Process	Process - Timers and Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Paper Mfg	Motors	Process - Timers and Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Paper Mfg	Process	Refrigeration - Floating Head Pressure	employee	New	35.35	15	\$24.78	20%	50%	\$0.06	3.89	3.90	RTF Workbook
Paper Mfg	Process	Refrigeration - System Optimization	employee	New	57.57	15	\$8.67	20%	50%	\$0.01	6.32	6.33	AEG Research
Paper Mfg	Motors	Pumping System - Equipment Upgrade	employee	New	3,334.92	10	\$483.39	9%	38%	\$0.02	273.22	272.97	7th Power Plan
Paper Mfg	Motors	Pumping System - System Optimization	employee	New	2,481.99	12	\$736.68	9%	38%	\$0.03	334.97	332.74	UNIDO Study on Industrial Energy Efficiency

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Paper Mfg	Motors	Pumping System - Variable Speed Drive	employee	New	2,474.09	10	\$766.43	9%	38%	\$0.03	308.52	306.33	UNIDO Study on Industrial Energy Efficiency
Paper Mfg	Motors	Fan System - Equipment Upgrade	employee	New	1,780.86	10	\$176.23	9%	38%	\$0.01	221.04	220.55	UNIDO Study on Industrial Energy Efficiency
Paper Mfg	Motors	Fan System - Flow Optimization	employee	New	2,100.45	10	\$291.59	9%	38%	\$0.02	260.85	260.13	UNIDO Study on Industrial Energy Efficiency
Paper Mfg	Motors	Fan System - Variable Speed Drive	employee	New	3,156.43	10	\$1,467.25	9%	38%	\$0.05	394.59	390.81	UNIDO Study on Industrial Energy Efficiency
Paper Mfg	Motors	Compressed Air - Equipment Upgrade	employee	New	3,233.27	10	\$235.27	17%	50%	\$0.01	307.49	307.49	7th Power Plan
Paper Mfg	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	New	0.00	15	\$0.00	16%	38%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Paper Mfg	Motors	Compressed Air - Refrigerated Cycling Dryers	employee	New	0.00	10	\$0.00	16%	30%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Paper Mfg	Motors	Compressed Air - System Controls	employee	New	720.36	10	\$168.22	9%	38%	\$0.03	59.14	58.99	UNIDO Study on Industrial Energy Efficiency
Paper Mfg	Motors	Compressed Air - Leak Management Program	employee	New	1,825.88	10	\$169.10	18%	75%	\$0.01	298.39	298.63	7th Power Plan
Paper Mfg	Motors	Compressed Air - Variable Speed Drive	employee	New	1,325.44	15	\$1,031.33	26%	45%	\$0.06	94.03	93.42	UNIDO Study on Industrial Energy Efficiency
Paper Mfg	Motors	Compressed Air - Low Pressure-Drop Filters	employee	New	44.66	10	\$15.90	17%	50%	\$0.04	4.29	4.27	Illinois TRM
Paper Mfg	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	New	270.85	10	\$51.57	17%	50%	\$0.02	25.93	25.87	UNIDO Study on Industrial Energy Efficiency
Paper Mfg	Motors	Compressed Air - Outside Air Intake	employee	New	0.00	20	\$0.00	17%	50%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Paper Mfg	Motors	Compressed Air - Receiver Capacity Addition	employee	New	266.44	15	\$141.81	17%	50%	\$0.04	33.04	32.85	UNIDO Study on Industrial Energy Efficiency
Paper Mfg	Motors	Material Handling - Variable Speed Drive	employee	New	7,098.99	10	\$2,504.28	25%	45%	\$0.04	621.62	616.84	7th Power Plan
Paper Mfg	Motors	Motors - Green Rewind (<100 HP)	employee	New	143.46	10	\$61.10	10%	50%	\$0.05	125.82	124.65	7th Power Plan
Paper Mfg	Motors	Motors - Green Rewind (100 HP+)	employee	New	80.45	10	\$21.69	6%	25%	\$0.03	33.44	33.20	7th Power Plan
Paper Mfg	Motors	Switch from Belt Drive to Direct Drive	employee	New	1,215.32	12	\$268.19	16%	25%	\$0.02	273.01	271.57	2015-mdu-irp-report---volume-iii.pdf
Paper Mfg	Motors	Motors - Synchronous Belts	employee	New	323.10	10	\$80.68	16%	36%	\$0.03	92.87	92.61	7th Power Plan

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Paper Mfg	Miscellaneous	Agriculture - Engine Block Timer	employee	New	899.23	3	\$11.09	0%	0%	\$0.00	0.00	0.00	Vermont TRM
Paper Mfg	Motors	Agriculture - Live Stock Waterer	employee	New	8,133.48	10	\$4,257.09	0%	0%	\$0.06	0.00	0.00	Ontario Power TRM
Paper Mfg	Process	Dairy - Milk Precoolers	employee	New	238.40	15	\$111.58	0%	0%	\$0.04	0.00	0.00	Ontario Power TRM
Paper Mfg	Process	Clean Room: Change Filter Strategy	employee	New	320.93	15	\$2.37	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Paper Mfg	Process	Clean Room: Chiller Optimize	employee	New	71.36	15	\$6.61	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Paper Mfg	Process	Clean Room: Clean Room HVAC	employee	New	43.14	15	\$7.98	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Paper Mfg	Process	Elec Chip Fab: Solidstate Chiller	employee	New	42.91	15	\$25.05	0%	0%	\$0.05	0.00	0.00	7th Power Plan
Paper Mfg	Process	Elec Chip Fab: Eliminate Exhaust	employee	New	39.94	15	\$8.52	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Paper Mfg	Process	Elec Chip Fab: Exhaust Injector	employee	New	79.46	15	\$41.08	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Paper Mfg	Process	Elec Chip Fab: Reduce Gas Pressure	employee	New	80.23	15	\$0.82	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Paper Mfg	Motors	Panel: Hydraulic Press	employee	New	10,692.46	10	\$2,502.78	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Paper Mfg	Motors	Wood: Replace Pneumatic Conveyor	employee	New	11,369.46	10	\$187.44	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Paper Mfg	Process	Metal: New Arc Furnace	employee	New	1,091.94	10	\$115.02	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Paper Mfg	Process	Paper: Premium Control Large Material	employee	New	207.40	10	\$104.76	15%	40%	\$0.06	103.69	103.71	7th Power Plan
Paper Mfg	Process	Paper: Efficient Pulp Screen	employee	New	167.00	10	\$34.51	15%	29%	\$0.02	47.56	47.56	7th Power Plan
Paper Mfg	Process	Kraft: Effluent Treatment System	employee	New	167.74	10	\$14.15	15%	25%	\$0.01	31.83	31.83	7th Power Plan
Paper Mfg	Motors	Kraft: Efficient Agitator	employee	New	19,532.05	10	\$1,867.65	15%	29%	\$0.01	1,113.63	1,112.13	7th Power Plan
Paper Mfg	Process	Mech Pulp: Premium Process	employee	New	1.86	5	\$0.24	15%	38%	\$0.03	0.22	0.22	7th Power Plan
Paper Mfg	Motors	Mech Pulp: Refiner Plate Improvement	employee	New	169.23	1	\$7.12	15%	52%	\$0.04	47.86	47.57	7th Power Plan
Paper Mfg	Cooling	Transformer - High Efficiency	employee	New	24.43	10	\$169.90	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Paper Mfg	Heating	Transformer - High Efficiency	employee	New	58.74	10	\$169.90	15%	15%	\$0.01	0.00	0.00	7th Power Plan

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Paper Mfg	Ventilation	Transformer - High Efficiency	employee	New	1.14	10	\$169.90	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Paper Mfg	Interior Lighting	Transformer - High Efficiency	employee	New	28.58	10	\$169.90	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Paper Mfg	Exterior Lighting	Transformer - High Efficiency	employee	New	5.80	10	\$169.90	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Paper Mfg	Motors	Transformer - High Efficiency	employee	New	1,188.70	10	\$169.90	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Paper Mfg	Process	Transformer - High Efficiency	employee	New	82.07	10	\$169.90	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Paper Mfg	Miscellaneous	Transformer - High Efficiency	employee	New	32.24	10	\$169.90	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Paper Mfg	Cooling	Strategic Energy Management	employee	New	69.73	3	\$1,043.50	0%	24%	\$0.07	0.11	0.12	AEG Research
Paper Mfg	Heating	Strategic Energy Management	employee	New	168.94	3	\$1,043.50	0%	24%	\$0.07	0.29	0.29	AEG Research
Paper Mfg	Ventilation	Strategic Energy Management	employee	New	3.28	3	\$1,043.50	0%	24%	\$0.07	0.04	0.04	AEG Research
Paper Mfg	Interior Lighting	Strategic Energy Management	employee	New	82.58	3	\$1,043.50	0%	24%	\$0.07	0.69	1.01	AEG Research
Paper Mfg	Exterior Lighting	Strategic Energy Management	employee	New	16.77	3	\$1,043.50	0%	24%	\$0.07	0.15	0.22	AEG Research
Paper Mfg	Motors	Strategic Energy Management	employee	New	3,434.03	3	\$1,043.50	0%	24%	\$0.07	29.45	29.76	AEG Research
Paper Mfg	Process	Strategic Energy Management	employee	New	237.10	3	\$1,043.50	0%	24%	\$0.07	2.01	2.03	AEG Research
Paper Mfg	Miscellaneous	Strategic Energy Management	employee	New	93.13	3	\$1,043.50	0%	24%	\$0.07	0.98	0.66	AEG Research
Paper Mfg	Interior Lighting	Commissioning	employee	New	95.18	3	\$2,141.71	10%	35%	\$0.14	0.83	1.21	AEG Research
Paper Mfg	Exterior Lighting	Commissioning	employee	New	19.33	3	\$2,141.71	10%	35%	\$0.14	0.18	0.27	AEG Research
Paper Mfg	Motors	Commissioning	employee	New	3,958.24	3	\$2,141.71	10%	35%	\$0.14	35.40	35.74	AEG Research
Paper Mfg	Process	Commissioning	employee	New	273.29	3	\$2,141.71	10%	35%	\$0.14	2.42	2.44	AEG Research
Paper Mfg	Miscellaneous	Commissioning	employee	New	107.35	3	\$2,141.71	10%	35%	\$0.14	1.17	0.79	AEG Research
Paper Mfg	Interior Lighting	Retrocommissioning	employee	New	95.28	3	\$1,359.60	0%	0%	\$0.09	0.00	0.00	AEG Research

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Paper Mfg	Exterior Lighting	Retrocommissioning	employee	New	19.35	3	\$1,359.60	0%	0%	\$0.09	0.00	0.00	AEG Research
Paper Mfg	Motors	Retrocommissioning	employee	New	3,962.34	3	\$1,359.60	0%	0%	\$0.09	0.00	0.00	AEG Research
Paper Mfg	Process	Retrocommissioning	employee	New	273.57	3	\$1,359.60	0%	0%	\$0.09	0.00	0.00	AEG Research
Paper Mfg	Miscellaneous	Retrocommissioning	employee	New	107.46	3	\$1,359.60	0%	0%	\$0.09	0.00	0.00	AEG Research
Paper Mfg	Motors	Municipal Sewage Treatment	employee	New	439.53	12	\$243.01	0%	0%	\$0.05	0.00	0.00	7th Power Plan
Paper Mfg	Motors	Municipal Water Supply Treatment	employee	New	0.00	12	\$0.00	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Petroleum Refining	Cooling	Insulation - Ceiling	sqft	Existing	0.18	45	\$1.28	15%	25%	\$0.11	16.26	17.85	Building Energy Simulation Tool
Petroleum Refining	Heating	Insulation - Ceiling	sqft	Existing	0.40	45	\$1.28	15%	25%	\$0.11	40.56	42.13	Building Energy Simulation Tool
Petroleum Refining	Ventilation	Insulation - Ceiling	sqft	Existing	0.01	45	\$1.28	15%	25%	\$0.11	6.23	7.50	Building Energy Simulation Tool
Petroleum Refining	Cooling	Insulation - Ducting	sqft	Existing	0.07	20	\$0.84	15%	25%	\$0.62	6.28	6.93	Building Energy Simulation Tool
Petroleum Refining	Heating	Insulation - Ducting	sqft	Existing	0.02	20	\$0.84	15%	25%	\$0.62	1.70	1.77	Building Energy Simulation Tool
Petroleum Refining	Ventilation	Insulation - Ducting	sqft	Existing	0.00	20	\$0.84	15%	25%	\$0.62	0.26	0.32	Building Energy Simulation Tool
Petroleum Refining	Cooling	Insulation - Wall Cavity	sqft	Existing	0.00	45	\$0.15	45%	50%	\$0.01	0.14	0.15	Building Energy Simulation Tool
Petroleum Refining	Heating	Insulation - Wall Cavity	sqft	Existing	0.58	45	\$0.15	45%	50%	\$0.01	29.61	29.68	Building Energy Simulation Tool
Petroleum Refining	Ventilation	Insulation - Wall Cavity	sqft	Existing	0.02	45	\$0.15	45%	50%	\$0.01	4.24	5.05	Building Energy Simulation Tool
Petroleum Refining	Cooling	HVAC - Duct Repair and Sealing	sqft	Existing	0.02	18	\$0.00	15%	25%	\$0.00	2.27	2.40	Building Energy Simulation Tool
Petroleum Refining	Heating	HVAC - Duct Repair and Sealing	sqft	Existing	0.04	18	\$0.00	15%	25%	\$0.00	4.17	4.18	Building Energy Simulation Tool
Petroleum Refining	Ventilation	HVAC - Duct Repair and Sealing	sqft	Existing	0.00	18	\$0.00	15%	25%	\$0.00	0.60	0.71	Building Energy Simulation Tool
Petroleum Refining	Cooling	Chiller - Chilled Water Reset	sqft	Existing	0.07	10	\$0.01	15%	45%	\$0.02	5.25	5.71	AEG-BEST
Petroleum Refining	Cooling	Chiller - Chilled Water Variable-Flow System	sqft	Existing	0.36	15	\$0.50	15%	60%	\$0.11	41.63	46.60	AEG-BEST

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Petroleum Refining	Cooling	Chiller - Variable Speed Fans	sqft	Existing	0.14	15	\$0.03	15%	75%	\$0.02	21.18	23.08	New Jersey TRM
Petroleum Refining	Cooling	HVAC - Economizer	sqft	Existing	7.17	10	\$0.25	18%	30%	\$0.00	23.60	25.33	AEG-BEST
Petroleum Refining	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.25	15%	35%	\$7.50	2.43	3.14	7th Power Plan
Petroleum Refining	Cooling	Destratification Fans (HVLS)	sqft	Existing	0.24	15	\$0.63	15%	50%	\$0.04	84.77	92.17	AEG Research
Petroleum Refining	Heating	Destratification Fans (HVLS)	sqft	Existing	1.05	15	\$0.63	15%	50%	\$0.04	406.15	409.01	AEG Research
Petroleum Refining	Cooling	RTU - Maintenance	sqft	Existing	0.12	3	\$0.07	15%	75%	\$0.15	47.97	54.17	AEG Research
Petroleum Refining	Cooling	Thermostat - WiFi/Interactive	sqft	Existing	0.36	5	\$0.66	5%	15%	\$0.10	32.92	35.84	7th Power Plan
Petroleum Refining	Heating	Thermostat - WiFi/Interactive	sqft	Existing	0.81	5	\$0.66	5%	15%	\$0.10	82.08	84.57	7th Power Plan
Petroleum Refining	Ventilation	Thermostat - WiFi/Interactive	sqft	Existing	0.03	5	\$0.66	5%	15%	\$0.10	12.61	15.06	7th Power Plan
Petroleum Refining	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	8.02	15	\$0.35	7%	33%	\$0.00	177.82	224.00	7th Power Plan
Petroleum Refining	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	10.96	15	\$0.58	7%	33%	\$0.00	235.90	306.41	7th Power Plan
Petroleum Refining	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	Existing	0.02	15	\$0.00	1%	2%	\$0.01	0.78	1.28	7th Power Plan
Petroleum Refining	Interior Lighting	Interior Lighting - Timeclocks and Timers	sqft	Existing	0.00	8	\$0.00	7%	7%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Petroleum Refining	Interior Lighting	Interior Lighting - Skylights	sqft	Existing	0.00	15	\$1.01	15%	23%	\$0.00	0.00	0.00	AEG Research
Petroleum Refining	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	sqft	Existing	0.04	16	\$1.81	5%	40%	\$2.85	28.22	45.84	7th Power Plan
Petroleum Refining	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	Existing	0.03	11	\$0.00	15%	50%	\$0.01	25.84	41.15	Illinois TRM
Petroleum Refining	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	sqft	Existing	0.05	8	\$0.03	15%	25%	\$0.07	35.43	54.63	7th Power Plan
Petroleum Refining	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	Existing	0.03	8	\$0.02	33%	60%	\$0.07	49.19	78.08	Pacific Gas and Electric Research
Petroleum Refining	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	Existing	0.03	7	\$1.19	15%	30%	\$3.70	30.67	51.60	AEG Research

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Petroleum Refining	Process	Process - Conductivity Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Petroleum Refining	Process	Process - Timers and Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Petroleum Refining	Motors	Process - Timers and Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Petroleum Refining	Process	Refrigeration - Floating Head Pressure	employee	Existing	601.15	15	\$588.43	20%	50%	\$0.08	164.43	165.35	RTF Workbook
Petroleum Refining	Process	Refrigeration - System Optimization	employee	Existing	969.46	15	\$414.36	20%	50%	\$0.04	265.69	265.69	AEG Research
Petroleum Refining	Motors	Pumping System - Equipment Upgrade	employee	Existing	29,220.15	10	\$4,290.71	9%	38%	\$0.02	7,607.06	7,788.89	7th Power Plan
Petroleum Refining	Motors	Pumping System - System Optimization	employee	Existing	20,958.89	12	\$6,539.04	9%	38%	\$0.03	5,247.65	5,494.92	UNIDO Study on Industrial Energy Efficiency
Petroleum Refining	Motors	Pumping System - Variable Speed Drive	employee	Existing	20,552.73	10	\$6,803.05	9%	38%	\$0.03	5,106.35	5,429.79	UNIDO Study on Industrial Energy Efficiency
Petroleum Refining	Motors	Fan System - Equipment Upgrade	employee	Existing	2,680.57	10	\$265.28	9%	38%	\$0.01	682.81	688.74	UNIDO Study on Industrial Energy Efficiency
Petroleum Refining	Motors	Fan System - Flow Optimization	employee	Existing	3,025.38	10	\$438.92	9%	38%	\$0.02	761.42	788.78	UNIDO Study on Industrial Energy Efficiency
Petroleum Refining	Motors	Fan System - Variable Speed Drive	employee	Existing	4,373.81	10	\$2,208.61	9%	38%	\$0.05	1,075.19	1,167.45	UNIDO Study on Industrial Energy Efficiency
Petroleum Refining	Motors	Compressed Air - Equipment Upgrade	employee	Existing	13,858.08	10	\$1,008.39	17%	50%	\$0.01	4,244.78	4,244.78	7th Power Plan
Petroleum Refining	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	Existing	0.00	15	\$0.00	16%	38%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Petroleum Refining	Motors	Compressed Air - Refrigerated Cycling Dryers	employee	Existing	0.00	10	\$0.00	16%	30%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Petroleum Refining	Motors	Compressed Air - System Controls	employee	Existing	2,950.82	10	\$721.00	9%	38%	\$0.03	759.88	801.12	UNIDO Study on Industrial Energy Efficiency
Petroleum Refining	Motors	Compressed Air - Leak Management Program	employee	Existing	7,780.27	10	\$724.78	18%	75%	\$0.01	4,066.35	4,119.43	7th Power Plan
Petroleum Refining	Motors	Compressed Air - Variable Speed Drive	employee	Existing	5,227.45	15	\$4,420.39	26%	45%	\$0.06	878.17	975.90	UNIDO Study on Industrial Energy Efficiency
Petroleum Refining	Motors	Compressed Air - Low Pressure-Drop Filters	employee	Existing	175.69	10	\$68.13	17%	50%	\$0.04	51.82	57.14	Illinois TRM
Petroleum Refining	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	Existing	1,114.09	10	\$221.02	17%	50%	\$0.02	335.53	351.59	UNIDO Study on Industrial Energy Efficiency

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Petroleum Refining	Motors	Compressed Air - Outside Air Intake	employee	Existing	0.00	20	\$0.00	17%	50%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Petroleum Refining	Motors	Compressed Air - Receiver Capacity Addition	employee	Existing	1,053.92	15	\$607.80	17%	50%	\$0.04	310.81	342.82	UNIDO Study on Industrial Energy Efficiency
Petroleum Refining	Motors	Material Handling - Variable Speed Drive	employee	Existing	5,917.47	10	\$2,265.71	25%	45%	\$0.04	1,023.96	1,105.11	7th Power Plan
Petroleum Refining	Motors	Motors - Green Rewind (<100 HP)	employee	Existing	422.09	10	\$194.97	10%	50%	\$0.05	728.96	789.80	7th Power Plan
Petroleum Refining	Motors	Motors - Green Rewind (100 HP+)	employee	Existing	240.37	10	\$69.20	6%	25%	\$0.03	199.13	211.62	7th Power Plan
Petroleum Refining	Motors	Switch from Belt Drive to Direct Drive	employee	Existing	3,718.19	12	\$855.82	16%	25%	\$0.02	1,557.51	1,618.02	2015-mdu-irp-report---volume-iii.pdf
Petroleum Refining	Motors	Motors - Synchronous Belts	employee	Existing	983.18	10	\$257.46	16%	36%	\$0.03	885.46	935.50	7th Power Plan
Petroleum Refining	Miscellaneous	Agriculture - Engine Block Timer	employee	Existing	2,103.86	3	\$25.95	0%	0%	\$0.00	0.00	0.00	Vermont TRM
Petroleum Refining	Motors	Agriculture - Live Stock Waterer	employee	Existing	66,432.21	10	\$37,787.29	0%	0%	\$0.06	0.00	0.00	Ontario Power TRM
Petroleum Refining	Process	Dairy - Milk Precoolers	employee	Existing	4,007.70	15	\$1,872.43	0%	0%	\$0.04	0.00	0.00	Ontario Power TRM
Petroleum Refining	Process	Clean Room: Change Filter Strategy	employee	Existing	130.05	15	\$0.96	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Petroleum Refining	Process	Clean Room: Chiller Optimize	employee	Existing	1,197.51	15	\$110.87	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Petroleum Refining	Process	Clean Room: Clean Room HVAC	employee	Existing	727.09	15	\$133.84	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Petroleum Refining	Process	Elec Chip Fab: Solidstate Chiller	employee	Existing	721.39	15	\$420.38	0%	0%	\$0.05	0.00	0.00	7th Power Plan
Petroleum Refining	Process	Elec Chip Fab: Eliminate Exhaust	employee	Existing	16.26	15	\$3.45	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Petroleum Refining	Process	Elec Chip Fab: Exhaust Injector	employee	Existing	32.26	15	\$16.65	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Petroleum Refining	Process	Elec Chip Fab: Reduce Gas Pressure	employee	Existing	32.51	15	\$0.33	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Petroleum Refining	Motors	Panel: Hydraulic Press	employee	Existing	9,252.05	10	\$2,264.35	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Petroleum Refining	Motors	Wood: Replace Pneumatic Conveyor	employee	Existing	10,286.32	10	\$169.58	0%	0%	\$0.00	0.00	0.00	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Petroleum Refining	Process	Metal: New Arc Furnace	employee	Existing	5,962.99	10	\$625.95	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Petroleum Refining	Process	Paper: Premium Control Large Material	employee	Existing	1,196.47	10	\$603.28	0%	0%	\$0.06	0.00	0.00	7th Power Plan
Petroleum Refining	Process	Paper: Efficient Pulp Screen	employee	Existing	965.92	10	\$198.72	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Petroleum Refining	Process	Kraft: Effluent Treatment System	employee	Existing	965.92	10	\$81.47	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Petroleum Refining	Motors	Kraft: Efficient Agitator	employee	Existing	17,464.34	10	\$1,689.72	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Petroleum Refining	Process	Mech Pulp: Premium Process	employee	Existing	10.81	5	\$1.39	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Petroleum Refining	Motors	Mech Pulp: Refiner Plate Improvement	employee	Existing	141.03	1	\$6.45	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Petroleum Refining	Cooling	Transformer - High Efficiency	employee	Existing	219.99	10	\$611.90	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Petroleum Refining	Heating	Transformer - High Efficiency	employee	Existing	496.36	10	\$611.90	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Petroleum Refining	Ventilation	Transformer - High Efficiency	employee	Existing	15.32	10	\$611.90	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Petroleum Refining	Interior Lighting	Transformer - High Efficiency	employee	Existing	65.67	10	\$611.90	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Petroleum Refining	Exterior Lighting	Transformer - High Efficiency	employee	Existing	14.18	10	\$611.90	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Petroleum Refining	Motors	Transformer - High Efficiency	employee	Existing	3,481.04	10	\$611.90	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Petroleum Refining	Process	Transformer - High Efficiency	employee	Existing	476.82	10	\$611.90	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Petroleum Refining	Miscellaneous	Transformer - High Efficiency	employee	Existing	79.63	10	\$611.90	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Petroleum Refining	Cooling	Strategic Energy Management	employee	Existing	606.81	3	\$3,758.09	0%	5%	\$0.07	4.53	5.00	AEG Research
Petroleum Refining	Heating	Strategic Energy Management	employee	Existing	1,415.61	3	\$3,758.09	0%	5%	\$0.07	11.79	12.30	AEG Research
Petroleum Refining	Ventilation	Strategic Energy Management	employee	Existing	43.75	3	\$3,758.09	0%	5%	\$0.07	1.81	2.19	AEG Research
Petroleum Refining	Interior Lighting	Strategic Energy Management	employee	Existing	188.08	3	\$3,758.09	0%	5%	\$0.07	6.34	9.13	AEG Research

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Petroleum Refining	Exterior Lighting	Strategic Energy Management	employee	Existing	40.63	3	\$3,758.09	0%	5%	\$0.07	1.40	2.03	AEG Research
Petroleum Refining	Motors	Strategic Energy Management	employee	Existing	9,959.32	3	\$3,758.09	0%	5%	\$0.07	402.74	434.70	AEG Research
Petroleum Refining	Process	Strategic Energy Management	employee	Existing	1,363.74	3	\$3,758.09	0%	5%	\$0.07	57.35	58.21	AEG Research
Petroleum Refining	Miscellaneous	Strategic Energy Management	employee	Existing	227.52	3	\$3,758.09	0%	5%	\$0.07	12.16	9.53	AEG Research
Petroleum Refining	Interior Lighting	Commissioning	employee	Existing	216.78	3	\$7,031.34	0%	0%	\$0.14	0.00	0.00	AEG Research
Petroleum Refining	Exterior Lighting	Commissioning	employee	Existing	46.83	3	\$7,031.34	0%	0%	\$0.14	0.00	0.00	AEG Research
Petroleum Refining	Motors	Commissioning	employee	Existing	11,477.45	3	\$7,031.34	0%	0%	\$0.14	0.00	0.00	AEG Research
Petroleum Refining	Process	Commissioning	employee	Existing	1,571.55	3	\$7,031.34	0%	0%	\$0.14	0.00	0.00	AEG Research
Petroleum Refining	Miscellaneous	Commissioning	employee	Existing	262.16	3	\$7,031.34	0%	0%	\$0.14	0.00	0.00	AEG Research
Petroleum Refining	Interior Lighting	Retrocommissioning	employee	Existing	218.89	3	\$4,463.63	5%	39%	\$0.09	50.59	72.14	AEG Research
Petroleum Refining	Exterior Lighting	Retrocommissioning	employee	Existing	47.27	3	\$4,463.63	5%	39%	\$0.09	11.20	16.05	AEG Research
Petroleum Refining	Motors	Retrocommissioning	employee	Existing	11,603.48	3	\$4,463.63	5%	39%	\$0.09	3,215.01	3,437.36	AEG Research
Petroleum Refining	Process	Retrocommissioning	employee	Existing	1,589.39	3	\$4,463.63	5%	39%	\$0.09	457.84	460.38	AEG Research
Petroleum Refining	Miscellaneous	Retrocommissioning	employee	Existing	265.43	3	\$4,463.63	5%	39%	\$0.09	97.10	75.46	AEG Research
Petroleum Refining	Motors	Municipal Sewage Treatment	employee	Existing	3,589.98	12	\$2,157.02	0%	0%	\$0.05	0.00	0.00	7th Power Plan
Petroleum Refining	Motors	Municipal Water Supply Treatment	employee	Existing	0.00	12	\$0.00	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Petroleum Refining	Cooling	Insulation - Ceiling	sqft	New	0.17	45	\$1.28	15%	25%	\$0.12	7.25	7.30	Building Energy Simulation Tool
Petroleum Refining	Heating	Insulation - Ceiling	sqft	New	0.40	45	\$1.28	15%	25%	\$0.12	17.87	17.82	Building Energy Simulation Tool
Petroleum Refining	Ventilation	Insulation - Ceiling	sqft	New	0.01	45	\$1.28	15%	25%	\$0.12	2.21	2.42	Building Energy Simulation Tool

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Petroleum Refining	Cooling	Insulation - Ducting	sqft	New	0.07	20	\$0.84	15%	25%	\$0.66	2.82	2.84	Building Energy Simulation Tool
Petroleum Refining	Heating	Insulation - Ducting	sqft	New	0.02	20	\$0.84	15%	25%	\$0.66	0.75	0.75	Building Energy Simulation Tool
Petroleum Refining	Ventilation	Insulation - Ducting	sqft	New	0.00	20	\$0.84	15%	25%	\$0.66	0.09	0.10	Building Energy Simulation Tool
Petroleum Refining	Cooling	Insulation - Wall Cavity	sqft	New	0.00	45	\$0.15	45%	50%	\$0.01	0.06	0.06	Building Energy Simulation Tool
Petroleum Refining	Heating	Insulation - Wall Cavity	sqft	New	0.54	45	\$0.15	45%	50%	\$0.01	12.11	12.11	Building Energy Simulation Tool
Petroleum Refining	Ventilation	Insulation - Wall Cavity	sqft	New	0.01	45	\$0.15	45%	50%	\$0.01	1.48	1.62	Building Energy Simulation Tool
Petroleum Refining	Cooling	HVAC - Duct Repair and Sealing	sqft	New	0.02	18	\$0.00	15%	25%	\$0.00	0.91	0.92	Building Energy Simulation Tool
Petroleum Refining	Heating	HVAC - Duct Repair and Sealing	sqft	New	0.04	18	\$0.00	15%	25%	\$0.00	1.68	1.68	Building Energy Simulation Tool
Petroleum Refining	Ventilation	HVAC - Duct Repair and Sealing	sqft	New	0.00	18	\$0.00	15%	25%	\$0.00	0.20	0.22	Building Energy Simulation Tool
Petroleum Refining	Cooling	Chiller - Chilled Water Reset	sqft	New	0.05	10	\$0.01	15%	45%	\$0.02	0.67	0.69	AEG-BEST
Petroleum Refining	Cooling	Chiller - Chilled Water Variable-Flow System	sqft	New	0.30	15	\$0.50	15%	60%	\$0.13	7.11	7.28	AEG-BEST
Petroleum Refining	Cooling	Chiller - Variable Speed Fans	sqft	New	0.11	15	\$0.03	15%	75%	\$0.02	3.48	3.58	New Jersey TRM
Petroleum Refining	Cooling	HVAC - Economizer	sqft	New	6.31	10	\$0.25	18%	30%	\$0.00	3.18	3.29	AEG-BEST
Petroleum Refining	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.25	15%	35%	\$8.97	0.38	0.46	7th Power Plan
Petroleum Refining	Cooling	Destratification Fans (HVLS)	sqft	New	0.22	15	\$0.63	15%	50%	\$0.04	15.57	15.98	AEG Research
Petroleum Refining	Heating	Destratification Fans (HVLS)	sqft	New	0.99	15	\$0.63	15%	50%	\$0.04	74.51	74.66	AEG Research
Petroleum Refining	Cooling	RTU - Maintenance	sqft	New	0.12	3	\$0.07	15%	75%	\$0.16	1.06	1.13	AEG Research
Petroleum Refining	Cooling	Thermostat - WiFi/Interactive	sqft	New	0.34	5	\$0.66	5%	15%	\$0.10	1.89	1.94	7th Power Plan
Petroleum Refining	Heating	Thermostat - WiFi/Interactive	sqft	New	0.79	5	\$0.66	5%	15%	\$0.10	4.66	4.65	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Petroleum Refining	Ventilation	Thermostat - WiFi/Interactive	sqft	New	0.02	5	\$0.66	5%	15%	\$0.10	0.57	0.70	7th Power Plan
Petroleum Refining	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	6.40	15	\$0.35	22%	41%	\$0.00	105.18	123.06	7th Power Plan
Petroleum Refining	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	8.70	15	\$0.58	22%	41%	\$0.00	142.49	167.62	7th Power Plan
Petroleum Refining	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	New	0.02	15	\$0.00	1%	2%	\$0.01	0.11	0.15	7th Power Plan
Petroleum Refining	Interior Lighting	Interior Lighting - Timeclocks and Timers	sqft	New	0.00	8	\$0.00	7%	7%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Petroleum Refining	Interior Lighting	Interior Lighting - Skylights	sqft	New	0.00	15	\$1.01	18%	24%	\$0.00	0.00	0.00	AEG Research
Petroleum Refining	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	sqft	New	0.03	16	\$1.81	5%	40%	\$2.85	5.57	7.17	7th Power Plan
Petroleum Refining	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	New	0.03	11	\$0.00	15%	50%	\$0.01	4.00	5.32	Illinois TRM
Petroleum Refining	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	sqft	New	0.04	8	\$0.03	15%	25%	\$0.07	3.99	5.57	7th Power Plan
Petroleum Refining	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	New	0.02	8	\$0.02	44%	60%	\$0.07	3.41	4.74	Pacific Gas and Electric Research
Petroleum Refining	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	New	0.02	7	\$1.19	15%	30%	\$3.69	3.46	4.85	AEG Research
Petroleum Refining	Process	Process - Conductivity Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Petroleum Refining	Process	Process - Timers and Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Petroleum Refining	Motors	Process - Timers and Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Petroleum Refining	Process	Refrigeration - Floating Head Pressure	employee	New	604.29	15	\$415.85	20%	50%	\$0.06	32.15	32.12	RTF Workbook
Petroleum Refining	Process	Refrigeration - System Optimization	employee	New	969.46	15	\$145.42	20%	50%	\$0.01	51.53	51.53	AEG Research
Petroleum Refining	Motors	Pumping System - Equipment Upgrade	employee	New	29,874.33	10	\$4,290.71	9%	38%	\$0.02	1,184.06	1,179.21	7th Power Plan
Petroleum Refining	Motors	Pumping System - System Optimization	employee	New	22,072.25	12	\$6,539.04	9%	38%	\$0.03	1,445.35	1,428.99	UNIDO Study on Industrial Energy Efficiency
Petroleum Refining	Motors	Pumping System - Variable Speed Drive	employee	New	21,888.26	10	\$6,803.05	9%	38%	\$0.03	1,325.63	1,308.27	UNIDO Study on Industrial Energy Efficiency

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Petroleum Refining	Motors	Fan System - Equipment Upgrade	employee	New	2,696.13	10	\$265.28	9%	38%	\$0.01	162.00	161.24	UNIDO Study on Industrial Energy Efficiency
Petroleum Refining	Motors	Fan System - Flow Optimization	employee	New	3,154.61	10	\$438.92	9%	38%	\$0.02	190.35	188.55	UNIDO Study on Industrial Energy Efficiency
Petroleum Refining	Motors	Fan System - Variable Speed Drive	employee	New	4,731.41	10	\$2,208.61	9%	38%	\$0.05	287.38	282.78	UNIDO Study on Industrial Energy Efficiency
Petroleum Refining	Motors	Compressed Air - Equipment Upgrade	employee	New	13,858.08	10	\$1,008.39	17%	50%	\$0.01	637.98	637.98	7th Power Plan
Petroleum Refining	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	New	0.00	15	\$0.00	16%	38%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Petroleum Refining	Motors	Compressed Air - Refrigerated Cycling Dryers	employee	New	0.00	10	\$0.00	16%	30%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Petroleum Refining	Motors	Compressed Air - System Controls	employee	New	3,094.05	10	\$721.00	9%	38%	\$0.03	123.24	122.23	UNIDO Study on Industrial Energy Efficiency
Petroleum Refining	Motors	Compressed Air - Leak Management Program	employee	New	7,880.61	10	\$724.78	18%	75%	\$0.01	623.25	621.98	7th Power Plan
Petroleum Refining	Motors	Compressed Air - Variable Speed Drive	employee	New	5,668.01	15	\$4,420.39	26%	45%	\$0.06	195.39	193.08	UNIDO Study on Industrial Energy Efficiency
Petroleum Refining	Motors	Compressed Air - Low Pressure-Drop Filters	employee	New	189.88	10	\$68.13	17%	50%	\$0.04	8.87	8.78	Illinois TRM
Petroleum Refining	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	New	1,163.48	10	\$221.02	17%	50%	\$0.02	54.03	53.60	UNIDO Study on Industrial Energy Efficiency
Petroleum Refining	Motors	Compressed Air - Outside Air Intake	employee	New	0.00	20	\$0.00	17%	50%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Petroleum Refining	Motors	Compressed Air - Receiver Capacity Addition	employee	New	1,137.35	15	\$607.80	17%	50%	\$0.04	68.55	67.78	UNIDO Study on Industrial Energy Efficiency
Petroleum Refining	Motors	Material Handling - Variable Speed Drive	employee	New	6,370.53	10	\$2,265.71	25%	45%	\$0.04	271.31	267.19	7th Power Plan
Petroleum Refining	Motors	Motors - Green Rewind (<100 HP)	employee	New	455.89	10	\$194.97	10%	50%	\$0.05	194.26	191.21	7th Power Plan
Petroleum Refining	Motors	Motors - Green Rewind (100 HP+)	employee	New	255.89	10	\$69.20	6%	25%	\$0.03	51.65	50.98	7th Power Plan
Petroleum Refining	Motors	Switch from Belt Drive to Direct Drive	employee	New	3,886.46	12	\$855.82	16%	25%	\$0.02	423.57	419.41	2015-mdu-irp-report---volume-iii.pdf
Petroleum Refining	Motors	Motors - Synchronous Belts	employee	New	1,032.98	10	\$257.46	16%	36%	\$0.03	144.06	142.83	7th Power Plan
Petroleum Refining	Miscellaneous	Agriculture - Engine Block Timer	employee	New	2,103.86	3	\$25.95	0%	0%	\$0.00	0.00	0.00	Vermont TRM

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Petroleum Refining	Motors	Agriculture - Live Stock Waterer	employee	New	72,030.95	10	\$37,787.29	0%	0%	\$0.06	0.00	0.00	Ontario Power TRM
Petroleum Refining	Process	Dairy - Milk Precoolers	employee	New	4,028.59	15	\$1,872.43	0%	0%	\$0.04	0.00	0.00	Ontario Power TRM
Petroleum Refining	Process	Clean Room: Change Filter Strategy	employee	New	130.05	15	\$0.96	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Petroleum Refining	Process	Clean Room: Chiller Optimize	employee	New	1,197.51	15	\$110.87	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Petroleum Refining	Process	Clean Room: Clean Room HVAC	employee	New	725.15	15	\$133.84	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Petroleum Refining	Process	Elec Chip Fab: Solidstate Chiller	employee	New	725.15	15	\$420.38	0%	0%	\$0.05	0.00	0.00	7th Power Plan
Petroleum Refining	Process	Elec Chip Fab: Eliminate Exhaust	employee	New	16.21	15	\$3.45	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Petroleum Refining	Process	Elec Chip Fab: Exhaust Injector	employee	New	32.43	15	\$16.65	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Petroleum Refining	Process	Elec Chip Fab: Reduce Gas Pressure	employee	New	32.51	15	\$0.33	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Petroleum Refining	Motors	Panel: Hydraulic Press	employee	New	9,701.13	10	\$2,264.35	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Petroleum Refining	Motors	Wood: Replace Pneumatic Conveyor	employee	New	10,286.32	10	\$169.58	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Petroleum Refining	Process	Metal: New Arc Furnace	employee	New	5,962.99	10	\$625.95	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Petroleum Refining	Process	Paper: Premium Control Large Material	employee	New	1,202.71	10	\$603.28	0%	0%	\$0.06	0.00	0.00	7th Power Plan
Petroleum Refining	Process	Paper: Efficient Pulp Screen	employee	New	963.33	10	\$198.72	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Petroleum Refining	Process	Kraft: Effluent Treatment System	employee	New	965.92	10	\$81.47	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Petroleum Refining	Motors	Kraft: Efficient Agitator	employee	New	17,649.27	10	\$1,689.72	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Petroleum Refining	Process	Mech Pulp: Premium Process	employee	New	10.78	5	\$1.39	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Petroleum Refining	Motors	Mech Pulp: Refiner Plate Improvement	employee	New	151.84	1	\$6.45	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Petroleum Refining	Cooling	Transformer - High Efficiency	employee	New	200.20	10	\$606.30	15%	15%	\$0.01	0.00	0.00	7th Power Plan

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Petroleum Refining	Heating	Transformer - High Efficiency	employee	New	482.52	10	\$606.30	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Petroleum Refining	Ventilation	Transformer - High Efficiency	employee	New	9.39	10	\$606.30	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Petroleum Refining	Interior Lighting	Transformer - High Efficiency	employee	New	51.98	10	\$606.30	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Petroleum Refining	Exterior Lighting	Transformer - High Efficiency	employee	New	11.32	10	\$606.30	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Petroleum Refining	Motors	Transformer - High Efficiency	employee	New	3,783.41	10	\$606.30	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Petroleum Refining	Process	Transformer - High Efficiency	employee	New	480.86	10	\$606.30	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Petroleum Refining	Miscellaneous	Transformer - High Efficiency	employee	New	75.42	10	\$606.30	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Petroleum Refining	Cooling	Strategic Energy Management	employee	New	571.43	3	\$3,723.73	0%	5%	\$0.07	0.09	0.10	AEG Research
Petroleum Refining	Heating	Strategic Energy Management	employee	New	1,387.63	3	\$3,723.73	0%	5%	\$0.07	0.24	0.24	AEG Research
Petroleum Refining	Ventilation	Strategic Energy Management	employee	New	27.02	3	\$3,723.73	0%	5%	\$0.07	0.03	0.04	AEG Research
Petroleum Refining	Interior Lighting	Strategic Energy Management	employee	New	150.15	3	\$3,723.73	0%	5%	\$0.07	0.13	0.19	AEG Research
Petroleum Refining	Exterior Lighting	Strategic Energy Management	employee	New	32.71	3	\$3,723.73	0%	5%	\$0.07	0.03	0.04	AEG Research
Petroleum Refining	Motors	Strategic Energy Management	employee	New	10,929.83	3	\$3,723.73	0%	5%	\$0.07	9.47	9.52	AEG Research
Petroleum Refining	Process	Strategic Energy Management	employee	New	1,389.14	3	\$3,723.73	0%	5%	\$0.07	1.19	1.19	AEG Research
Petroleum Refining	Miscellaneous	Strategic Energy Management	employee	New	217.89	3	\$3,723.73	0%	5%	\$0.07	0.23	0.16	AEG Research
Petroleum Refining	Interior Lighting	Commissioning	employee	New	173.22	3	\$7,044.66	5%	39%	\$0.14	0.99	1.50	AEG Research
Petroleum Refining	Exterior Lighting	Commissioning	employee	New	37.73	3	\$7,044.66	5%	39%	\$0.14	0.23	0.35	AEG Research
Petroleum Refining	Motors	Commissioning	employee	New	12,608.64	3	\$7,044.66	5%	39%	\$0.14	74.32	74.71	AEG Research
Petroleum Refining	Process	Commissioning	employee	New	1,602.51	3	\$7,044.66	5%	39%	\$0.14	9.31	9.31	AEG Research

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Petroleum Refining	Miscellaneous	Commissioning	employee	New	251.36	3	\$7,044.66	5%	39%	\$0.14	1.81	1.22	AEG Research
Petroleum Refining	Interior Lighting	Retrocommissioning	employee	New	173.25	3	\$4,472.09	0%	0%	\$0.09	0.00	0.00	AEG Research
Petroleum Refining	Exterior Lighting	Retrocommissioning	employee	New	37.74	3	\$4,472.09	0%	0%	\$0.09	0.00	0.00	AEG Research
Petroleum Refining	Motors	Retrocommissioning	employee	New	12,611.36	3	\$4,472.09	0%	0%	\$0.09	0.00	0.00	AEG Research
Petroleum Refining	Process	Retrocommissioning	employee	New	1,602.86	3	\$4,472.09	0%	0%	\$0.09	0.00	0.00	AEG Research
Petroleum Refining	Miscellaneous	Retrocommissioning	employee	New	251.41	3	\$4,472.09	0%	0%	\$0.09	0.00	0.00	AEG Research
Petroleum Refining	Motors	Municipal Sewage Treatment	employee	New	3,892.53	12	\$2,157.02	0%	0%	\$0.05	0.00	0.00	7th Power Plan
Petroleum Refining	Motors	Municipal Water Supply Treatment	employee	New	0.00	12	\$0.00	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Cooling	Insulation - Ceiling	sqft	Existing	0.18	45	\$1.28	15%	25%	\$0.11	22.30	24.49	Building Energy Simulation Tool
Stone Clay Glass Products	Heating	Insulation - Ceiling	sqft	Existing	0.40	45	\$1.28	15%	25%	\$0.11	55.64	57.80	Building Energy Simulation Tool
Stone Clay Glass Products	Ventilation	Insulation - Ceiling	sqft	Existing	0.01	45	\$1.28	15%	25%	\$0.11	8.55	10.30	Building Energy Simulation Tool
Stone Clay Glass Products	Cooling	Insulation - Ducting	sqft	Existing	0.07	20	\$0.84	15%	25%	\$0.62	8.63	9.52	Building Energy Simulation Tool
Stone Clay Glass Products	Heating	Insulation - Ducting	sqft	Existing	0.02	20	\$0.84	15%	25%	\$0.62	2.34	2.44	Building Energy Simulation Tool
Stone Clay Glass Products	Ventilation	Insulation - Ducting	sqft	Existing	0.00	20	\$0.84	15%	25%	\$0.62	0.36	0.43	Building Energy Simulation Tool
Stone Clay Glass Products	Cooling	Insulation - Wall Cavity	sqft	Existing	0.00	45	\$0.15	45%	50%	\$0.01	0.19	0.20	Building Energy Simulation Tool
Stone Clay Glass Products	Heating	Insulation - Wall Cavity	sqft	Existing	0.58	45	\$0.15	45%	50%	\$0.01	40.63	40.71	Building Energy Simulation Tool
Stone Clay Glass Products	Ventilation	Insulation - Wall Cavity	sqft	Existing	0.02	45	\$0.15	45%	50%	\$0.01	5.82	6.92	Building Energy Simulation Tool
Stone Clay Glass Products	Cooling	HVAC - Duct Repair and Sealing	sqft	Existing	0.02	18	\$0.00	15%	25%	\$0.00	3.15	3.31	Building Energy Simulation Tool
Stone Clay Glass Products	Heating	HVAC - Duct Repair and Sealing	sqft	Existing	0.04	18	\$0.00	15%	25%	\$0.00	5.73	5.74	Building Energy Simulation Tool

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Stone Clay Glass Products	Ventilation	HVAC - Duct Repair and Sealing	sqft	Existing	0.00	18	\$0.00	15%	25%	\$0.00	0.82	0.98	Building Energy Simulation Tool
Stone Clay Glass Products	Cooling	Chiller - Chilled Water Reset	sqft	Existing	0.07	10	\$0.01	15%	45%	\$0.02	7.27	7.87	AEG-BEST
Stone Clay Glass Products	Cooling	Chiller - Chilled Water Variable-Flow System	sqft	Existing	0.36	15	\$0.50	15%	60%	\$0.11	57.11	63.93	AEG-BEST
Stone Clay Glass Products	Cooling	Chiller - Variable Speed Fans	sqft	Existing	0.14	15	\$0.03	15%	75%	\$0.02	29.35	31.81	New Jersey TRM
Stone Clay Glass Products	Cooling	HVAC - Economizer	sqft	Existing	1.17	10	\$0.25	18%	30%	\$0.02	31.98	34.57	AEG-BEST
Stone Clay Glass Products	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.25	15%	35%	\$7.50	3.34	4.31	7th Power Plan
Stone Clay Glass Products	Cooling	Destratification Fans (HVLS)	sqft	Existing	0.24	15	\$0.63	15%	50%	\$0.04	116.29	126.44	AEG Research
Stone Clay Glass Products	Heating	Destratification Fans (HVLS)	sqft	Existing	1.05	15	\$0.63	15%	50%	\$0.04	557.18	561.11	AEG Research
Stone Clay Glass Products	Cooling	RTU - Maintenance	sqft	Existing	0.12	3	\$0.07	15%	75%	\$0.15	65.81	74.32	AEG Research
Stone Clay Glass Products	Cooling	Thermostat - WiFi/Interactive	sqft	Existing	0.36	5	\$0.66	5%	15%	\$0.10	45.16	49.17	7th Power Plan
Stone Clay Glass Products	Heating	Thermostat - WiFi/Interactive	sqft	Existing	0.81	5	\$0.66	5%	15%	\$0.10	112.60	116.03	7th Power Plan
Stone Clay Glass Products	Ventilation	Thermostat - WiFi/Interactive	sqft	Existing	0.03	5	\$0.66	5%	15%	\$0.10	17.30	20.66	7th Power Plan
Stone Clay Glass Products	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	1.31	15	\$0.35	7%	33%	\$0.02	295.92	373.81	7th Power Plan
Stone Clay Glass Products	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	1.79	15	\$0.58	7%	33%	\$0.02	392.58	511.36	7th Power Plan
Stone Clay Glass Products	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	Existing	0.02	15	\$0.00	1%	2%	\$0.01	1.49	2.19	7th Power Plan
Stone Clay Glass Products	Interior Lighting	Interior Lighting - Timers and Timers	sqft	Existing	0.00	8	\$0.00	7%	7%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Stone Clay Glass Products	Interior Lighting	Interior Lighting - Skylights	sqft	Existing	0.00	15	\$1.01	15%	23%	\$0.00	0.00	0.00	AEG Research
Stone Clay Glass Products	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	sqft	Existing	0.04	16	\$1.81	5%	40%	\$2.85	47.58	77.05	7th Power Plan
Stone Clay Glass Products	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	Existing	0.04	11	\$0.00	15%	50%	\$0.01	49.42	70.63	Illinois TRM

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Stone Clay Glass Products	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	sqft	Existing	0.05	8	\$0.03	15%	25%	\$0.07	59.50	91.74	7th Power Plan
Stone Clay Glass Products	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	Existing	0.03	8	\$0.02	33%	60%	\$0.07	82.60	131.11	Pacific Gas and Electric Research
Stone Clay Glass Products	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	Existing	0.03	7	\$1.19	15%	30%	\$3.70	51.72	86.73	AEG Research
Stone Clay Glass Products	Process	Process - Conductivity Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Process	Process - Timers and Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Motors	Process - Timers and Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Process	Refrigeration - Floating Head Pressure	employee	Existing	65.54	15	\$63.74	20%	50%	\$0.08	64.44	64.51	RTF Workbook
Stone Clay Glass Products	Process	Refrigeration - System Optimization	employee	Existing	105.01	15	\$44.88	20%	50%	\$0.04	103.29	103.29	AEG Research
Stone Clay Glass Products	Motors	Pumping System - Equipment Upgrade	employee	Existing	920.39	10	\$132.12	9%	38%	\$0.02	864.70	871.56	7th Power Plan
Stone Clay Glass Products	Motors	Pumping System - System Optimization	employee	Existing	676.33	12	\$201.35	9%	38%	\$0.03	614.91	627.30	UNIDO Study on Industrial Energy Efficiency
Stone Clay Glass Products	Motors	Pumping System - Variable Speed Drive	employee	Existing	673.23	10	\$209.48	9%	38%	\$0.03	611.03	625.55	UNIDO Study on Industrial Energy Efficiency
Stone Clay Glass Products	Motors	Fan System - Equipment Upgrade	employee	Existing	715.24	10	\$70.12	9%	38%	\$0.01	655.41	657.60	UNIDO Study on Industrial Energy Efficiency
Stone Clay Glass Products	Motors	Fan System - Flow Optimization	employee	Existing	837.00	10	\$116.02	9%	38%	\$0.02	764.74	772.17	UNIDO Study on Industrial Energy Efficiency
Stone Clay Glass Products	Motors	Fan System - Variable Speed Drive	employee	Existing	1,229.88	10	\$583.79	9%	38%	\$0.05	1,104.90	1,154.78	UNIDO Study on Industrial Energy Efficiency
Stone Clay Glass Products	Motors	Compressed Air - Equipment Upgrade	employee	Existing	412.09	10	\$29.99	17%	50%	\$0.01	453.01	453.01	7th Power Plan
Stone Clay Glass Products	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	Existing	0.00	15	\$0.00	16%	38%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Stone Clay Glass Products	Motors	Compressed Air - Refrigerated Cycling Dryers	employee	Existing	0.00	10	\$0.00	16%	30%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Stone Clay Glass Products	Motors	Compressed Air - System Controls	employee	Existing	91.74	10	\$21.44	9%	38%	\$0.03	85.73	87.62	UNIDO Study on Industrial Energy Efficiency
Stone Clay Glass Products	Motors	Compressed Air - Leak Management Program	employee	Existing	234.77	10	\$21.55	18%	75%	\$0.01	442.10	443.04	7th Power Plan

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Stone Clay Glass Products	Motors	Compressed Air - Variable Speed Drive	employee	Existing	164.84	15	\$131.45	26%	45%	\$0.06	101.09	107.44	UNIDO Study on Industrial Energy Efficiency
Stone Clay Glass Products	Motors	Compressed Air - Low Pressure-Drop Filters	employee	Existing	5.66	10	\$2.03	17%	50%	\$0.04	6.15	6.35	Illinois TRM
Stone Clay Glass Products	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	Existing	34.60	10	\$6.57	17%	50%	\$0.02	37.81	38.43	UNIDO Study on Industrial Energy Efficiency
Stone Clay Glass Products	Motors	Compressed Air - Outside Air Intake	employee	Existing	0.00	20	\$0.00	17%	50%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Stone Clay Glass Products	Motors	Compressed Air - Receiver Capacity Addition	employee	Existing	33.31	15	\$18.07	17%	50%	\$0.04	35.88	37.77	UNIDO Study on Industrial Energy Efficiency
Stone Clay Glass Products	Motors	Material Handling - Variable Speed Drive	employee	Existing	4,877.85	10	\$1,729.79	25%	45%	\$0.04	3,102.24	3,185.45	7th Power Plan
Stone Clay Glass Products	Motors	Motors - Green Rewind (<100 HP)	employee	Existing	67.65	10	\$29.37	10%	50%	\$0.05	426.98	445.29	7th Power Plan
Stone Clay Glass Products	Motors	Motors - Green Rewind (100 HP+)	employee	Existing	38.53	10	\$10.43	6%	25%	\$0.03	116.59	119.29	7th Power Plan
Stone Clay Glass Products	Motors	Switch from Belt Drive to Direct Drive	employee	Existing	585.73	12	\$128.94	16%	25%	\$0.02	890.31	902.34	2015-mdu-irp-report---volume-iii.pdf
Stone Clay Glass Products	Motors	Motors - Synchronous Belts	employee	Existing	155.24	10	\$38.79	16%	36%	\$0.03	507.67	519.06	7th Power Plan
Stone Clay Glass Products	Miscellaneous	Agriculture - Engine Block Timer	employee	Existing	1,383.98	3	\$17.07	0%	0%	\$0.00	0.00	0.00	Vermont TRM
Stone Clay Glass Products	Motors	Agriculture - Live Stock Waterer	employee	Existing	2,169.22	10	\$1,163.53	0%	0%	\$0.06	0.00	0.00	Ontario Power TRM
Stone Clay Glass Products	Process	Dairy - Milk Precoolers	employee	Existing	436.93	15	\$202.83	0%	0%	\$0.04	0.00	0.00	Ontario Power TRM
Stone Clay Glass Products	Process	Clean Room: Change Filter Strategy	employee	Existing	98.18	15	\$0.72	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Process	Clean Room: Chiller Optimize	employee	Existing	129.72	15	\$12.01	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Process	Clean Room: Clean Room HVAC	employee	Existing	78.76	15	\$14.50	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Process	Elec Chip Fab: Solidstate Chiller	employee	Existing	78.65	15	\$45.54	0%	0%	\$0.05	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Process	Elec Chip Fab: Eliminate Exhaust	employee	Existing	12.27	15	\$2.61	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Process	Elec Chip Fab: Exhaust Injector	employee	Existing	24.51	15	\$12.57	0%	0%	\$0.04	0.00	0.00	7th Power Plan

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Stone Clay Glass Products	Process	Elec Chip Fab: Reduce Gas Pressure	employee	Existing	24.54	15	\$0.25	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Motors	Panel: Hydraulic Press	employee	Existing	7,385.33	10	\$1,728.75	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Motors	Wood: Replace Pneumatic Conveyor	employee	Existing	7,853.27	10	\$129.47	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Process	Metal: New Arc Furnace	employee	Existing	6,417.43	10	\$673.65	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Process	Paper: Premium Control Large Material	employee	Existing	716.82	10	\$359.11	0%	0%	\$0.06	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Process	Paper: Efficient Pulp Screen	employee	Existing	574.97	10	\$118.29	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Process	Kraft: Effluent Treatment System	employee	Existing	574.97	10	\$48.50	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Motors	Kraft: Efficient Agitator	employee	Existing	13,405.62	10	\$1,290.05	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Process	Mech Pulp: Premium Process	employee	Existing	6.44	5	\$0.83	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Motors	Mech Pulp: Refiner Plate Improvement	employee	Existing	116.26	1	\$4.92	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Cooling	Transformer - High Efficiency	employee	Existing	84.09	10	\$144.37	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Heating	Transformer - High Efficiency	employee	Existing	189.73	10	\$144.37	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Ventilation	Transformer - High Efficiency	employee	Existing	5.86	10	\$144.37	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Interior Lighting	Transformer - High Efficiency	employee	Existing	30.72	10	\$144.37	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Exterior Lighting	Transformer - High Efficiency	employee	Existing	6.64	10	\$144.37	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Motors	Transformer - High Efficiency	employee	Existing	557.79	10	\$144.37	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Process	Transformer - High Efficiency	employee	Existing	286.82	10	\$144.37	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Miscellaneous	Transformer - High Efficiency	employee	Existing	52.38	10	\$144.37	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Cooling	Strategic Energy Management	employee	Existing	231.95	3	\$886.70	0%	0%	\$0.07	0.00	0.00	AEG Research

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Stone Clay Glass Products	Heating	Strategic Energy Management	employee	Existing	541.12	3	\$886.70	0%	0%	\$0.07	0.00	0.00	AEG Research
Stone Clay Glass Products	Ventilation	Strategic Energy Management	employee	Existing	16.72	3	\$886.70	0%	0%	\$0.07	0.00	0.00	AEG Research
Stone Clay Glass Products	Interior Lighting	Strategic Energy Management	employee	Existing	88.09	3	\$886.70	0%	0%	\$0.07	0.00	0.00	AEG Research
Stone Clay Glass Products	Exterior Lighting	Strategic Energy Management	employee	Existing	19.03	3	\$886.70	0%	0%	\$0.07	0.00	0.00	AEG Research
Stone Clay Glass Products	Motors	Strategic Energy Management	employee	Existing	1,597.46	3	\$886.70	0%	0%	\$0.07	0.00	0.00	AEG Research
Stone Clay Glass Products	Process	Strategic Energy Management	employee	Existing	821.27	3	\$886.70	0%	0%	\$0.07	0.00	0.00	AEG Research
Stone Clay Glass Products	Miscellaneous	Strategic Energy Management	employee	Existing	149.86	3	\$886.70	0%	0%	\$0.07	0.00	0.00	AEG Research
Stone Clay Glass Products	Interior Lighting	Commissioning	employee	Existing	101.64	3	\$1,445.93	0%	0%	\$0.13	0.00	0.00	AEG Research
Stone Clay Glass Products	Exterior Lighting	Commissioning	employee	Existing	21.95	3	\$1,445.93	0%	0%	\$0.13	0.00	0.00	AEG Research
Stone Clay Glass Products	Motors	Commissioning	employee	Existing	1,843.22	3	\$1,445.93	0%	0%	\$0.13	0.00	0.00	AEG Research
Stone Clay Glass Products	Process	Commissioning	employee	Existing	947.63	3	\$1,445.93	0%	0%	\$0.13	0.00	0.00	AEG Research
Stone Clay Glass Products	Miscellaneous	Commissioning	employee	Existing	172.92	3	\$1,445.93	0%	0%	\$0.13	0.00	0.00	AEG Research
Stone Clay Glass Products	Interior Lighting	Retrocommissioning	employee	Existing	102.41	3	\$917.91	10%	40%	\$0.08	74.95	106.88	AEG Research
Stone Clay Glass Products	Exterior Lighting	Retrocommissioning	employee	Existing	22.12	3	\$917.91	10%	40%	\$0.08	16.60	23.78	AEG Research
Stone Clay Glass Products	Motors	Retrocommissioning	employee	Existing	1,859.30	3	\$917.91	10%	40%	\$0.08	1,660.66	1,724.37	AEG Research
Stone Clay Glass Products	Process	Retrocommissioning	employee	Existing	956.06	3	\$917.91	10%	40%	\$0.08	874.39	875.27	AEG Research
Stone Clay Glass Products	Miscellaneous	Retrocommissioning	employee	Existing	174.61	3	\$917.91	10%	40%	\$0.08	202.27	157.20	AEG Research
Stone Clay Glass Products	Motors	Municipal Sewage Treatment	employee	Existing	117.22	12	\$66.42	0%	0%	\$0.05	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Motors	Municipal Water Supply Treatment	employee	Existing	0.00	12	\$0.00	0%	0%	\$0.00	0.00	0.00	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Stone Clay Glass Products	Cooling	Insulation - Ceiling	sqft	New	0.17	45	\$1.28	15%	25%	\$0.12	9.93	10.00	Building Energy Simulation Tool
Stone Clay Glass Products	Heating	Insulation - Ceiling	sqft	New	0.40	45	\$1.28	15%	25%	\$0.12	24.47	24.39	Building Energy Simulation Tool
Stone Clay Glass Products	Ventilation	Insulation - Ceiling	sqft	New	0.01	45	\$1.28	15%	25%	\$0.12	3.02	3.31	Building Energy Simulation Tool
Stone Clay Glass Products	Cooling	Insulation - Ducting	sqft	New	0.07	20	\$0.84	15%	25%	\$0.66	3.86	3.89	Building Energy Simulation Tool
Stone Clay Glass Products	Heating	Insulation - Ducting	sqft	New	0.02	20	\$0.84	15%	25%	\$0.66	1.03	1.03	Building Energy Simulation Tool
Stone Clay Glass Products	Ventilation	Insulation - Ducting	sqft	New	0.00	20	\$0.84	15%	25%	\$0.66	0.13	0.14	Building Energy Simulation Tool
Stone Clay Glass Products	Cooling	Insulation - Wall Cavity	sqft	New	0.00	45	\$0.15	45%	50%	\$0.01	0.08	0.08	Building Energy Simulation Tool
Stone Clay Glass Products	Heating	Insulation - Wall Cavity	sqft	New	0.54	45	\$0.15	45%	50%	\$0.01	16.57	16.58	Building Energy Simulation Tool
Stone Clay Glass Products	Ventilation	Insulation - Wall Cavity	sqft	New	0.01	45	\$0.15	45%	50%	\$0.01	2.02	2.21	Building Energy Simulation Tool
Stone Clay Glass Products	Cooling	HVAC - Duct Repair and Sealing	sqft	New	0.02	18	\$0.00	15%	25%	\$0.00	1.25	1.26	Building Energy Simulation Tool
Stone Clay Glass Products	Heating	HVAC - Duct Repair and Sealing	sqft	New	0.04	18	\$0.00	15%	25%	\$0.00	2.30	2.30	Building Energy Simulation Tool
Stone Clay Glass Products	Ventilation	HVAC - Duct Repair and Sealing	sqft	New	0.00	18	\$0.00	15%	25%	\$0.00	0.28	0.31	Building Energy Simulation Tool
Stone Clay Glass Products	Cooling	Chiller - Chilled Water Reset	sqft	New	0.05	10	\$0.01	15%	45%	\$0.02	0.91	0.94	AEG-BEST
Stone Clay Glass Products	Cooling	Chiller - Chilled Water Variable-Flow System	sqft	New	0.30	15	\$0.50	15%	60%	\$0.13	9.73	9.95	AEG-BEST
Stone Clay Glass Products	Cooling	Chiller - Variable Speed Fans	sqft	New	0.11	15	\$0.03	15%	75%	\$0.02	4.77	4.90	New Jersey TRM
Stone Clay Glass Products	Cooling	HVAC - Economizer	sqft	New	1.03	10	\$0.25	18%	30%	\$0.02	4.35	4.48	AEG-BEST
Stone Clay Glass Products	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.25	15%	35%	\$8.97	0.53	0.62	7th Power Plan
Stone Clay Glass Products	Cooling	Destratification Fans (HVLS)	sqft	New	0.22	15	\$0.63	15%	50%	\$0.04	21.29	21.85	AEG Research
Stone Clay Glass Products	Heating	Destratification Fans (HVLS)	sqft	New	0.99	15	\$0.63	15%	50%	\$0.04	101.90	102.11	AEG Research

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Stone Clay Glass Products	Cooling	RTU - Maintenance	sqft	New	0.12	3	\$0.07	15%	75%	\$0.16	1.44	1.53	AEG Research
Stone Clay Glass Products	Cooling	Thermostat - WiFi/Interactive	sqft	New	0.34	5	\$0.66	5%	15%	\$0.10	2.59	2.67	7th Power Plan
Stone Clay Glass Products	Heating	Thermostat - WiFi/Interactive	sqft	New	0.79	5	\$0.66	5%	15%	\$0.10	6.39	6.38	7th Power Plan
Stone Clay Glass Products	Ventilation	Thermostat - WiFi/Interactive	sqft	New	0.02	5	\$0.66	5%	15%	\$0.10	0.79	0.96	7th Power Plan
Stone Clay Glass Products	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	1.05	15	\$0.35	22%	41%	\$0.02	176.14	205.87	7th Power Plan
Stone Clay Glass Products	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	1.42	15	\$0.58	22%	41%	\$0.02	238.62	280.38	7th Power Plan
Stone Clay Glass Products	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	New	0.02	15	\$0.00	1%	2%	\$0.01	0.21	0.27	7th Power Plan
Stone Clay Glass Products	Interior Lighting	Interior Lighting - Timeclocks and Timers	sqft	New	0.00	8	\$0.00	7%	7%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Stone Clay Glass Products	Interior Lighting	Interior Lighting - Skylights	sqft	New	0.00	15	\$1.01	18%	24%	\$0.00	0.00	0.00	AEG Research
Stone Clay Glass Products	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	sqft	New	0.03	16	\$1.81	5%	40%	\$2.85	9.32	11.98	7th Power Plan
Stone Clay Glass Products	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	New	0.03	11	\$0.00	15%	50%	\$0.01	7.25	9.41	Illinois TRM
Stone Clay Glass Products	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	sqft	New	0.04	8	\$0.03	15%	25%	\$0.07	6.68	9.31	7th Power Plan
Stone Clay Glass Products	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	New	0.02	8	\$0.02	44%	60%	\$0.07	5.71	7.91	Pacific Gas and Electric Research
Stone Clay Glass Products	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	New	0.02	7	\$1.19	15%	30%	\$3.69	5.80	8.11	AEG Research
Stone Clay Glass Products	Process	Process - Conductivity Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Process	Process - Timers and Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Motors	Process - Timers and Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Process	Refrigeration - Floating Head Pressure	employee	New	65.60	15	\$45.05	20%	50%	\$0.06	12.48	12.48	RTF Workbook
Stone Clay Glass Products	Process	Refrigeration - System Optimization	employee	New	105.01	15	\$15.75	20%	50%	\$0.01	19.97	19.97	AEG Research

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Stone Clay Glass Products	Motors	Pumping System - Equipment Upgrade	employee	New	924.53	10	\$132.12	9%	38%	\$0.02	130.82	130.68	7th Power Plan
Stone Clay Glass Products	Motors	Pumping System - System Optimization	employee	New	689.55	12	\$201.35	9%	38%	\$0.03	160.58	159.94	UNIDO Study on Industrial Energy Efficiency
Stone Clay Glass Products	Motors	Pumping System - Variable Speed Drive	employee	New	688.21	10	\$209.48	9%	38%	\$0.03	148.06	147.41	UNIDO Study on Industrial Energy Efficiency
Stone Clay Glass Products	Motors	Fan System - Equipment Upgrade	employee	New	718.84	10	\$70.12	9%	38%	\$0.01	154.08	154.00	UNIDO Study on Industrial Energy Efficiency
Stone Clay Glass Products	Motors	Fan System - Flow Optimization	employee	New	847.34	10	\$116.02	9%	38%	\$0.02	181.77	181.52	UNIDO Study on Industrial Energy Efficiency
Stone Clay Glass Products	Motors	Fan System - Variable Speed Drive	employee	New	1,277.13	10	\$583.79	9%	38%	\$0.05	275.54	273.55	UNIDO Study on Industrial Energy Efficiency
Stone Clay Glass Products	Motors	Compressed Air - Equipment Upgrade	employee	New	412.09	10	\$29.99	17%	50%	\$0.01	67.91	67.91	7th Power Plan
Stone Clay Glass Products	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	New	0.00	15	\$0.00	16%	38%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Stone Clay Glass Products	Motors	Compressed Air - Refrigerated Cycling Dryers	employee	New	0.00	10	\$0.00	16%	30%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Stone Clay Glass Products	Motors	Compressed Air - System Controls	employee	New	93.28	10	\$21.44	9%	38%	\$0.03	13.22	13.19	UNIDO Study on Industrial Energy Efficiency
Stone Clay Glass Products	Motors	Compressed Air - Leak Management Program	employee	New	234.87	10	\$21.55	18%	75%	\$0.01	66.41	66.37	7th Power Plan
Stone Clay Glass Products	Motors	Compressed Air - Variable Speed Drive	employee	New	171.90	15	\$131.45	26%	45%	\$0.06	21.04	20.93	UNIDO Study on Industrial Energy Efficiency
Stone Clay Glass Products	Motors	Compressed Air - Low Pressure-Drop Filters	employee	New	5.75	10	\$2.03	17%	50%	\$0.04	0.95	0.95	Illinois TRM
Stone Clay Glass Products	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	New	35.06	10	\$6.57	17%	50%	\$0.02	5.79	5.78	UNIDO Study on Industrial Energy Efficiency
Stone Clay Glass Products	Motors	Compressed Air - Outside Air Intake	employee	New	0.00	20	\$0.00	17%	50%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Stone Clay Glass Products	Motors	Compressed Air - Receiver Capacity Addition	employee	New	34.53	15	\$18.07	17%	50%	\$0.04	7.39	7.35	UNIDO Study on Industrial Energy Efficiency
Stone Clay Glass Products	Motors	Material Handling - Variable Speed Drive	employee	New	4,997.86	10	\$1,729.79	25%	45%	\$0.04	754.84	751.24	7th Power Plan
Stone Clay Glass Products	Motors	Motors - Green Rewind (<100 HP)	employee	New	70.14	10	\$29.37	10%	50%	\$0.05	106.16	105.43	7th Power Plan
Stone Clay Glass Products	Motors	Motors - Green Rewind (100 HP+)	employee	New	39.37	10	\$10.43	6%	25%	\$0.03	28.23	28.11	7th Power Plan

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Stone Clay Glass Products	Motors	Switch from Belt Drive to Direct Drive	employee	New	593.62	12	\$128.94	16%	25%	\$0.02	230.15	229.50	2015-mdu-irp-report---volume-iii.pdf
Stone Clay Glass Products	Motors	Motors - Synchronous Belts	employee	New	157.90	10	\$38.79	16%	36%	\$0.03	78.31	78.16	7th Power Plan
Stone Clay Glass Products	Miscellaneous	Agriculture - Engine Block Timer	employee	New	1,383.98	3	\$17.07	0%	0%	\$0.00	0.00	0.00	Vermont TRM
Stone Clay Glass Products	Motors	Agriculture - Live Stock Waterer	employee	New	2,262.03	10	\$1,163.53	0%	0%	\$0.06	0.00	0.00	Ontario Power TRM
Stone Clay Glass Products	Process	Dairy - Milk Precoolers	employee	New	437.34	15	\$202.83	0%	0%	\$0.04	0.00	0.00	Ontario Power TRM
Stone Clay Glass Products	Process	Clean Room: Change Filter Strategy	employee	New	98.18	15	\$0.72	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Process	Clean Room: Chiller Optimize	employee	New	129.72	15	\$12.01	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Process	Clean Room: Clean Room HVAC	employee	New	78.72	15	\$14.50	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Process	Elec Chip Fab: Solidstate Chiller	employee	New	78.72	15	\$45.54	0%	0%	\$0.05	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Process	Elec Chip Fab: Eliminate Exhaust	employee	New	12.27	15	\$2.61	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Process	Elec Chip Fab: Exhaust Injector	employee	New	24.53	15	\$12.57	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Process	Elec Chip Fab: Reduce Gas Pressure	employee	New	24.54	15	\$0.25	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Motors	Panel: Hydraulic Press	employee	New	7,508.75	10	\$1,728.75	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Motors	Wood: Replace Pneumatic Conveyor	employee	New	7,853.27	10	\$129.47	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Process	Metal: New Arc Furnace	employee	New	6,417.43	10	\$673.65	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Process	Paper: Premium Control Large Material	employee	New	717.49	10	\$359.11	0%	0%	\$0.06	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Process	Paper: Efficient Pulp Screen	employee	New	574.69	10	\$118.29	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Process	Kraft: Effluent Treatment System	employee	New	574.97	10	\$48.50	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Motors	Kraft: Efficient Agitator	employee	New	13,527.22	10	\$1,290.05	0%	0%	\$0.01	0.00	0.00	7th Power Plan

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Stone Clay Glass Products	Process	Mech Pulp: Premium Process	employee	New	6.43	5	\$0.83	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Motors	Mech Pulp: Refiner Plate Improvement	employee	New	119.11	1	\$4.92	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Cooling	Transformer - High Efficiency	employee	New	76.50	10	\$142.38	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Heating	Transformer - High Efficiency	employee	New	184.45	10	\$142.38	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Ventilation	Transformer - High Efficiency	employee	New	3.58	10	\$142.38	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Interior Lighting	Transformer - High Efficiency	employee	New	24.27	10	\$142.38	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Exterior Lighting	Transformer - High Efficiency	employee	New	5.28	10	\$142.38	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Motors	Transformer - High Efficiency	employee	New	581.93	10	\$142.38	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Process	Transformer - High Efficiency	employee	New	287.26	10	\$142.38	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Miscellaneous	Transformer - High Efficiency	employee	New	49.62	10	\$142.38	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Cooling	Strategic Energy Management	employee	New	218.37	3	\$874.45	0%	0%	\$0.07	0.00	0.00	AEG Research
Stone Clay Glass Products	Heating	Strategic Energy Management	employee	New	530.45	3	\$874.45	0%	0%	\$0.07	0.00	0.00	AEG Research
Stone Clay Glass Products	Ventilation	Strategic Energy Management	employee	New	10.30	3	\$874.45	0%	0%	\$0.07	0.00	0.00	AEG Research
Stone Clay Glass Products	Interior Lighting	Strategic Energy Management	employee	New	70.12	3	\$874.45	0%	0%	\$0.07	0.00	0.00	AEG Research
Stone Clay Glass Products	Exterior Lighting	Strategic Energy Management	employee	New	15.26	3	\$874.45	0%	0%	\$0.07	0.00	0.00	AEG Research
Stone Clay Glass Products	Motors	Strategic Energy Management	employee	New	1,681.14	3	\$874.45	0%	0%	\$0.07	0.00	0.00	AEG Research
Stone Clay Glass Products	Process	Strategic Energy Management	employee	New	829.85	3	\$874.45	0%	0%	\$0.07	0.00	0.00	AEG Research
Stone Clay Glass Products	Miscellaneous	Strategic Energy Management	employee	New	143.34	3	\$874.45	0%	0%	\$0.07	0.00	0.00	AEG Research
Stone Clay Glass Products	Interior Lighting	Commissioning	employee	New	80.90	3	\$1,452.17	10%	40%	\$0.13	1.46	2.21	AEG Research

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Stone Clay Glass Products	Exterior Lighting	Commissioning	employee	New	17.61	3	\$1,452.17	10%	40%	\$0.13	0.33	0.51	AEG Research
Stone Clay Glass Products	Motors	Commissioning	employee	New	1,939.78	3	\$1,452.17	10%	40%	\$0.13	35.90	36.14	AEG Research
Stone Clay Glass Products	Process	Commissioning	employee	New	957.52	3	\$1,452.17	10%	40%	\$0.13	17.59	17.59	AEG Research
Stone Clay Glass Products	Miscellaneous	Commissioning	employee	New	165.39	3	\$1,452.17	10%	40%	\$0.13	3.76	2.54	AEG Research
Stone Clay Glass Products	Interior Lighting	Retrocommissioning	employee	New	80.90	3	\$921.86	0%	0%	\$0.09	0.00	0.00	AEG Research
Stone Clay Glass Products	Exterior Lighting	Retrocommissioning	employee	New	17.61	3	\$921.86	0%	0%	\$0.09	0.00	0.00	AEG Research
Stone Clay Glass Products	Motors	Retrocommissioning	employee	New	1,939.78	3	\$921.86	0%	0%	\$0.09	0.00	0.00	AEG Research
Stone Clay Glass Products	Process	Retrocommissioning	employee	New	957.52	3	\$921.86	0%	0%	\$0.09	0.00	0.00	AEG Research
Stone Clay Glass Products	Miscellaneous	Retrocommissioning	employee	New	165.39	3	\$921.86	0%	0%	\$0.09	0.00	0.00	AEG Research
Stone Clay Glass Products	Motors	Municipal Sewage Treatment	employee	New	122.24	12	\$66.42	0%	0%	\$0.05	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Motors	Municipal Water Supply Treatment	employee	New	0.00	12	\$0.00	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Cooling	Insulation - Ceiling	sqft	Existing	0.18	45	\$1.28	15%	25%	\$0.11	101.66	111.64	Building Energy Simulation Tool
Transportation Equipment Mfg	Heating	Insulation - Ceiling	sqft	Existing	0.40	45	\$1.28	15%	25%	\$0.11	253.64	263.47	Building Energy Simulation Tool
Transportation Equipment Mfg	Ventilation	Insulation - Ceiling	sqft	Existing	0.01	45	\$1.28	15%	25%	\$0.11	38.98	46.93	Building Energy Simulation Tool
Transportation Equipment Mfg	Cooling	Insulation - Ducting	sqft	Existing	0.07	20	\$0.84	15%	25%	\$0.62	39.24	43.33	Building Energy Simulation Tool
Transportation Equipment Mfg	Heating	Insulation - Ducting	sqft	Existing	0.02	20	\$0.84	15%	25%	\$0.62	10.62	11.09	Building Energy Simulation Tool
Transportation Equipment Mfg	Ventilation	Insulation - Ducting	sqft	Existing	0.00	20	\$0.84	15%	25%	\$0.62	1.63	1.98	Building Energy Simulation Tool
Transportation Equipment Mfg	Cooling	Insulation - Wall Cavity	sqft	Existing	0.00	45	\$0.15	45%	50%	\$0.01	0.87	0.91	Building Energy Simulation Tool
Transportation Equipment Mfg	Heating	Insulation - Wall Cavity	sqft	Existing	0.58	45	\$0.15	45%	50%	\$0.01	185.19	185.59	Building Energy Simulation Tool

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Transportation Equipment Mfg	Ventilation	Insulation - Wall Cavity	sqft	Existing	0.02	45	\$0.15	45%	50%	\$0.01	26.51	31.57	Building Energy Simulation Tool
Transportation Equipment Mfg	Cooling	HVAC - Duct Repair and Sealing	sqft	Existing	0.02	18	\$0.00	15%	25%	\$0.00	14.37	15.10	Building Energy Simulation Tool
Transportation Equipment Mfg	Heating	HVAC - Duct Repair and Sealing	sqft	Existing	0.04	18	\$0.00	15%	25%	\$0.00	26.11	26.16	Building Energy Simulation Tool
Transportation Equipment Mfg	Ventilation	HVAC - Duct Repair and Sealing	sqft	Existing	0.00	18	\$0.00	15%	25%	\$0.00	3.74	4.45	Building Energy Simulation Tool
Transportation Equipment Mfg	Cooling	Chiller - Chilled Water Reset	sqft	Existing	0.07	10	\$0.01	15%	45%	\$0.02	33.15	35.87	AEG-BEST
Transportation Equipment Mfg	Cooling	Chiller - Chilled Water Variable-Flow System	sqft	Existing	0.36	15	\$0.50	15%	60%	\$0.11	260.34	291.41	AEG-BEST
Transportation Equipment Mfg	Cooling	Chiller - Variable Speed Fans	sqft	Existing	0.14	15	\$0.03	15%	75%	\$0.02	133.80	144.99	New Jersey TRM
Transportation Equipment Mfg	Cooling	HVAC - Economizer	sqft	Existing	0.63	10	\$0.25	18%	30%	\$0.04	145.75	157.57	AEG-BEST
Transportation Equipment Mfg	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.25	15%	35%	\$7.50	15.20	19.62	7th Power Plan
Transportation Equipment Mfg	Cooling	Destratification Fans (HVLS)	sqft	Existing	0.24	15	\$0.63	15%	50%	\$0.04	530.08	576.36	AEG Research
Transportation Equipment Mfg	Heating	Destratification Fans (HVLS)	sqft	Existing	1.05	15	\$0.63	15%	50%	\$0.04	2,539.83	2,557.72	AEG Research
Transportation Equipment Mfg	Cooling	RTU - Maintenance	sqft	Existing	0.12	3	\$0.07	15%	75%	\$0.15	299.97	338.77	AEG Research
Transportation Equipment Mfg	Cooling	Thermostat - WiFi/Interactive	sqft	Existing	0.36	5	\$0.66	5%	15%	\$0.10	205.85	224.13	7th Power Plan
Transportation Equipment Mfg	Heating	Thermostat - WiFi/Interactive	sqft	Existing	0.81	5	\$0.66	5%	15%	\$0.10	513.28	528.89	7th Power Plan
Transportation Equipment Mfg	Ventilation	Thermostat - WiFi/Interactive	sqft	Existing	0.03	5	\$0.66	5%	15%	\$0.10	78.88	94.18	7th Power Plan
Transportation Equipment Mfg	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.70	15	\$0.35	7%	33%	\$0.03	1,195.44	1,510.08	7th Power Plan
Transportation Equipment Mfg	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.96	15	\$0.58	7%	33%	\$0.04	1,585.91	2,065.74	7th Power Plan
Transportation Equipment Mfg	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	Existing	0.02	15	\$0.00	1%	2%	\$0.01	6.01	8.84	7th Power Plan
Transportation Equipment Mfg	Interior Lighting	Interior Lighting - Timers and Timers	sqft	Existing	0.00	8	\$0.00	7%	7%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx

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Transportation Equipment Mfg	Interior Lighting	Interior Lighting - Skylights	sqft	Existing	0.00	15	\$1.01	15%	23%	\$0.00	0.00	0.00	AEG Research
Transportation Equipment Mfg	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	sqft	Existing	0.04	16	\$1.81	5%	40%	\$2.85	191.40	310.98	7th Power Plan
Transportation Equipment Mfg	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	Existing	0.04	11	\$0.00	15%	50%	\$0.01	199.65	285.32	Illinois TRM
Transportation Equipment Mfg	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	sqft	Existing	0.05	8	\$0.03	15%	25%	\$0.07	240.35	370.60	7th Power Plan
Transportation Equipment Mfg	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	Existing	0.03	8	\$0.02	33%	60%	\$0.07	333.69	529.64	Pacific Gas and Electric Research
Transportation Equipment Mfg	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	Existing	0.03	7	\$1.19	15%	30%	\$3.70	208.06	350.03	AEG Research
Transportation Equipment Mfg	Process	Process - Conductivity Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Process	Process - Timers and Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Motors	Process - Timers and Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Process	Refrigeration - Floating Head Pressure	employee	Existing	96.27	15	\$93.85	20%	50%	\$0.08	219.37	219.95	RTF Workbook
Transportation Equipment Mfg	Process	Refrigeration - System Optimization	employee	Existing	154.62	15	\$66.09	20%	50%	\$0.04	352.64	352.64	AEG Research
Transportation Equipment Mfg	Motors	Pumping System - Equipment Upgrade	employee	Existing	406.27	10	\$59.54	9%	38%	\$0.02	880.48	900.51	7th Power Plan
Transportation Equipment Mfg	Motors	Pumping System - System Optimization	employee	Existing	298.82	12	\$90.74	9%	38%	\$0.03	627.16	646.37	UNIDO Study on Industrial Energy Efficiency
Transportation Equipment Mfg	Motors	Pumping System - Variable Speed Drive	employee	Existing	297.29	10	\$94.41	9%	38%	\$0.03	622.73	644.35	UNIDO Study on Industrial Energy Efficiency
Transportation Equipment Mfg	Motors	Fan System - Equipment Upgrade	employee	Existing	107.08	10	\$10.73	9%	38%	\$0.01	226.30	229.82	UNIDO Study on Industrial Energy Efficiency
Transportation Equipment Mfg	Motors	Fan System - Flow Optimization	employee	Existing	126.36	10	\$17.75	9%	38%	\$0.02	266.88	271.35	UNIDO Study on Industrial Energy Efficiency
Transportation Equipment Mfg	Motors	Fan System - Variable Speed Drive	employee	Existing	184.19	10	\$89.29	9%	38%	\$0.05	381.79	403.48	UNIDO Study on Industrial Energy Efficiency
Transportation Equipment Mfg	Motors	Compressed Air - Equipment Upgrade	employee	Existing	740.65	10	\$53.89	17%	50%	\$0.01	1,887.91	1,887.91	7th Power Plan

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Transportation Equipment Mfg	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	Existing	0.00	15	\$0.00	16%	38%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Transportation Equipment Mfg	Motors	Compressed Air - Refrigerated Cycling Dryers	employee	Existing	0.00	10	\$0.00	16%	30%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Transportation Equipment Mfg	Motors	Compressed Air - System Controls	employee	Existing	161.99	10	\$38.53	9%	38%	\$0.03	349.63	361.44	UNIDO Study on Industrial Energy Efficiency
Transportation Equipment Mfg	Motors	Compressed Air - Leak Management Program	employee	Existing	417.41	10	\$38.74	18%	75%	\$0.01	1,817.68	1,835.52	7th Power Plan
Transportation Equipment Mfg	Motors	Compressed Air - Variable Speed Drive	employee	Existing	291.38	15	\$236.25	26%	45%	\$0.06	412.97	443.28	UNIDO Study on Industrial Energy Efficiency
Transportation Equipment Mfg	Motors	Compressed Air - Low Pressure-Drop Filters	employee	Existing	9.78	10	\$3.64	17%	50%	\$0.04	24.32	25.94	Illinois TRM
Transportation Equipment Mfg	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	Existing	61.15	10	\$11.81	17%	50%	\$0.02	154.36	158.62	UNIDO Study on Industrial Energy Efficiency
Transportation Equipment Mfg	Motors	Compressed Air - Outside Air Intake	employee	Existing	0.00	20	\$0.00	17%	50%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Transportation Equipment Mfg	Motors	Compressed Air - Receiver Capacity Addition	employee	Existing	58.67	15	\$32.48	17%	50%	\$0.04	145.87	155.63	UNIDO Study on Industrial Energy Efficiency
Transportation Equipment Mfg	Motors	Material Handling - Variable Speed Drive	employee	Existing	1,802.96	10	\$652.87	25%	45%	\$0.04	2,645.81	2,747.02	7th Power Plan
Transportation Equipment Mfg	Motors	Motors - Green Rewind (<100 HP)	employee	Existing	26.07	10	\$11.56	10%	50%	\$0.05	379.68	400.38	7th Power Plan
Transportation Equipment Mfg	Motors	Motors - Green Rewind (100 HP+)	employee	Existing	14.86	10	\$4.10	6%	25%	\$0.03	103.77	107.32	7th Power Plan
Transportation Equipment Mfg	Motors	Switch from Belt Drive to Direct Drive	employee	Existing	226.48	12	\$50.75	16%	25%	\$0.02	795.15	813.19	2015-mdu-irp-report---volume-iii.pdf
Transportation Equipment Mfg	Motors	Motors - Synchronous Belts	employee	Existing	59.90	10	\$15.27	16%	36%	\$0.03	452.22	468.39	7th Power Plan
Transportation Equipment Mfg	Miscellaneous	Agriculture - Engine Block Timer	employee	Existing	1,563.91	3	\$19.29	0%	0%	\$0.00	0.00	0.00	Vermont TRM
Transportation Equipment Mfg	Motors	Agriculture - Live Stock Waterer	employee	Existing	961.48	10	\$524.38	0%	0%	\$0.06	0.00	0.00	Ontario Power TRM
Transportation Equipment Mfg	Process	Dairy - Milk Precoolers	employee	Existing	641.83	15	\$298.64	0%	0%	\$0.04	0.00	0.00	Ontario Power TRM
Transportation Equipment Mfg	Process	Clean Room: Change Filter Strategy	employee	Existing	280.14	15	\$2.07	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Process	Clean Room: Chiller Optimize	employee	Existing	191.00	15	\$17.68	0%	0%	\$0.01	0.00	0.00	7th Power Plan

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Transportation Equipment Mfg	Process	Clean Room: Clean Room HVAC	employee	Existing	115.97	15	\$21.35	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Process	Elec Chip Fab: Solidstate Chiller	employee	Existing	115.53	15	\$67.05	0%	0%	\$0.05	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Process	Elec Chip Fab: Eliminate Exhaust	employee	Existing	35.02	15	\$7.43	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Process	Elec Chip Fab: Exhaust Injector	employee	Existing	69.77	15	\$35.86	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Process	Elec Chip Fab: Reduce Gas Pressure	employee	Existing	70.03	15	\$0.72	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Motors	Panel: Hydraulic Press	employee	Existing	2,730.99	10	\$652.48	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Motors	Wood: Replace Pneumatic Conveyor	employee	Existing	2,964.02	10	\$48.86	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Process	Metal: New Arc Furnace	employee	Existing	2,626.97	10	\$275.76	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Process	Paper: Premium Control Large Material	employee	Existing	398.79	10	\$200.26	0%	0%	\$0.06	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Process	Paper: Efficient Pulp Screen	employee	Existing	320.63	10	\$65.97	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Process	Kraft: Effluent Treatment System	employee	Existing	320.63	10	\$27.04	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Motors	Kraft: Efficient Agitator	employee	Existing	5,040.09	10	\$486.90	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Process	Mech Pulp: Premium Process	employee	Existing	3.59	5	\$0.46	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Motors	Mech Pulp: Refiner Plate Improvement	employee	Existing	42.97	1	\$1.86	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Cooling	Transformer - High Efficiency	employee	Existing	165.31	10	\$127.27	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Heating	Transformer - High Efficiency	employee	Existing	373.00	10	\$127.27	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Ventilation	Transformer - High Efficiency	employee	Existing	11.52	10	\$127.27	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Interior Lighting	Transformer - High Efficiency	employee	Existing	53.53	10	\$127.27	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Exterior Lighting	Transformer - High Efficiency	employee	Existing	11.56	10	\$127.27	15%	15%	\$0.01	0.00	0.00	7th Power Plan

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Transportation Equipment Mfg	Motors	Transformer - High Efficiency	employee	Existing	215.37	10	\$127.27	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Process	Transformer - High Efficiency	employee	Existing	159.33	10	\$127.27	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Miscellaneous	Transformer - High Efficiency	employee	Existing	59.19	10	\$127.27	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Cooling	Strategic Energy Management	employee	Existing	455.99	3	\$781.64	0%	5%	\$0.07	28.34	31.26	AEG Research
Transportation Equipment Mfg	Heating	Strategic Energy Management	employee	Existing	1,063.77	3	\$781.64	0%	5%	\$0.07	73.72	76.90	AEG Research
Transportation Equipment Mfg	Ventilation	Strategic Energy Management	employee	Existing	32.88	3	\$781.64	0%	5%	\$0.07	11.33	13.70	AEG Research
Transportation Equipment Mfg	Interior Lighting	Strategic Energy Management	employee	Existing	153.31	3	\$781.64	0%	5%	\$0.07	42.98	61.92	AEG Research
Transportation Equipment Mfg	Exterior Lighting	Strategic Energy Management	employee	Existing	33.12	3	\$781.64	0%	5%	\$0.07	9.52	13.78	AEG Research
Transportation Equipment Mfg	Motors	Strategic Energy Management	employee	Existing	616.10	3	\$781.64	0%	5%	\$0.07	210.24	222.01	AEG Research
Transportation Equipment Mfg	Process	Strategic Energy Management	employee	Existing	455.70	3	\$781.64	0%	5%	\$0.07	159.75	161.66	AEG Research
Transportation Equipment Mfg	Miscellaneous	Strategic Energy Management	employee	Existing	169.13	3	\$781.64	0%	5%	\$0.07	75.24	58.97	AEG Research
Transportation Equipment Mfg	Interior Lighting	Commissioning	employee	Existing	176.70	3	\$753.15	0%	0%	\$0.13	0.00	0.00	AEG Research
Transportation Equipment Mfg	Exterior Lighting	Commissioning	employee	Existing	38.17	3	\$753.15	0%	0%	\$0.13	0.00	0.00	AEG Research
Transportation Equipment Mfg	Motors	Commissioning	employee	Existing	710.00	3	\$753.15	0%	0%	\$0.13	0.00	0.00	AEG Research
Transportation Equipment Mfg	Process	Commissioning	employee	Existing	525.14	3	\$753.15	0%	0%	\$0.13	0.00	0.00	AEG Research
Transportation Equipment Mfg	Miscellaneous	Commissioning	employee	Existing	194.87	3	\$753.15	0%	0%	\$0.13	0.00	0.00	AEG Research
Transportation Equipment Mfg	Interior Lighting	Retrocommissioning	employee	Existing	178.42	3	\$478.11	5%	39%	\$0.08	343.14	489.35	AEG Research
Transportation Equipment Mfg	Exterior Lighting	Retrocommissioning	employee	Existing	38.53	3	\$478.11	5%	39%	\$0.08	75.98	108.89	AEG Research
Transportation Equipment Mfg	Motors	Retrocommissioning	employee	Existing	717.89	3	\$478.11	5%	39%	\$0.08	1,678.34	1,755.65	AEG Research

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Transportation Equipment Mfg	Process	Retrocommissioning	employee	Existing	531.12	3	\$478.11	5%	39%	\$0.08	1,275.28	1,278.66	AEG Research
Transportation Equipment Mfg	Miscellaneous	Retrocommissioning	employee	Existing	197.31	3	\$478.11	5%	39%	\$0.08	600.65	466.81	AEG Research
Transportation Equipment Mfg	Motors	Municipal Sewage Treatment	employee	Existing	51.96	12	\$29.93	0%	0%	\$0.05	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Motors	Municipal Water Supply Treatment	employee	Existing	0.00	12	\$0.00	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Cooling	Insulation - Ceiling	sqft	New	0.17	45	\$1.28	15%	25%	\$0.12	45.23	45.54	Building Energy Simulation Tool
Transportation Equipment Mfg	Heating	Insulation - Ceiling	sqft	New	0.40	45	\$1.28	15%	25%	\$0.12	111.50	111.14	Building Energy Simulation Tool
Transportation Equipment Mfg	Ventilation	Insulation - Ceiling	sqft	New	0.01	45	\$1.28	15%	25%	\$0.12	13.76	15.08	Building Energy Simulation Tool
Transportation Equipment Mfg	Cooling	Insulation - Ducting	sqft	New	0.07	20	\$0.84	15%	25%	\$0.66	17.58	17.71	Building Energy Simulation Tool
Transportation Equipment Mfg	Heating	Insulation - Ducting	sqft	New	0.02	20	\$0.84	15%	25%	\$0.66	4.70	4.69	Building Energy Simulation Tool
Transportation Equipment Mfg	Ventilation	Insulation - Ducting	sqft	New	0.00	20	\$0.84	15%	25%	\$0.66	0.58	0.64	Building Energy Simulation Tool
Transportation Equipment Mfg	Cooling	Insulation - Wall Cavity	sqft	New	0.00	45	\$0.15	45%	50%	\$0.01	0.35	0.35	Building Energy Simulation Tool
Transportation Equipment Mfg	Heating	Insulation - Wall Cavity	sqft	New	0.54	45	\$0.15	45%	50%	\$0.01	75.51	75.55	Building Energy Simulation Tool
Transportation Equipment Mfg	Ventilation	Insulation - Wall Cavity	sqft	New	0.01	45	\$0.15	45%	50%	\$0.01	9.20	10.08	Building Energy Simulation Tool
Transportation Equipment Mfg	Cooling	HVAC - Duct Repair and Sealing	sqft	New	0.02	18	\$0.00	15%	25%	\$0.00	5.67	5.74	Building Energy Simulation Tool
Transportation Equipment Mfg	Heating	HVAC - Duct Repair and Sealing	sqft	New	0.04	18	\$0.00	15%	25%	\$0.00	10.46	10.46	Building Energy Simulation Tool
Transportation Equipment Mfg	Ventilation	HVAC - Duct Repair and Sealing	sqft	New	0.00	18	\$0.00	15%	25%	\$0.00	1.27	1.40	Building Energy Simulation Tool
Transportation Equipment Mfg	Cooling	Chiller - Chilled Water Reset	sqft	New	0.05	10	\$0.01	15%	45%	\$0.02	4.16	4.30	AEG-BEST
Transportation Equipment Mfg	Cooling	Chiller - Chilled Water Variable-Flow System	sqft	New	0.30	15	\$0.50	15%	60%	\$0.13	44.31	45.34	AEG-BEST
Transportation Equipment Mfg	Cooling	Chiller - Variable Speed Fans	sqft	New	0.11	15	\$0.03	15%	75%	\$0.02	21.73	22.33	New Jersey TRM

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Transportation Equipment Mfg	Cooling	HVAC - Economizer	sqft	New	0.56	10	\$0.25	18%	30%	\$0.05	19.80	20.43	AEG-BEST
Transportation Equipment Mfg	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.25	15%	35%	\$8.97	2.40	2.84	7th Power Plan
Transportation Equipment Mfg	Cooling	Destratification Fans (HVLS)	sqft	New	0.22	15	\$0.63	15%	50%	\$0.04	96.98	99.52	AEG Research
Transportation Equipment Mfg	Heating	Destratification Fans (HVLS)	sqft	New	0.99	15	\$0.63	15%	50%	\$0.04	464.17	465.15	AEG Research
Transportation Equipment Mfg	Cooling	RTU - Maintenance	sqft	New	0.12	3	\$0.07	15%	75%	\$0.16	6.52	6.96	AEG Research
Transportation Equipment Mfg	Cooling	Thermostat - WiFi/Interactive	sqft	New	0.34	5	\$0.66	5%	15%	\$0.10	11.81	12.15	7th Power Plan
Transportation Equipment Mfg	Heating	Thermostat - WiFi/Interactive	sqft	New	0.79	5	\$0.66	5%	15%	\$0.10	29.12	29.08	7th Power Plan
Transportation Equipment Mfg	Ventilation	Thermostat - WiFi/Interactive	sqft	New	0.02	5	\$0.66	5%	15%	\$0.10	3.59	4.36	7th Power Plan
Transportation Equipment Mfg	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.56	15	\$0.35	22%	41%	\$0.03	711.35	831.32	7th Power Plan
Transportation Equipment Mfg	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.77	15	\$0.58	22%	41%	\$0.04	963.66	1,132.20	7th Power Plan
Transportation Equipment Mfg	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	New	0.02	15	\$0.00	1%	2%	\$0.01	0.83	1.08	7th Power Plan
Transportation Equipment Mfg	Interior Lighting	Interior Lighting - Timeclocks and Timers	sqft	New	0.00	8	\$0.00	7%	7%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Transportation Equipment Mfg	Interior Lighting	Interior Lighting - Skylights	sqft	New	0.00	15	\$1.01	18%	24%	\$0.00	0.00	0.00	AEG Research
Transportation Equipment Mfg	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	sqft	New	0.03	16	\$1.81	5%	40%	\$2.85	37.62	48.31	7th Power Plan
Transportation Equipment Mfg	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	New	0.03	11	\$0.00	15%	50%	\$0.01	29.28	37.97	Illinois TRM
Transportation Equipment Mfg	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	sqft	New	0.04	8	\$0.03	15%	25%	\$0.07	26.97	37.56	7th Power Plan
Transportation Equipment Mfg	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	New	0.02	8	\$0.02	44%	60%	\$0.07	23.06	31.94	Pacific Gas and Electric Research
Transportation Equipment Mfg	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	New	0.02	7	\$1.19	15%	30%	\$3.69	23.41	32.71	AEG Research
Transportation Equipment Mfg	Process	Process - Conductivity Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A

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Transportation Equipment Mfg	Process	Process - Timers and Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Motors	Process - Timers and Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Process	Refrigeration - Floating Head Pressure	employee	New	96.52	15	\$66.33	20%	50%	\$0.06	42.55	42.53	RTF Workbook
Transportation Equipment Mfg	Process	Refrigeration - System Optimization	employee	New	154.62	15	\$23.19	20%	50%	\$0.01	68.13	68.13	AEG Research
Transportation Equipment Mfg	Motors	Pumping System - Equipment Upgrade	employee	New	414.79	10	\$59.54	9%	38%	\$0.02	136.33	135.82	7th Power Plan
Transportation Equipment Mfg	Motors	Pumping System - System Optimization	employee	New	308.99	12	\$90.74	9%	38%	\$0.03	167.23	166.02	UNIDO Study on Industrial Energy Efficiency
Transportation Equipment Mfg	Motors	Pumping System - Variable Speed Drive	employee	New	308.31	10	\$94.41	9%	38%	\$0.03	154.17	152.98	UNIDO Study on Industrial Energy Efficiency
Transportation Equipment Mfg	Motors	Fan System - Equipment Upgrade	employee	New	109.58	10	\$10.73	9%	38%	\$0.01	54.51	54.39	UNIDO Study on Industrial Energy Efficiency
Transportation Equipment Mfg	Motors	Fan System - Flow Optimization	employee	New	128.87	10	\$17.75	9%	38%	\$0.02	64.24	63.95	UNIDO Study on Industrial Energy Efficiency
Transportation Equipment Mfg	Motors	Fan System - Variable Speed Drive	employee	New	194.13	10	\$89.29	9%	38%	\$0.05	97.36	96.32	UNIDO Study on Industrial Energy Efficiency
Transportation Equipment Mfg	Motors	Compressed Air - Equipment Upgrade	employee	New	740.65	10	\$53.89	17%	50%	\$0.01	282.84	282.84	7th Power Plan
Transportation Equipment Mfg	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	New	0.00	15	\$0.00	16%	38%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Transportation Equipment Mfg	Motors	Compressed Air - Refrigerated Cycling Dryers	employee	New	0.00	10	\$0.00	16%	30%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Transportation Equipment Mfg	Motors	Compressed Air - System Controls	employee	New	166.80	10	\$38.53	9%	38%	\$0.03	54.91	54.65	UNIDO Study on Industrial Energy Efficiency
Transportation Equipment Mfg	Motors	Compressed Air - Leak Management Program	employee	New	421.12	10	\$38.74	18%	75%	\$0.01	276.26	275.74	7th Power Plan
Transportation Equipment Mfg	Motors	Compressed Air - Variable Speed Drive	employee	New	307.59	15	\$236.25	26%	45%	\$0.06	87.46	86.77	UNIDO Study on Industrial Energy Efficiency
Transportation Equipment Mfg	Motors	Compressed Air - Low Pressure-Drop Filters	employee	New	10.28	10	\$3.64	17%	50%	\$0.04	3.96	3.94	Illinois TRM
Transportation Equipment Mfg	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	New	62.72	10	\$11.81	17%	50%	\$0.02	24.07	23.96	UNIDO Study on Industrial Energy Efficiency
Transportation Equipment Mfg	Motors	Compressed Air - Outside Air Intake	employee	New	0.00	20	\$0.00	17%	50%	\$0.00	0.00	0.00	Michigan Energy Measures Database

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Transportation Equipment Mfg	Motors	Compressed Air - Receiver Capacity Addition	employee	New	61.69	15	\$32.48	17%	50%	\$0.04	30.67	30.44	UNIDO Study on Industrial Energy Efficiency
Transportation Equipment Mfg	Motors	Material Handling - Variable Speed Drive	employee	New	1,874.64	10	\$652.87	25%	45%	\$0.04	658.13	652.73	7th Power Plan
Transportation Equipment Mfg	Motors	Motors - Green Rewind (<100 HP)	employee	New	27.44	10	\$11.56	10%	50%	\$0.05	96.53	95.53	7th Power Plan
Transportation Equipment Mfg	Motors	Motors - Green Rewind (100 HP+)	employee	New	15.40	10	\$4.10	6%	25%	\$0.03	25.67	25.47	7th Power Plan
Transportation Equipment Mfg	Motors	Switch from Belt Drive to Direct Drive	employee	New	232.47	12	\$50.75	16%	25%	\$0.02	209.41	208.20	2015-mdu-irp-report---volume-iii.pdf
Transportation Equipment Mfg	Motors	Motors - Synchronous Belts	employee	New	61.79	10	\$15.27	16%	36%	\$0.03	71.22	70.86	7th Power Plan
Transportation Equipment Mfg	Miscellaneous	Agriculture - Engine Block Timer	employee	New	1,563.91	3	\$19.29	0%	0%	\$0.00	0.00	0.00	Vermont TRM
Transportation Equipment Mfg	Motors	Agriculture - Live Stock Waterer	employee	New	1,014.98	10	\$524.38	0%	0%	\$0.06	0.00	0.00	Ontario Power TRM
Transportation Equipment Mfg	Process	Dairy - Milk Precoolers	employee	New	643.43	15	\$298.64	0%	0%	\$0.04	0.00	0.00	Ontario Power TRM
Transportation Equipment Mfg	Process	Clean Room: Change Filter Strategy	employee	New	280.14	15	\$2.07	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Process	Clean Room: Chiller Optimize	employee	New	191.00	15	\$17.68	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Process	Clean Room: Clean Room HVAC	employee	New	115.82	15	\$21.35	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Process	Elec Chip Fab: Solidstate Chiller	employee	New	115.82	15	\$67.05	0%	0%	\$0.05	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Process	Elec Chip Fab: Eliminate Exhaust	employee	New	34.97	15	\$7.43	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Process	Elec Chip Fab: Exhaust Injector	employee	New	69.94	15	\$35.86	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Process	Elec Chip Fab: Reduce Gas Pressure	employee	New	70.03	15	\$0.72	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Motors	Panel: Hydraulic Press	employee	New	2,817.23	10	\$652.48	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Motors	Wood: Replace Pneumatic Conveyor	employee	New	2,964.02	10	\$48.86	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Process	Metal: New Arc Furnace	employee	New	2,626.97	10	\$275.76	0%	0%	\$0.01	0.00	0.00	7th Power Plan

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Transportation Equipment Mfg	Process	Paper: Premium Control Large Material	employee	New	399.79	10	\$200.26	0%	0%	\$0.06	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Process	Paper: Efficient Pulp Screen	employee	New	320.22	10	\$65.97	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Process	Kraft: Effluent Treatment System	employee	New	320.63	10	\$27.04	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Motors	Kraft: Efficient Agitator	employee	New	5,063.27	10	\$486.90	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Process	Mech Pulp: Premium Process	employee	New	3.58	5	\$0.46	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Motors	Mech Pulp: Refiner Plate Improvement	employee	New	44.68	1	\$1.86	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Cooling	Transformer - High Efficiency	employee	New	150.39	10	\$123.12	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Heating	Transformer - High Efficiency	employee	New	362.61	10	\$123.12	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Ventilation	Transformer - High Efficiency	employee	New	7.04	10	\$123.12	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Interior Lighting	Transformer - High Efficiency	employee	New	42.27	10	\$123.12	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Exterior Lighting	Transformer - High Efficiency	employee	New	9.20	10	\$123.12	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Motors	Transformer - High Efficiency	employee	New	227.85	10	\$123.12	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Process	Transformer - High Efficiency	employee	New	159.98	10	\$123.12	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Miscellaneous	Transformer - High Efficiency	employee	New	56.07	10	\$123.12	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Cooling	Strategic Energy Management	employee	New	429.26	3	\$756.19	0%	5%	\$0.07	0.58	0.61	AEG Research
Transportation Equipment Mfg	Heating	Strategic Energy Management	employee	New	1,042.82	3	\$756.19	0%	5%	\$0.07	1.50	1.51	AEG Research
Transportation Equipment Mfg	Ventilation	Strategic Energy Management	employee	New	20.25	3	\$756.19	0%	5%	\$0.07	0.19	0.23	AEG Research
Transportation Equipment Mfg	Interior Lighting	Strategic Energy Management	employee	New	122.10	3	\$756.19	0%	5%	\$0.07	0.85	1.29	AEG Research
Transportation Equipment Mfg	Exterior Lighting	Strategic Energy Management	employee	New	26.58	3	\$756.19	0%	5%	\$0.07	0.20	0.30	AEG Research

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Transportation Equipment Mfg	Motors	Strategic Energy Management	employee	New	658.22	3	\$756.19	0%	5%	\$0.07	4.72	4.74	AEG Research
Transportation Equipment Mfg	Process	Strategic Energy Management	employee	New	462.17	3	\$756.19	0%	5%	\$0.07	3.28	3.28	AEG Research
Transportation Equipment Mfg	Miscellaneous	Strategic Energy Management	employee	New	161.97	3	\$756.19	0%	5%	\$0.07	1.42	0.96	AEG Research
Transportation Equipment Mfg	Interior Lighting	Commissioning	employee	New	140.86	3	\$764.01	5%	39%	\$0.13	6.69	10.11	AEG Research
Transportation Equipment Mfg	Exterior Lighting	Commissioning	employee	New	30.66	3	\$764.01	5%	39%	\$0.13	1.53	2.34	AEG Research
Transportation Equipment Mfg	Motors	Commissioning	employee	New	759.33	3	\$764.01	5%	39%	\$0.13	37.04	37.18	AEG Research
Transportation Equipment Mfg	Process	Commissioning	employee	New	533.16	3	\$764.01	5%	39%	\$0.13	25.75	25.74	AEG Research
Transportation Equipment Mfg	Miscellaneous	Commissioning	employee	New	186.85	3	\$764.01	5%	39%	\$0.13	11.17	7.53	AEG Research
Transportation Equipment Mfg	Interior Lighting	Retrocommissioning	employee	New	140.89	3	\$485.01	0%	0%	\$0.08	0.00	0.00	AEG Research
Transportation Equipment Mfg	Exterior Lighting	Retrocommissioning	employee	New	30.67	3	\$485.01	0%	0%	\$0.08	0.00	0.00	AEG Research
Transportation Equipment Mfg	Motors	Retrocommissioning	employee	New	759.49	3	\$485.01	0%	0%	\$0.08	0.00	0.00	AEG Research
Transportation Equipment Mfg	Process	Retrocommissioning	employee	New	533.27	3	\$485.01	0%	0%	\$0.08	0.00	0.00	AEG Research
Transportation Equipment Mfg	Miscellaneous	Retrocommissioning	employee	New	186.89	3	\$485.01	0%	0%	\$0.08	0.00	0.00	AEG Research
Transportation Equipment Mfg	Motors	Municipal Sewage Treatment	employee	New	54.85	12	\$29.93	0%	0%	\$0.05	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Motors	Municipal Water Supply Treatment	employee	New	0.00	12	\$0.00	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Wastewater	Cooling	Insulation - Ceiling	sqft	Existing	0.18	45	\$1.28	15%	25%	\$0.11	5.22	5.74	Building Energy Simulation Tool
Wastewater	Heating	Insulation - Ceiling	sqft	Existing	0.40	45	\$1.28	15%	25%	\$0.11	13.03	13.54	Building Energy Simulation Tool
Wastewater	Ventilation	Insulation - Ceiling	sqft	Existing	0.01	45	\$1.28	15%	25%	\$0.11	2.00	2.41	Building Energy Simulation Tool
Wastewater	Cooling	Insulation - Ducting	sqft	Existing	0.07	20	\$0.84	15%	25%	\$0.62	2.02	2.23	Building Energy Simulation Tool

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Wastewater	Heating	Insulation - Ducting	sqft	Existing	0.02	20	\$0.84	15%	25%	\$0.62	0.55	0.57	Building Energy Simulation Tool
Wastewater	Ventilation	Insulation - Ducting	sqft	Existing	0.00	20	\$0.84	15%	25%	\$0.62	0.08	0.10	Building Energy Simulation Tool
Wastewater	Cooling	Insulation - Wall Cavity	sqft	Existing	0.00	45	\$0.15	45%	50%	\$0.01	0.04	0.05	Building Energy Simulation Tool
Wastewater	Heating	Insulation - Wall Cavity	sqft	Existing	0.58	45	\$0.15	45%	50%	\$0.01	9.51	9.53	Building Energy Simulation Tool
Wastewater	Ventilation	Insulation - Wall Cavity	sqft	Existing	0.02	45	\$0.15	45%	50%	\$0.01	1.36	1.62	Building Energy Simulation Tool
Wastewater	Cooling	HVAC - Duct Repair and Sealing	sqft	Existing	0.02	18	\$0.00	15%	25%	\$0.00	0.74	0.78	Building Energy Simulation Tool
Wastewater	Heating	HVAC - Duct Repair and Sealing	sqft	Existing	0.04	18	\$0.00	15%	25%	\$0.00	1.34	1.34	Building Energy Simulation Tool
Wastewater	Ventilation	HVAC - Duct Repair and Sealing	sqft	Existing	0.00	18	\$0.00	15%	25%	\$0.00	0.19	0.23	Building Energy Simulation Tool
Wastewater	Cooling	Chiller - Chilled Water Reset	sqft	Existing	0.07	10	\$0.01	15%	45%	\$0.02	1.70	1.84	AEG-BEST
Wastewater	Cooling	Chiller - Chilled Water Variable-Flow System	sqft	Existing	0.36	15	\$0.50	15%	60%	\$0.11	13.38	14.97	AEG-BEST
Wastewater	Cooling	Chiller - Variable Speed Fans	sqft	Existing	0.14	15	\$0.03	15%	75%	\$0.02	6.87	7.45	New Jersey TRM
Wastewater	Cooling	HVAC - Economizer	sqft	Existing	0.36	10	\$0.25	18%	30%	\$0.07	7.49	8.10	AEG-BEST
Wastewater	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.25	15%	35%	\$7.50	0.78	1.01	7th Power Plan
Wastewater	Cooling	Destratification Fans (HVLS)	sqft	Existing	0.24	15	\$0.63	15%	50%	\$0.04	27.23	29.61	AEG Research
Wastewater	Heating	Destratification Fans (HVLS)	sqft	Existing	1.05	15	\$0.63	15%	50%	\$0.04	130.49	131.41	AEG Research
Wastewater	Cooling	RTU - Maintenance	sqft	Existing	0.12	3	\$0.07	15%	75%	\$0.15	15.41	17.40	AEG Research
Wastewater	Cooling	Thermostat - WiFi/Interactive	sqft	Existing	0.36	5	\$0.66	5%	15%	\$0.10	10.58	11.51	7th Power Plan
Wastewater	Heating	Thermostat - WiFi/Interactive	sqft	Existing	0.81	5	\$0.66	5%	15%	\$0.10	26.37	27.17	7th Power Plan
Wastewater	Ventilation	Thermostat - WiFi/Interactive	sqft	Existing	0.03	5	\$0.66	5%	15%	\$0.10	4.05	4.84	7th Power Plan
Wastewater	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.41	15	\$0.35	7%	33%	\$0.06	78.61	99.30	7th Power Plan
Wastewater	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.56	15	\$0.58	7%	33%	\$0.07	104.29	135.84	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Wastewater	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	Existing	0.02	15	\$0.00	1%	2%	\$0.01	0.39	0.58	7th Power Plan
Wastewater	Interior Lighting	Interior Lighting - Timeclocks and Timers	sqft	Existing	0.00	8	\$0.00	7%	7%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Wastewater	Interior Lighting	Interior Lighting - Skylights	sqft	Existing	0.00	15	\$1.01	15%	23%	\$0.00	0.00	0.00	AEG Research
Wastewater	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	sqft	Existing	0.04	16	\$1.81	5%	40%	\$2.85	12.59	20.45	7th Power Plan
Wastewater	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	Existing	0.04	11	\$0.00	15%	50%	\$0.01	13.13	18.76	Illinois TRM
Wastewater	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	sqft	Existing	0.05	8	\$0.03	15%	25%	\$0.07	15.81	24.37	7th Power Plan
Wastewater	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	Existing	0.03	8	\$0.02	33%	60%	\$0.07	21.94	34.83	Pacific Gas and Electric Research
Wastewater	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	Existing	0.03	7	\$1.19	15%	30%	\$3.70	13.68	23.02	AEG Research
Wastewater	Process	Process - Conductivity Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Wastewater	Process	Process - Timers and Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Wastewater	Motors	Process - Timers and Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Wastewater	Process	Refrigeration - Floating Head Pressure	employee	Existing	0.00	15	\$320.93	20%	50%	\$0.00	0.00	0.00	RTF Workbook
Wastewater	Process	Refrigeration - System Optimization	employee	Existing	0.00	15	\$225.99	20%	50%	\$0.00	0.00	0.00	AEG Research
Wastewater	Motors	Pumping System - Equipment Upgrade	employee	Existing	7,369.33	10	\$1,087.13	9%	38%	\$0.02	913.69	945.47	7th Power Plan
Wastewater	Motors	Pumping System - System Optimization	employee	Existing	5,404.59	12	\$1,656.79	9%	38%	\$0.03	648.40	676.16	UNIDO Study on Industrial Energy Efficiency
Wastewater	Motors	Pumping System - Variable Speed Drive	employee	Existing	5,354.35	10	\$1,723.68	9%	38%	\$0.03	640.04	672.32	UNIDO Study on Industrial Energy Efficiency
Wastewater	Motors	Fan System - Equipment Upgrade	employee	Existing	10,343.53	10	\$1,009.43	9%	38%	\$0.01	1,265.65	1,266.65	UNIDO Study on Industrial Energy Efficiency
Wastewater	Motors	Fan System - Flow Optimization	employee	Existing	12,015.40	10	\$1,670.15	9%	38%	\$0.02	1,461.14	1,481.23	UNIDO Study on Industrial Energy Efficiency
Wastewater	Motors	Fan System - Variable Speed Drive	employee	Existing	17,345.47	10	\$8,404.11	9%	38%	\$0.05	2,062.67	2,189.19	UNIDO Study on Industrial Energy Efficiency

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Wastewater	Motors	Compressed Air - Equipment Upgrade	employee	Existing	705.08	10	\$51.31	17%	50%	\$0.01	103.38	103.38	7th Power Plan
Wastewater	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	Existing	0.00	15	\$0.00	16%	38%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Wastewater	Motors	Compressed Air - Refrigerated Cycling Dryers	employee	Existing	0.00	10	\$0.00	16%	30%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Wastewater	Motors	Compressed Air - System Controls	employee	Existing	152.39	10	\$36.68	9%	38%	\$0.03	18.79	19.73	UNIDO Study on Industrial Energy Efficiency
Wastewater	Motors	Compressed Air - Leak Management Program	employee	Existing	396.01	10	\$36.88	18%	75%	\$0.01	98.93	100.49	7th Power Plan
Wastewater	Motors	Compressed Air - Variable Speed Drive	employee	Existing	270.24	15	\$224.90	26%	45%	\$0.06	21.74	24.06	UNIDO Study on Industrial Energy Efficiency
Wastewater	Motors	Compressed Air - Low Pressure-Drop Filters	employee	Existing	9.30	10	\$3.47	17%	50%	\$0.04	1.33	1.42	Illinois TRM
Wastewater	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	Existing	57.47	10	\$11.25	17%	50%	\$0.02	8.28	8.65	UNIDO Study on Industrial Energy Efficiency
Wastewater	Motors	Compressed Air - Outside Air Intake	employee	Existing	0.00	20	\$0.00	17%	50%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Wastewater	Motors	Compressed Air - Receiver Capacity Addition	employee	Existing	55.82	15	\$30.92	17%	50%	\$0.04	7.96	8.54	UNIDO Study on Industrial Energy Efficiency
Wastewater	Motors	Material Handling - Variable Speed Drive	employee	Existing	1,559.26	10	\$574.77	25%	45%	\$0.04	130.36	137.85	7th Power Plan
Wastewater	Motors	Motors - Green Rewind (<100 HP)	employee	Existing	243.12	10	\$107.75	10%	50%	\$0.05	203.10	215.10	7th Power Plan
Wastewater	Motors	Motors - Green Rewind (100 HP+)	employee	Existing	136.59	10	\$38.24	6%	25%	\$0.03	54.44	57.15	7th Power Plan
Wastewater	Motors	Switch from Belt Drive to Direct Drive	employee	Existing	2,085.70	12	\$472.96	16%	25%	\$0.02	418.33	433.46	2015-mdu-irp-report---volume-iii.pdf
Wastewater	Motors	Motors - Synchronous Belts	employee	Existing	552.99	10	\$142.28	16%	36%	\$0.03	238.63	250.61	7th Power Plan
Wastewater	Miscellaneous	Agriculture - Engine Block Timer	employee	Existing	2,686.14	3	\$33.14	0%	0%	\$0.00	0.00	0.00	Vermont TRM
Wastewater	Motors	Agriculture - Live Stock Waterer	employee	Existing	17,102.45	10	\$9,574.14	0%	0%	\$0.06	0.00	0.00	Ontario Power TRM
Wastewater	Process	Dairy - Milk Precoolers	employee	Existing	0.00	15	\$1,021.23	0%	0%	\$0.00	0.00	0.00	Ontario Power TRM
Wastewater	Process	Clean Room: Change Filter Strategy	employee	Existing	0.00	15	\$13.00	0%	0%	\$0.00	0.00	0.00	7th Power Plan

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Wastewater	Process	Clean Room: Chiller Optimize	employee	Existing	0.00	15	\$60.47	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Wastewater	Process	Clean Room: Clean Room HVAC	employee	Existing	0.00	15	\$73.00	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Wastewater	Process	Elec Chip Fab: Solidstate Chiller	employee	Existing	0.00	15	\$229.28	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Wastewater	Process	Elec Chip Fab: Eliminate Exhaust	employee	Existing	0.00	15	\$46.77	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Wastewater	Process	Elec Chip Fab: Exhaust Injector	employee	Existing	0.00	15	\$225.59	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Wastewater	Process	Elec Chip Fab: Reduce Gas Pressure	employee	Existing	0.00	15	\$4.52	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Wastewater	Motors	Panel: Hydraulic Press	employee	Existing	2,381.72	10	\$574.43	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Wastewater	Motors	Wood: Replace Pneumatic Conveyor	employee	Existing	2,609.48	10	\$43.02	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Wastewater	Process	Metal: New Arc Furnace	employee	Existing	0.00	10	\$208.14	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Wastewater	Process	Paper: Premium Control Large Material	employee	Existing	1,396.45	10	\$698.59	0%	0%	\$0.06	0.00	0.00	7th Power Plan
Wastewater	Process	Paper: Efficient Pulp Screen	employee	Existing	1,118.51	10	\$230.12	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Wastewater	Process	Kraft: Effluent Treatment System	employee	Existing	1,118.51	10	\$94.34	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Wastewater	Motors	Kraft: Efficient Agitator	employee	Existing	4,492.77	10	\$428.66	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Wastewater	Process	Mech Pulp: Premium Process	employee	Existing	12.52	5	\$1.61	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Wastewater	Motors	Mech Pulp: Refiner Plate Improvement	employee	Existing	37.16	1	\$1.64	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Wastewater	Cooling	Transformer - High Efficiency	employee	Existing	147.64	10	\$340.46	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Wastewater	Heating	Transformer - High Efficiency	employee	Existing	333.13	10	\$340.46	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Wastewater	Ventilation	Transformer - High Efficiency	employee	Existing	10.28	10	\$340.46	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Wastewater	Interior Lighting	Transformer - High Efficiency	employee	Existing	61.19	10	\$340.46	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Wastewater	Exterior Lighting	Transformer - High Efficiency	employee	Existing	13.21	10	\$340.46	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Wastewater	Motors	Transformer - High Efficiency	employee	Existing	1,961.17	10	\$340.46	15%	15%	\$0.01	0.00	0.00	7th Power Plan

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Wastewater	Process	Transformer - High Efficiency	employee	Existing	111.85	10	\$340.46	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Wastewater	Miscellaneous	Transformer - High Efficiency	employee	Existing	101.67	10	\$340.46	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Wastewater	Cooling	Strategic Energy Management	employee	Existing	407.26	3	\$2,090.97	0%	5%	\$0.07	1.46	1.61	AEG Research
Wastewater	Heating	Strategic Energy Management	employee	Existing	950.08	3	\$2,090.97	0%	5%	\$0.07	3.79	3.95	AEG Research
Wastewater	Ventilation	Strategic Energy Management	employee	Existing	29.36	3	\$2,090.97	0%	5%	\$0.07	0.58	0.70	AEG Research
Wastewater	Interior Lighting	Strategic Energy Management	employee	Existing	175.25	3	\$2,090.97	0%	5%	\$0.07	2.83	4.07	AEG Research
Wastewater	Exterior Lighting	Strategic Energy Management	employee	Existing	37.86	3	\$2,090.97	0%	5%	\$0.07	0.63	0.91	AEG Research
Wastewater	Motors	Strategic Energy Management	employee	Existing	5,610.81	3	\$2,090.97	0%	5%	\$0.07	108.74	116.86	AEG Research
Wastewater	Process	Strategic Energy Management	employee	Existing	319.89	3	\$2,090.97	0%	5%	\$0.07	6.46	6.52	AEG Research
Wastewater	Miscellaneous	Strategic Energy Management	employee	Existing	290.49	3	\$2,090.97	0%	5%	\$0.07	7.43	5.83	AEG Research
Wastewater	Interior Lighting	Commissioning	employee	Existing	202.00	3	\$3,714.02	0%	0%	\$0.14	0.00	0.00	AEG Research
Wastewater	Exterior Lighting	Commissioning	employee	Existing	43.63	3	\$3,714.02	0%	0%	\$0.14	0.00	0.00	AEG Research
Wastewater	Motors	Commissioning	employee	Existing	6,466.07	3	\$3,714.02	0%	0%	\$0.14	0.00	0.00	AEG Research
Wastewater	Process	Commissioning	employee	Existing	368.64	3	\$3,714.02	0%	0%	\$0.14	0.00	0.00	AEG Research
Wastewater	Miscellaneous	Commissioning	employee	Existing	334.71	3	\$3,714.02	0%	0%	\$0.14	0.00	0.00	AEG Research
Wastewater	Interior Lighting	Retrocommissioning	employee	Existing	203.96	3	\$2,357.73	5%	39%	\$0.09	22.56	32.18	AEG Research
Wastewater	Exterior Lighting	Retrocommissioning	employee	Existing	44.05	3	\$2,357.73	5%	39%	\$0.09	5.00	7.16	AEG Research
Wastewater	Motors	Retrocommissioning	employee	Existing	6,537.23	3	\$2,357.73	5%	39%	\$0.09	868.07	924.07	AEG Research
Wastewater	Process	Retrocommissioning	employee	Existing	372.84	3	\$2,357.73	5%	39%	\$0.09	51.58	51.58	AEG Research
Wastewater	Miscellaneous	Retrocommissioning	employee	Existing	338.89	3	\$2,357.73	5%	39%	\$0.09	59.35	46.12	AEG Research
Wastewater	Motors	Municipal Sewage Treatment	employee	Existing	925.20	12	\$546.52	15%	35%	\$0.05	76.33	82.86	7th Power Plan
Wastewater	Motors	Municipal Water Supply Treatment	employee	Existing	0.00	12	\$0.00	0%	0%	\$0.00	0.00	0.00	7th Power Plan

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Wastewater	Cooling	Insulation - Ceiling	sqft	New	0.17	45	\$1.28	15%	25%	\$0.12	2.34	2.35	Building Energy Simulation Tool
Wastewater	Heating	Insulation - Ceiling	sqft	New	0.40	45	\$1.28	15%	25%	\$0.12	5.76	5.74	Building Energy Simulation Tool
Wastewater	Ventilation	Insulation - Ceiling	sqft	New	0.01	45	\$1.28	15%	25%	\$0.12	0.71	0.78	Building Energy Simulation Tool
Wastewater	Cooling	Insulation - Ducting	sqft	New	0.07	20	\$0.84	15%	25%	\$0.66	0.91	0.92	Building Energy Simulation Tool
Wastewater	Heating	Insulation - Ducting	sqft	New	0.02	20	\$0.84	15%	25%	\$0.66	0.24	0.24	Building Energy Simulation Tool
Wastewater	Ventilation	Insulation - Ducting	sqft	New	0.00	20	\$0.84	15%	25%	\$0.66	0.03	0.03	Building Energy Simulation Tool
Wastewater	Cooling	Insulation - Wall Cavity	sqft	New	0.00	45	\$0.15	45%	50%	\$0.01	0.02	0.02	Building Energy Simulation Tool
Wastewater	Heating	Insulation - Wall Cavity	sqft	New	0.54	45	\$0.15	45%	50%	\$0.01	3.90	3.90	Building Energy Simulation Tool
Wastewater	Ventilation	Insulation - Wall Cavity	sqft	New	0.01	45	\$0.15	45%	50%	\$0.01	0.48	0.52	Building Energy Simulation Tool
Wastewater	Cooling	HVAC - Duct Repair and Sealing	sqft	New	0.02	18	\$0.00	15%	25%	\$0.00	0.29	0.30	Building Energy Simulation Tool
Wastewater	Heating	HVAC - Duct Repair and Sealing	sqft	New	0.04	18	\$0.00	15%	25%	\$0.00	0.54	0.54	Building Energy Simulation Tool
Wastewater	Ventilation	HVAC - Duct Repair and Sealing	sqft	New	0.00	18	\$0.00	15%	25%	\$0.00	0.07	0.07	Building Energy Simulation Tool
Wastewater	Cooling	Chiller - Chilled Water Reset	sqft	New	0.05	10	\$0.01	15%	45%	\$0.02	0.22	0.22	AEG-BEST
Wastewater	Cooling	Chiller - Chilled Water Variable-Flow System	sqft	New	0.30	15	\$0.50	15%	60%	\$0.13	2.30	2.35	AEG-BEST
Wastewater	Cooling	Chiller - Variable Speed Fans	sqft	New	0.11	15	\$0.03	15%	75%	\$0.02	1.13	1.16	New Jersey TRM
Wastewater	Cooling	HVAC - Economizer	sqft	New	0.32	10	\$0.25	18%	30%	\$0.08	1.02	1.06	AEG-BEST
Wastewater	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.25	15%	35%	\$8.97	0.12	0.15	7th Power Plan
Wastewater	Cooling	Destratification Fans (HVLS)	sqft	New	0.22	15	\$0.63	15%	50%	\$0.04	5.03	5.16	AEG Research
Wastewater	Heating	Destratification Fans (HVLS)	sqft	New	0.99	15	\$0.63	15%	50%	\$0.04	24.05	24.10	AEG Research
Wastewater	Cooling	RTU - Maintenance	sqft	New	0.12	3	\$0.07	15%	75%	\$0.16	0.35	0.37	AEG Research
Wastewater	Cooling	Thermostat - WiFi/Interactive	sqft	New	0.34	5	\$0.66	5%	15%	\$0.10	0.61	0.63	7th Power Plan

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Wastewater	Heating	Thermostat - WiFi/Interactive	sqft	New	0.79	5	\$0.66	5%	15%	\$0.10	1.50	1.50	7th Power Plan
Wastewater	Ventilation	Thermostat - WiFi/Interactive	sqft	New	0.02	5	\$0.66	5%	15%	\$0.10	0.18	0.22	7th Power Plan
Wastewater	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.33	15	\$0.35	22%	41%	\$0.06	46.95	54.93	7th Power Plan
Wastewater	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.44	15	\$0.58	22%	41%	\$0.06	63.60	74.81	7th Power Plan
Wastewater	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	New	0.02	15	\$0.00	1%	2%	\$0.01	0.06	0.07	7th Power Plan
Wastewater	Interior Lighting	Interior Lighting - Timeclocks and Timers	sqft	New	0.00	8	\$0.00	7%	7%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Wastewater	Interior Lighting	Interior Lighting - Skylights	sqft	New	0.00	15	\$1.01	18%	24%	\$0.00	0.00	0.00	AEG Research
Wastewater	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	sqft	New	0.03	16	\$1.81	5%	40%	\$2.85	2.50	3.22	7th Power Plan
Wastewater	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	New	0.03	11	\$0.00	15%	50%	\$0.01	1.94	2.52	Illinois TRM
Wastewater	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	sqft	New	0.04	8	\$0.03	15%	25%	\$0.07	1.79	2.50	7th Power Plan
Wastewater	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	New	0.02	8	\$0.02	44%	60%	\$0.07	1.53	2.13	Pacific Gas and Electric Research
Wastewater	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	New	0.02	7	\$1.19	15%	30%	\$3.69	1.55	2.18	AEG Research
Wastewater	Process	Process - Conductivity Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Wastewater	Process	Process - Timers and Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Wastewater	Motors	Process - Timers and Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Wastewater	Process	Refrigeration - Floating Head Pressure	employee	New	0.00	15	\$226.81	20%	50%	\$0.00	0.00	0.00	RTF Workbook
Wastewater	Process	Refrigeration - System Optimization	employee	New	0.00	15	\$79.31	20%	50%	\$0.00	0.00	0.00	AEG Research
Wastewater	Motors	Pumping System - Equipment Upgrade	employee	New	7,592.89	10	\$1,087.13	9%	38%	\$0.02	144.29	144.18	7th Power Plan
Wastewater	Motors	Pumping System - System Optimization	employee	New	5,607.28	12	\$1,656.79	9%	38%	\$0.03	175.87	174.55	UNIDO Study on Industrial Energy Efficiency

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Wastewater	Motors	Pumping System - Variable Speed Drive	employee	New	5,584.89	10	\$1,723.68	9%	38%	\$0.03	161.80	160.49	UNIDO Study on Industrial Energy Efficiency
Wastewater	Motors	Fan System - Equipment Upgrade	employee	New	10,348.93	10	\$1,009.43	9%	38%	\$0.01	297.59	297.46	UNIDO Study on Industrial Energy Efficiency
Wastewater	Motors	Fan System - Flow Optimization	employee	New	12,100.45	10	\$1,670.15	9%	38%	\$0.02	349.18	347.72	UNIDO Study on Industrial Energy Efficiency
Wastewater	Motors	Fan System - Variable Speed Drive	employee	New	18,232.06	10	\$8,404.11	9%	38%	\$0.05	528.95	523.91	UNIDO Study on Industrial Energy Efficiency
Wastewater	Motors	Compressed Air - Equipment Upgrade	employee	New	705.08	10	\$51.31	17%	50%	\$0.01	15.60	15.60	7th Power Plan
Wastewater	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	New	0.00	15	\$0.00	16%	38%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Wastewater	Motors	Compressed Air - Refrigerated Cycling Dryers	employee	New	0.00	10	\$0.00	16%	30%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Wastewater	Motors	Compressed Air - System Controls	employee	New	157.70	10	\$36.68	9%	38%	\$0.03	3.01	3.00	UNIDO Study on Industrial Energy Efficiency
Wastewater	Motors	Compressed Air - Leak Management Program	employee	New	402.72	10	\$36.88	18%	75%	\$0.01	15.28	15.27	7th Power Plan
Wastewater	Motors	Compressed Air - Variable Speed Drive	employee	New	288.96	15	\$224.90	26%	45%	\$0.06	4.78	4.74	UNIDO Study on Industrial Energy Efficiency
Wastewater	Motors	Compressed Air - Low Pressure-Drop Filters	employee	New	9.77	10	\$3.47	17%	50%	\$0.04	0.22	0.22	Illinois TRM
Wastewater	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	New	59.28	10	\$11.25	17%	50%	\$0.02	1.32	1.32	UNIDO Study on Industrial Energy Efficiency
Wastewater	Motors	Compressed Air - Outside Air Intake	employee	New	0.00	20	\$0.00	17%	50%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Wastewater	Motors	Compressed Air - Receiver Capacity Addition	employee	New	58.58	15	\$30.92	17%	50%	\$0.04	1.69	1.68	UNIDO Study on Industrial Energy Efficiency
Wastewater	Motors	Material Handling - Variable Speed Drive	employee	New	1,634.52	10	\$574.77	25%	45%	\$0.04	33.26	32.96	7th Power Plan
Wastewater	Motors	Motors - Green Rewind (<100 HP)	employee	New	255.14	10	\$107.75	10%	50%	\$0.05	51.93	51.45	7th Power Plan
Wastewater	Motors	Motors - Green Rewind (100 HP+)	employee	New	142.41	10	\$38.24	6%	25%	\$0.03	13.75	13.64	7th Power Plan
Wastewater	Motors	Switch from Belt Drive to Direct Drive	employee	New	2,151.67	12	\$472.96	16%	25%	\$0.02	112.36	111.64	2015-mdu-irp-report---volume-iii.pdf
Wastewater	Motors	Motors - Synchronous Belts	employee	New	572.38	10	\$142.28	16%	36%	\$0.03	38.24	38.12	7th Power Plan

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Wastewater	Miscellaneous	Agriculture - Engine Block Timer	employee	New	2,686.14	3	\$33.14	0%	0%	\$0.00	0.00	0.00	Vermont TRM
Wastewater	Motors	Agriculture - Live Stock Waterer	employee	New	18,286.97	10	\$9,574.14	0%	0%	\$0.06	0.00	0.00	Ontario Power TRM
Wastewater	Process	Dairy - Milk Precoolers	employee	New	0.00	15	\$1,021.23	0%	0%	\$0.00	0.00	0.00	Ontario Power TRM
Wastewater	Process	Clean Room: Change Filter Strategy	employee	New	0.00	15	\$13.00	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Wastewater	Process	Clean Room: Chiller Optimize	employee	New	0.00	15	\$60.47	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Wastewater	Process	Clean Room: Clean Room HVAC	employee	New	0.00	15	\$73.00	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Wastewater	Process	Elec Chip Fab: Solidstate Chiller	employee	New	0.00	15	\$229.28	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Wastewater	Process	Elec Chip Fab: Eliminate Exhaust	employee	New	0.00	15	\$46.77	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Wastewater	Process	Elec Chip Fab: Exhaust Injector	employee	New	0.00	15	\$225.59	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Wastewater	Process	Elec Chip Fab: Reduce Gas Pressure	employee	New	0.00	15	\$4.52	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Wastewater	Motors	Panel: Hydraulic Press	employee	New	2,465.45	10	\$574.43	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Wastewater	Motors	Wood: Replace Pneumatic Conveyor	employee	New	2,609.48	10	\$43.02	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Wastewater	Process	Metal: New Arc Furnace	employee	New	0.00	10	\$208.14	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Wastewater	Process	Paper: Premium Control Large Material	employee	New	1,396.45	10	\$698.59	0%	0%	\$0.06	0.00	0.00	7th Power Plan
Wastewater	Process	Paper: Efficient Pulp Screen	employee	New	1,118.51	10	\$230.12	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Wastewater	Process	Kraft: Effluent Treatment System	employee	New	1,118.51	10	\$94.34	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Wastewater	Motors	Kraft: Efficient Agitator	employee	New	4,497.09	10	\$428.66	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Wastewater	Process	Mech Pulp: Premium Process	employee	New	12.52	5	\$1.61	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Wastewater	Motors	Mech Pulp: Refiner Plate Improvement	employee	New	38.95	1	\$1.64	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Wastewater	Cooling	Transformer - High Efficiency	employee	New	134.42	10	\$337.09	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Wastewater	Heating	Transformer - High Efficiency	employee	New	323.82	10	\$337.09	15%	15%	\$0.01	0.00	0.00	7th Power Plan

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Wastewater	Ventilation	Transformer - High Efficiency	employee	New	6.32	10	\$337.09	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Wastewater	Interior Lighting	Transformer - High Efficiency	employee	New	48.57	10	\$337.09	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Wastewater	Exterior Lighting	Transformer - High Efficiency	employee	New	10.59	10	\$337.09	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Wastewater	Motors	Transformer - High Efficiency	employee	New	2,097.46	10	\$337.09	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Wastewater	Process	Transformer - High Efficiency	employee	New	111.85	10	\$337.09	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Wastewater	Miscellaneous	Transformer - High Efficiency	employee	New	96.30	10	\$337.09	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Wastewater	Cooling	Strategic Energy Management	employee	New	383.67	3	\$2,070.27	0%	5%	\$0.07	0.03	0.03	AEG Research
Wastewater	Heating	Strategic Energy Management	employee	New	931.23	3	\$2,070.27	0%	5%	\$0.07	0.08	0.08	AEG Research
Wastewater	Ventilation	Strategic Energy Management	employee	New	18.19	3	\$2,070.27	0%	5%	\$0.07	0.01	0.01	AEG Research
Wastewater	Interior Lighting	Strategic Energy Management	employee	New	140.31	3	\$2,070.27	0%	5%	\$0.07	0.06	0.09	AEG Research
Wastewater	Exterior Lighting	Strategic Energy Management	employee	New	30.59	3	\$2,070.27	0%	5%	\$0.07	0.01	0.02	AEG Research
Wastewater	Motors	Strategic Energy Management	employee	New	6,059.32	3	\$2,070.27	0%	5%	\$0.07	2.51	2.54	AEG Research
Wastewater	Process	Strategic Energy Management	employee	New	323.13	3	\$2,070.27	0%	5%	\$0.07	0.13	0.13	AEG Research
Wastewater	Miscellaneous	Strategic Energy Management	employee	New	278.20	3	\$2,070.27	0%	5%	\$0.07	0.14	0.09	AEG Research
Wastewater	Interior Lighting	Commissioning	employee	New	161.86	3	\$3,726.43	5%	39%	\$0.14	0.44	0.67	AEG Research
Wastewater	Exterior Lighting	Commissioning	employee	New	35.28	3	\$3,726.43	5%	39%	\$0.14	0.10	0.15	AEG Research
Wastewater	Motors	Commissioning	employee	New	6,990.02	3	\$3,726.43	5%	39%	\$0.14	19.67	19.91	AEG Research
Wastewater	Process	Commissioning	employee	New	372.76	3	\$3,726.43	5%	39%	\$0.14	1.04	1.04	AEG Research
Wastewater	Miscellaneous	Commissioning	employee	New	320.93	3	\$3,726.43	5%	39%	\$0.14	1.10	0.74	AEG Research
Wastewater	Interior Lighting	Retrocommissioning	employee	New	161.90	3	\$2,365.61	0%	0%	\$0.09	0.00	0.00	AEG Research

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Wastewater	Exterior Lighting	Retrocommissioning	employee	New	35.29	3	\$2,365.61	0%	0%	\$0.09	0.00	0.00	AEG Research
Wastewater	Motors	Retrocommissioning	employee	New	6,991.53	3	\$2,365.61	0%	0%	\$0.09	0.00	0.00	AEG Research
Wastewater	Process	Retrocommissioning	employee	New	372.84	3	\$2,365.61	0%	0%	\$0.09	0.00	0.00	AEG Research
Wastewater	Miscellaneous	Retrocommissioning	employee	New	321.00	3	\$2,365.61	0%	0%	\$0.09	0.00	0.00	AEG Research
Wastewater	Motors	Municipal Sewage Treatment	employee	New	988.68	12	\$546.52	15%	35%	\$0.05	21.88	21.59	7th Power Plan
Wastewater	Motors	Municipal Water Supply Treatment	employee	New	0.00	12	\$0.00	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Water	Cooling	Insulation - Ceiling	sqft	Existing	0.18	45	\$1.28	15%	25%	\$0.11	8.67	9.53	Building Energy Simulation Tool
Water	Heating	Insulation - Ceiling	sqft	Existing	0.40	45	\$1.28	15%	25%	\$0.11	21.64	22.48	Building Energy Simulation Tool
Water	Ventilation	Insulation - Ceiling	sqft	Existing	0.01	45	\$1.28	15%	25%	\$0.11	3.33	4.00	Building Energy Simulation Tool
Water	Cooling	Insulation - Ducting	sqft	Existing	0.07	20	\$0.84	15%	25%	\$0.62	3.35	3.70	Building Energy Simulation Tool
Water	Heating	Insulation - Ducting	sqft	Existing	0.02	20	\$0.84	15%	25%	\$0.62	0.91	0.95	Building Energy Simulation Tool
Water	Ventilation	Insulation - Ducting	sqft	Existing	0.00	20	\$0.84	15%	25%	\$0.62	0.14	0.17	Building Energy Simulation Tool
Water	Cooling	Insulation - Wall Cavity	sqft	Existing	0.00	45	\$0.15	45%	50%	\$0.01	0.07	0.08	Building Energy Simulation Tool
Water	Heating	Insulation - Wall Cavity	sqft	Existing	0.58	45	\$0.15	45%	50%	\$0.01	15.80	15.83	Building Energy Simulation Tool
Water	Ventilation	Insulation - Wall Cavity	sqft	Existing	0.02	45	\$0.15	45%	50%	\$0.01	2.26	2.69	Building Energy Simulation Tool
Water	Cooling	HVAC - Duct Repair and Sealing	sqft	Existing	0.02	18	\$0.00	15%	25%	\$0.00	1.23	1.29	Building Energy Simulation Tool
Water	Heating	HVAC - Duct Repair and Sealing	sqft	Existing	0.04	18	\$0.00	15%	25%	\$0.00	2.23	2.23	Building Energy Simulation Tool
Water	Ventilation	HVAC - Duct Repair and Sealing	sqft	Existing	0.00	18	\$0.00	15%	25%	\$0.00	0.32	0.38	Building Energy Simulation Tool
Water	Cooling	Chiller - Chilled Water Reset	sqft	Existing	0.07	10	\$0.01	15%	45%	\$0.02	2.83	3.06	AEG-BEST
Water	Cooling	Chiller - Chilled Water Variable-Flow System	sqft	Existing	0.36	15	\$0.50	15%	60%	\$0.11	22.21	24.86	AEG-BEST

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Water	Cooling	Chiller - Variable Speed Fans	sqft	Existing	0.14	15	\$0.03	15%	75%	\$0.02	11.42	12.37	New Jersey TRM
Water	Cooling	HVAC - Economizer	sqft	Existing	0.51	10	\$0.25	18%	30%	\$0.05	12.44	13.44	AEG-BEST
Water	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.25	15%	35%	\$7.50	1.30	1.67	7th Power Plan
Water	Cooling	Destratification Fans (HVLS)	sqft	Existing	0.24	15	\$0.63	15%	50%	\$0.04	45.23	49.18	AEG Research
Water	Heating	Destratification Fans (HVLS)	sqft	Existing	1.05	15	\$0.63	15%	50%	\$0.04	216.70	218.23	AEG Research
Water	Cooling	RTU - Maintenance	sqft	Existing	0.12	3	\$0.07	15%	75%	\$0.15	25.59	28.90	AEG Research
Water	Cooling	Thermostat - WiFi/Interactive	sqft	Existing	0.36	5	\$0.66	5%	15%	\$0.10	17.56	19.12	7th Power Plan
Water	Heating	Thermostat - WiFi/Interactive	sqft	Existing	0.81	5	\$0.66	5%	15%	\$0.10	43.79	45.13	7th Power Plan
Water	Ventilation	Thermostat - WiFi/Interactive	sqft	Existing	0.03	5	\$0.66	5%	15%	\$0.10	6.73	8.04	7th Power Plan
Water	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.57	15	\$0.35	7%	33%	\$0.04	130.55	164.91	7th Power Plan
Water	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.77	15	\$0.58	7%	33%	\$0.05	173.19	225.59	7th Power Plan
Water	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	Existing	0.02	15	\$0.00	1%	2%	\$0.01	0.66	0.96	7th Power Plan
Water	Interior Lighting	Interior Lighting - Timeclocks and Timers	sqft	Existing	0.00	8	\$0.00	7%	7%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Water	Interior Lighting	Interior Lighting - Skylights	sqft	Existing	0.00	15	\$1.01	15%	23%	\$0.00	0.00	0.00	AEG Research
Water	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	sqft	Existing	0.04	16	\$1.81	5%	40%	\$2.85	20.90	33.96	7th Power Plan
Water	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	Existing	0.04	11	\$0.00	15%	50%	\$0.01	21.80	31.16	Illinois TRM
Water	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	sqft	Existing	0.05	8	\$0.03	15%	25%	\$0.07	26.25	40.47	7th Power Plan
Water	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	Existing	0.03	8	\$0.02	33%	60%	\$0.07	36.44	57.84	Pacific Gas and Electric Research
Water	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	Existing	0.03	7	\$1.19	15%	30%	\$3.70	22.72	38.23	AEG Research
Water	Process	Process - Conductivity Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A

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Water	Process	Process - Timers and Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Water	Motors	Process - Timers and Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Water	Process	Refrigeration - Floating Head Pressure	employee	Existing	0.00	15	\$101.10	20%	50%	\$0.00	0.00	0.00	RTF Workbook
Water	Process	Refrigeration - System Optimization	employee	Existing	0.00	15	\$71.19	20%	50%	\$0.00	0.00	0.00	AEG Research
Water	Motors	Pumping System - Equipment Upgrade	employee	Existing	8,680.76	10	\$1,237.15	9%	38%	\$0.02	5,747.74	5,758.98	7th Power Plan
Water	Motors	Pumping System - System Optimization	employee	Existing	6,145.54	12	\$1,885.41	9%	38%	\$0.03	3,902.48	4,044.04	UNIDO Study on Industrial Energy Efficiency
Water	Motors	Pumping System - Variable Speed Drive	employee	Existing	5,950.43	10	\$1,961.53	9%	38%	\$0.03	3,731.03	3,965.61	UNIDO Study on Industrial Energy Efficiency
Water	Motors	Fan System - Equipment Upgrade	employee	Existing	0.00	10	\$14.88	9%	38%	\$0.00	0.00	0.00	UNIDO Study on Industrial Energy Efficiency
Water	Motors	Fan System - Flow Optimization	employee	Existing	0.00	10	\$24.62	9%	38%	\$0.00	0.00	0.00	UNIDO Study on Industrial Energy Efficiency
Water	Motors	Fan System - Variable Speed Drive	employee	Existing	0.00	10	\$123.88	9%	38%	\$0.00	0.00	0.00	UNIDO Study on Industrial Energy Efficiency
Water	Motors	Compressed Air - Equipment Upgrade	employee	Existing	222.11	10	\$16.16	17%	50%	\$0.01	171.69	171.69	7th Power Plan
Water	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	Existing	0.00	15	\$0.00	16%	38%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Water	Motors	Compressed Air - Refrigerated Cycling Dryers	employee	Existing	0.00	10	\$0.00	16%	30%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Water	Motors	Compressed Air - System Controls	employee	Existing	47.97	10	\$11.56	9%	38%	\$0.03	31.31	32.64	UNIDO Study on Industrial Energy Efficiency
Water	Motors	Compressed Air - Leak Management Program	employee	Existing	126.74	10	\$11.62	18%	75%	\$0.01	167.89	168.06	7th Power Plan
Water	Motors	Compressed Air - Variable Speed Drive	employee	Existing	83.75	15	\$70.85	26%	45%	\$0.06	35.44	39.53	UNIDO Study on Industrial Energy Efficiency
Water	Motors	Compressed Air - Low Pressure-Drop Filters	employee	Existing	2.80	10	\$1.09	17%	50%	\$0.04	2.08	2.31	Illinois TRM
Water	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	Existing	18.09	10	\$3.54	17%	50%	\$0.02	13.80	14.32	UNIDO Study on Industrial Energy Efficiency
Water	Motors	Compressed Air - Outside Air Intake	employee	Existing	0.00	20	\$0.00	17%	50%	\$0.00	0.00	0.00	Michigan Energy Measures Database

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Water	Motors	Compressed Air - Receiver Capacity Addition	employee	Existing	16.80	15	\$9.74	17%	50%	\$0.04	12.45	13.85	UNIDO Study on Industrial Energy Efficiency
Water	Motors	Material Handling - Variable Speed Drive	employee	Existing	312.39	10	\$120.62	25%	45%	\$0.04	135.72	147.89	7th Power Plan
Water	Motors	Motors - Green Rewind (<100 HP)	employee	Existing	91.45	10	\$42.43	10%	50%	\$0.05	317.69	346.53	7th Power Plan
Water	Motors	Motors - Green Rewind (100 HP+)	employee	Existing	52.52	10	\$15.06	6%	25%	\$0.03	87.85	93.32	7th Power Plan
Water	Motors	Switch from Belt Drive to Direct Drive	employee	Existing	820.65	12	\$186.23	16%	25%	\$0.02	696.96	717.65	2015-mdu-irp-report---volume-iii.pdf
Water	Motors	Motors - Synchronous Belts	employee	Existing	217.58	10	\$56.03	16%	36%	\$0.03	397.58	414.63	7th Power Plan
Water	Miscellaneous	Agriculture - Engine Block Timer	employee	Existing	846.17	3	\$10.44	0%	0%	\$0.00	0.00	0.00	Vermont TRM
Water	Motors	Agriculture - Live Stock Waterer	employee	Existing	19,147.97	10	\$10,895.26	0%	0%	\$0.06	0.00	0.00	Ontario Power TRM
Water	Process	Dairy - Milk Precoolers	employee	Existing	0.00	15	\$321.70	0%	0%	\$0.00	0.00	0.00	Ontario Power TRM
Water	Process	Clean Room: Change Filter Strategy	employee	Existing	0.00	15	\$4.09	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Water	Process	Clean Room: Chiller Optimize	employee	Existing	0.00	15	\$19.05	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Water	Process	Clean Room: Clean Room HVAC	employee	Existing	0.00	15	\$22.99	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Water	Process	Elec Chip Fab: Solidstate Chiller	employee	Existing	0.00	15	\$72.23	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Water	Process	Elec Chip Fab: Eliminate Exhaust	employee	Existing	0.00	15	\$14.73	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Water	Process	Elec Chip Fab: Exhaust Injector	employee	Existing	0.00	15	\$71.07	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Water	Process	Elec Chip Fab: Reduce Gas Pressure	employee	Existing	0.00	15	\$1.43	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Water	Motors	Panel: Hydraulic Press	employee	Existing	499.56	10	\$120.55	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Water	Motors	Wood: Replace Pneumatic Conveyor	employee	Existing	547.61	10	\$9.03	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Water	Process	Metal: New Arc Furnace	employee	Existing	0.00	10	\$65.57	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Water	Process	Paper: Premium Control Large Material	employee	Existing	439.90	10	\$220.06	0%	0%	\$0.06	0.00	0.00	7th Power Plan
Water	Process	Paper: Efficient Pulp Screen	employee	Existing	352.35	10	\$72.49	0%	0%	\$0.02	0.00	0.00	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Water	Process	Kraft: Effluent Treatment System	employee	Existing	352.35	10	\$29.72	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Water	Motors	Kraft: Efficient Agitator	employee	Existing	941.53	10	\$89.96	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Water	Process	Mech Pulp: Premium Process	employee	Existing	3.94	5	\$0.51	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Water	Motors	Mech Pulp: Refiner Plate Improvement	employee	Existing	7.45	1	\$0.34	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Water	Cooling	Transformer - High Efficiency	employee	Existing	46.51	10	\$107.25	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Water	Heating	Transformer - High Efficiency	employee	Existing	104.94	10	\$107.25	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Water	Ventilation	Transformer - High Efficiency	employee	Existing	3.24	10	\$107.25	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Water	Interior Lighting	Transformer - High Efficiency	employee	Existing	19.28	10	\$107.25	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Water	Exterior Lighting	Transformer - High Efficiency	employee	Existing	4.16	10	\$107.25	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Water	Motors	Transformer - High Efficiency	employee	Existing	607.81	10	\$107.25	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Water	Process	Transformer - High Efficiency	employee	Existing	35.23	10	\$107.25	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Water	Miscellaneous	Transformer - High Efficiency	employee	Existing	32.03	10	\$107.25	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Water	Cooling	Strategic Energy Management	employee	Existing	128.29	3	\$658.68	0%	5%	\$0.07	2.42	2.67	AEG Research
Water	Heating	Strategic Energy Management	employee	Existing	299.29	3	\$658.68	0%	5%	\$0.07	6.29	6.56	AEG Research
Water	Ventilation	Strategic Energy Management	employee	Existing	9.25	3	\$658.68	0%	5%	\$0.07	0.97	1.17	AEG Research
Water	Interior Lighting	Strategic Energy Management	employee	Existing	55.21	3	\$658.68	0%	5%	\$0.07	4.69	6.76	AEG Research
Water	Exterior Lighting	Strategic Energy Management	employee	Existing	11.92	3	\$658.68	0%	5%	\$0.07	1.04	1.50	AEG Research
Water	Motors	Strategic Energy Management	employee	Existing	1,738.97	3	\$658.68	0%	5%	\$0.07	177.27	191.51	AEG Research
Water	Process	Strategic Energy Management	employee	Existing	100.77	3	\$658.68	0%	5%	\$0.07	10.73	10.83	AEG Research

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Water	Miscellaneous	Strategic Energy Management	employee	Existing	91.51	3	\$658.68	0%	5%	\$0.07	12.35	9.68	AEG Research
Water	Interior Lighting	Commissioning	employee	Existing	63.63	3	\$1,169.96	0%	0%	\$0.14	0.00	0.00	AEG Research
Water	Exterior Lighting	Commissioning	employee	Existing	13.74	3	\$1,169.96	0%	0%	\$0.14	0.00	0.00	AEG Research
Water	Motors	Commissioning	employee	Existing	2,004.04	3	\$1,169.96	0%	0%	\$0.14	0.00	0.00	AEG Research
Water	Process	Commissioning	employee	Existing	116.13	3	\$1,169.96	0%	0%	\$0.14	0.00	0.00	AEG Research
Water	Miscellaneous	Commissioning	employee	Existing	105.44	3	\$1,169.96	0%	0%	\$0.14	0.00	0.00	AEG Research
Water	Interior Lighting	Retrocommissioning	employee	Existing	64.25	3	\$742.71	5%	39%	\$0.09	37.47	53.44	AEG Research
Water	Exterior Lighting	Retrocommissioning	employee	Existing	13.88	3	\$742.71	5%	39%	\$0.09	8.30	11.89	AEG Research
Water	Motors	Retrocommissioning	employee	Existing	2,026.04	3	\$742.71	5%	39%	\$0.09	1,415.13	1,514.34	AEG Research
Water	Process	Retrocommissioning	employee	Existing	117.45	3	\$742.71	5%	39%	\$0.09	85.65	85.65	AEG Research
Water	Miscellaneous	Retrocommissioning	employee	Existing	106.75	3	\$742.71	5%	39%	\$0.09	98.56	76.60	AEG Research
Water	Motors	Municipal Sewage Treatment	employee	Existing	1,034.75	12	\$621.94	0%	0%	\$0.05	0.00	0.00	7th Power Plan
Water	Motors	Municipal Water Supply Treatment	employee	Existing	0.00	12	\$0.00	15%	35%	\$0.00	0.00	0.00	7th Power Plan
Water	Cooling	Insulation - Ceiling	sqft	New	0.17	45	\$1.28	15%	25%	\$0.12	3.86	3.89	Building Energy Simulation Tool
Water	Heating	Insulation - Ceiling	sqft	New	0.40	45	\$1.28	15%	25%	\$0.12	9.52	9.49	Building Energy Simulation Tool
Water	Ventilation	Insulation - Ceiling	sqft	New	0.01	45	\$1.28	15%	25%	\$0.12	1.18	1.29	Building Energy Simulation Tool
Water	Cooling	Insulation - Ducting	sqft	New	0.07	20	\$0.84	15%	25%	\$0.66	1.50	1.51	Building Energy Simulation Tool
Water	Heating	Insulation - Ducting	sqft	New	0.02	20	\$0.84	15%	25%	\$0.66	0.40	0.40	Building Energy Simulation Tool
Water	Ventilation	Insulation - Ducting	sqft	New	0.00	20	\$0.84	15%	25%	\$0.66	0.05	0.05	Building Energy Simulation Tool
Water	Cooling	Insulation - Wall Cavity	sqft	New	0.00	45	\$0.15	45%	50%	\$0.01	0.03	0.03	Building Energy Simulation Tool
Water	Heating	Insulation - Wall Cavity	sqft	New	0.54	45	\$0.15	45%	50%	\$0.01	6.45	6.45	Building Energy Simulation Tool
Water	Ventilation	Insulation - Wall Cavity	sqft	New	0.01	45	\$0.15	45%	50%	\$0.01	0.79	0.86	Building Energy Simulation Tool

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Water	Cooling	HVAC - Duct Repair and Sealing	sqft	New	0.02	18	\$0.00	15%	25%	\$0.00	0.48	0.49	Building Energy Simulation Tool
Water	Heating	HVAC - Duct Repair and Sealing	sqft	New	0.04	18	\$0.00	15%	25%	\$0.00	0.89	0.89	Building Energy Simulation Tool
Water	Ventilation	HVAC - Duct Repair and Sealing	sqft	New	0.00	18	\$0.00	15%	25%	\$0.00	0.11	0.12	Building Energy Simulation Tool
Water	Cooling	Chiller - Chilled Water Reset	sqft	New	0.05	10	\$0.01	15%	45%	\$0.02	0.36	0.37	AEG-BEST
Water	Cooling	Chiller - Chilled Water Variable-Flow System	sqft	New	0.30	15	\$0.50	15%	60%	\$0.13	3.78	3.87	AEG-BEST
Water	Cooling	Chiller - Variable Speed Fans	sqft	New	0.11	15	\$0.03	15%	75%	\$0.02	1.86	1.91	New Jersey TRM
Water	Cooling	HVAC - Economizer	sqft	New	0.45	10	\$0.25	18%	30%	\$0.06	1.69	1.74	AEG-BEST
Water	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.25	15%	35%	\$8.97	0.20	0.24	7th Power Plan
Water	Cooling	Destratification Fans (HVLS)	sqft	New	0.22	15	\$0.63	15%	50%	\$0.04	8.28	8.50	AEG Research
Water	Heating	Destratification Fans (HVLS)	sqft	New	0.99	15	\$0.63	15%	50%	\$0.04	39.65	39.73	AEG Research
Water	Cooling	RTU - Maintenance	sqft	New	0.12	3	\$0.07	15%	75%	\$0.16	0.56	0.60	AEG Research
Water	Cooling	Thermostat - WiFi/Interactive	sqft	New	0.34	5	\$0.66	5%	15%	\$0.10	1.01	1.04	7th Power Plan
Water	Heating	Thermostat - WiFi/Interactive	sqft	New	0.79	5	\$0.66	5%	15%	\$0.10	2.48	2.48	7th Power Plan
Water	Ventilation	Thermostat - WiFi/Interactive	sqft	New	0.02	5	\$0.66	5%	15%	\$0.10	0.31	0.37	7th Power Plan
Water	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.45	15	\$0.35	22%	41%	\$0.04	77.72	90.84	7th Power Plan
Water	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.62	15	\$0.58	22%	41%	\$0.05	105.29	123.73	7th Power Plan
Water	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	New	0.02	15	\$0.00	1%	2%	\$0.01	0.09	0.12	7th Power Plan
Water	Interior Lighting	Interior Lighting - Timeclocks and Timers	sqft	New	0.00	8	\$0.00	7%	7%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Water	Interior Lighting	Interior Lighting - Skylights	sqft	New	0.00	15	\$1.01	18%	24%	\$0.00	0.00	0.00	AEG Research
Water	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	sqft	New	0.03	16	\$1.81	5%	40%	\$2.85	4.11	5.29	7th Power Plan

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Water	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	New	0.03	11	\$0.00	15%	50%	\$0.01	3.20	4.15	Illinois TRM
Water	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	sqft	New	0.04	8	\$0.03	15%	25%	\$0.07	2.95	4.11	7th Power Plan
Water	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	New	0.02	8	\$0.02	44%	60%	\$0.07	2.52	3.49	Pacific Gas and Electric Research
Water	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	New	0.02	7	\$1.19	15%	30%	\$3.69	2.56	3.58	AEG Research
Water	Process	Process - Conductivity Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Water	Process	Process - Timers and Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Water	Motors	Process - Timers and Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Water	Process	Refrigeration - Floating Head Pressure	employee	New	0.00	15	\$71.45	20%	50%	\$0.00	0.00	0.00	RTF Workbook
Water	Process	Refrigeration - System Optimization	employee	New	0.00	15	\$24.98	20%	50%	\$0.00	0.00	0.00	AEG Research
Water	Motors	Pumping System - Equipment Upgrade	employee	New	8,697.30	10	\$1,237.15	9%	38%	\$0.02	864.54	864.22	7th Power Plan
Water	Motors	Pumping System - System Optimization	employee	New	6,402.65	12	\$1,885.41	9%	38%	\$0.03	1,053.43	1,044.11	UNIDO Study on Industrial Energy Efficiency
Water	Motors	Pumping System - Variable Speed Drive	employee	New	6,315.58	10	\$1,961.53	9%	38%	\$0.03	962.37	951.10	UNIDO Study on Industrial Energy Efficiency
Water	Motors	Fan System - Equipment Upgrade	employee	New	0.00	10	\$14.88	9%	38%	\$0.00	0.00	0.00	UNIDO Study on Industrial Energy Efficiency
Water	Motors	Fan System - Flow Optimization	employee	New	0.00	10	\$24.62	9%	38%	\$0.00	0.00	0.00	UNIDO Study on Industrial Energy Efficiency
Water	Motors	Fan System - Variable Speed Drive	employee	New	0.00	10	\$123.88	9%	38%	\$0.00	0.00	0.00	UNIDO Study on Industrial Energy Efficiency
Water	Motors	Compressed Air - Equipment Upgrade	employee	New	222.11	10	\$16.16	17%	50%	\$0.01	25.75	25.75	7th Power Plan
Water	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	New	0.00	15	\$0.00	16%	38%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Water	Motors	Compressed Air - Refrigerated Cycling Dryers	employee	New	0.00	10	\$0.00	16%	30%	\$0.00	0.00	0.00	Michigan Energy Measures Database

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Water	Motors	Compressed Air - System Controls	employee	New	49.85	10	\$11.56	9%	38%	\$0.03	4.99	4.96	UNIDO Study on Industrial Energy Efficiency
Water	Motors	Compressed Air - Leak Management Program	employee	New	126.86	10	\$11.62	18%	75%	\$0.01	25.22	25.21	7th Power Plan
Water	Motors	Compressed Air - Variable Speed Drive	employee	New	90.74	15	\$70.85	26%	45%	\$0.06	7.87	7.78	UNIDO Study on Industrial Energy Efficiency
Water	Motors	Compressed Air - Low Pressure-Drop Filters	employee	New	3.03	10	\$1.09	17%	50%	\$0.04	0.36	0.35	Illinois TRM
Water	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	New	18.74	10	\$3.54	17%	50%	\$0.02	2.19	2.17	UNIDO Study on Industrial Energy Efficiency
Water	Motors	Compressed Air - Outside Air Intake	employee	New	0.00	20	\$0.00	17%	50%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Water	Motors	Compressed Air - Receiver Capacity Addition	employee	New	18.17	15	\$9.74	17%	50%	\$0.04	2.76	2.73	UNIDO Study on Industrial Energy Efficiency
Water	Motors	Material Handling - Variable Speed Drive	employee	New	337.66	10	\$120.62	25%	45%	\$0.04	36.23	35.68	7th Power Plan
Water	Motors	Motors - Green Rewind (<100 HP)	employee	New	98.92	10	\$42.43	10%	50%	\$0.05	84.92	83.63	7th Power Plan
Water	Motors	Motors - Green Rewind (100 HP+)	employee	New	55.72	10	\$15.06	6%	25%	\$0.03	22.64	22.38	7th Power Plan
Water	Motors	Switch from Belt Drive to Direct Drive	employee	New	850.12	12	\$186.23	16%	25%	\$0.02	186.30	184.86	2015-mdi-irp-report---volume-iii.pdf
Water	Motors	Motors - Synchronous Belts	employee	New	226.15	10	\$56.03	16%	36%	\$0.03	63.39	62.96	7th Power Plan
Water	Miscellaneous	Agriculture - Engine Block Timer	employee	New	846.17	3	\$10.44	0%	0%	\$0.00	0.00	0.00	Vermont TRM
Water	Motors	Agriculture - Live Stock Waterer	employee	New	20,744.79	10	\$10,895.26	0%	0%	\$0.06	0.00	0.00	Ontario Power TRM
Water	Process	Dairy - Milk Precoolers	employee	New	0.00	15	\$321.70	0%	0%	\$0.00	0.00	0.00	Ontario Power TRM
Water	Process	Clean Room: Change Filter Strategy	employee	New	0.00	15	\$4.09	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Water	Process	Clean Room: Chiller Optimize	employee	New	0.00	15	\$19.05	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Water	Process	Clean Room: Clean Room HVAC	employee	New	0.00	15	\$22.99	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Water	Process	Elec Chip Fab: Solidstate Chiller	employee	New	0.00	15	\$72.23	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Water	Process	Elec Chip Fab: Eliminate Exhaust	employee	New	0.00	15	\$14.73	0%	0%	\$0.00	0.00	0.00	7th Power Plan

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Water	Process	Elec Chip Fab: Exhaust Injector	employee	New	0.00	15	\$71.07	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Water	Process	Elec Chip Fab: Reduce Gas Pressure	employee	New	0.00	15	\$1.43	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Water	Motors	Panel: Hydraulic Press	employee	New	519.09	10	\$120.55	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Water	Motors	Wood: Replace Pneumatic Conveyor	employee	New	547.61	10	\$9.03	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Water	Process	Metal: New Arc Furnace	employee	New	0.00	10	\$65.57	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Water	Process	Paper: Premium Control Large Material	employee	New	439.90	10	\$220.06	0%	0%	\$0.06	0.00	0.00	7th Power Plan
Water	Process	Paper: Efficient Pulp Screen	employee	New	352.35	10	\$72.49	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Water	Process	Kraft: Effluent Treatment System	employee	New	352.35	10	\$29.72	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Water	Motors	Kraft: Efficient Agitator	employee	New	943.32	10	\$89.96	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Water	Process	Mech Pulp: Premium Process	employee	New	3.94	5	\$0.51	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Water	Motors	Mech Pulp: Refiner Plate Improvement	employee	New	8.05	1	\$0.34	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Water	Cooling	Transformer - High Efficiency	employee	New	42.32	10	\$106.19	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Water	Heating	Transformer - High Efficiency	employee	New	102.02	10	\$106.19	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Water	Ventilation	Transformer - High Efficiency	employee	New	1.98	10	\$106.19	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Water	Interior Lighting	Transformer - High Efficiency	employee	New	15.23	10	\$106.19	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Water	Exterior Lighting	Transformer - High Efficiency	employee	New	3.32	10	\$106.19	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Water	Motors	Transformer - High Efficiency	employee	New	658.64	10	\$106.19	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Water	Process	Transformer - High Efficiency	employee	New	35.23	10	\$106.19	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Water	Miscellaneous	Transformer - High Efficiency	employee	New	30.34	10	\$106.19	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Water	Cooling	Strategic Energy Management	employee	New	120.78	3	\$652.16	0%	5%	\$0.07	0.05	0.05	AEG Research
Water	Heating	Strategic Energy Management	employee	New	293.38	3	\$652.16	0%	5%	\$0.07	0.13	0.13	AEG Research

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Water	Ventilation	Strategic Energy Management	employee	New	5.70	3	\$652.16	0%	5%	\$0.07	0.02	0.02	AEG Research
Water	Interior Lighting	Strategic Energy Management	employee	New	44.00	3	\$652.16	0%	5%	\$0.07	0.09	0.14	AEG Research
Water	Exterior Lighting	Strategic Energy Management	employee	New	9.58	3	\$652.16	0%	5%	\$0.07	0.02	0.03	AEG Research
Water	Motors	Strategic Energy Management	employee	New	1,902.75	3	\$652.16	0%	5%	\$0.07	4.16	4.19	AEG Research
Water	Process	Strategic Energy Management	employee	New	101.79	3	\$652.16	0%	5%	\$0.07	0.22	0.22	AEG Research
Water	Miscellaneous	Strategic Energy Management	employee	New	87.64	3	\$652.16	0%	5%	\$0.07	0.23	0.16	AEG Research
Water	Interior Lighting	Commissioning	employee	New	50.76	3	\$1,173.87	5%	39%	\$0.14	0.73	1.11	AEG Research
Water	Exterior Lighting	Commissioning	employee	New	11.05	3	\$1,173.87	5%	39%	\$0.14	0.17	0.26	AEG Research
Water	Motors	Commissioning	employee	New	2,195.00	3	\$1,173.87	5%	39%	\$0.14	32.61	32.87	AEG Research
Water	Process	Commissioning	employee	New	117.42	3	\$1,173.87	5%	39%	\$0.14	1.72	1.72	AEG Research
Water	Miscellaneous	Commissioning	employee	New	101.10	3	\$1,173.87	5%	39%	\$0.14	1.83	1.24	AEG Research
Water	Interior Lighting	Retrocommissioning	employee	New	50.77	3	\$745.20	0%	0%	\$0.09	0.00	0.00	AEG Research
Water	Exterior Lighting	Retrocommissioning	employee	New	11.05	3	\$745.20	0%	0%	\$0.09	0.00	0.00	AEG Research
Water	Motors	Retrocommissioning	employee	New	2,195.48	3	\$745.20	0%	0%	\$0.09	0.00	0.00	AEG Research
Water	Process	Retrocommissioning	employee	New	117.45	3	\$745.20	0%	0%	\$0.09	0.00	0.00	AEG Research
Water	Miscellaneous	Retrocommissioning	employee	New	101.12	3	\$745.20	0%	0%	\$0.09	0.00	0.00	AEG Research
Water	Motors	Municipal Sewage Treatment	employee	New	1,121.04	12	\$621.94	0%	0%	\$0.05	0.00	0.00	7th Power Plan
Water	Motors	Municipal Water Supply Treatment	employee	New	0.00	12	\$0.00	15%	35%	\$0.00	0.00	0.00	7th Power Plan
Chemical Mfg	Cooling	Insulation - Ceiling	sqft	Existing	0.18	45	\$1.28	15%	25%	\$0.11	40.82	44.82	Building Energy Simulation Tool
Chemical Mfg	Heating	Insulation - Ceiling	sqft	Existing	0.40	45	\$1.28	15%	25%	\$0.11	101.83	105.78	Building Energy Simulation Tool
Chemical Mfg	Ventilation	Insulation - Ceiling	sqft	Existing	0.01	45	\$1.28	15%	25%	\$0.11	15.65	18.84	Building Energy Simulation Tool
Chemical Mfg	Cooling	Insulation - Ducting	sqft	Existing	0.07	20	\$0.84	15%	25%	\$0.62	15.76	17.40	Building Energy Simulation Tool

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Chemical Mfg	Heating	Insulation - Ducting	sqft	Existing	0.02	20	\$0.84	15%	25%	\$0.62	4.27	4.45	Building Energy Simulation Tool
Chemical Mfg	Ventilation	Insulation - Ducting	sqft	Existing	0.00	20	\$0.84	15%	25%	\$0.62	0.66	0.79	Building Energy Simulation Tool
Chemical Mfg	Cooling	Insulation - Wall Cavity	sqft	Existing	0.00	45	\$0.15	45%	50%	\$0.01	0.34	0.36	Building Energy Simulation Tool
Chemical Mfg	Heating	Insulation - Wall Cavity	sqft	Existing	0.58	45	\$0.15	45%	50%	\$0.01	74.35	74.51	Building Energy Simulation Tool
Chemical Mfg	Ventilation	Insulation - Wall Cavity	sqft	Existing	0.02	45	\$0.15	45%	50%	\$0.01	10.64	12.67	Building Energy Simulation Tool
Chemical Mfg	Cooling	HVAC - Duct Repair and Sealing	sqft	Existing	0.02	18	\$0.00	15%	25%	\$0.00	5.77	6.06	Building Energy Simulation Tool
Chemical Mfg	Heating	HVAC - Duct Repair and Sealing	sqft	Existing	0.04	18	\$0.00	15%	25%	\$0.00	10.48	10.50	Building Energy Simulation Tool
Chemical Mfg	Ventilation	HVAC - Duct Repair and Sealing	sqft	Existing	0.00	18	\$0.00	15%	25%	\$0.00	1.50	1.79	Building Energy Simulation Tool
Chemical Mfg	Cooling	Chiller - Chilled Water Reset	sqft	Existing	0.07	10	\$0.01	15%	45%	\$0.02	13.31	14.40	AEG-BEST
Chemical Mfg	Cooling	Chiller - Chilled Water Variable-Flow System	sqft	Existing	0.36	15	\$0.50	15%	60%	\$0.11	104.53	117.00	AEG-BEST
Chemical Mfg	Cooling	Chiller - Variable Speed Fans	sqft	Existing	0.14	15	\$0.03	15%	75%	\$0.02	53.72	58.21	New Jersey TRM
Chemical Mfg	Cooling	HVAC - Economizer	sqft	Existing	1.03	10	\$0.25	18%	30%	\$0.03	58.52	63.26	AEG-BEST
Chemical Mfg	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.25	15%	35%	\$7.50	6.10	7.88	7th Power Plan
Chemical Mfg	Cooling	Destratification Fans (HVLS)	sqft	Existing	0.24	15	\$0.63	15%	50%	\$0.04	212.83	231.41	AEG Research
Chemical Mfg	Heating	Destratification Fans (HVLS)	sqft	Existing	1.05	15	\$0.63	15%	50%	\$0.04	1,019.74	1,026.92	AEG Research
Chemical Mfg	Cooling	RTU - Maintenance	sqft	Existing	0.12	3	\$0.07	15%	75%	\$0.15	120.44	136.02	AEG Research
Chemical Mfg	Cooling	Thermostat - WiFi/Interactive	sqft	Existing	0.36	5	\$0.66	5%	15%	\$0.10	82.65	89.99	7th Power Plan
Chemical Mfg	Heating	Thermostat - WiFi/Interactive	sqft	Existing	0.81	5	\$0.66	5%	15%	\$0.10	206.08	212.35	7th Power Plan
Chemical Mfg	Ventilation	Thermostat - WiFi/Interactive	sqft	Existing	0.03	5	\$0.66	5%	15%	\$0.10	31.67	37.81	7th Power Plan
Chemical Mfg	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	1.15	15	\$0.35	7%	33%	\$0.02	419.34	529.72	7th Power Plan
Chemical Mfg	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	1.57	15	\$0.58	7%	33%	\$0.02	556.31	724.63	7th Power Plan

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Chemical Mfg	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	Existing	0.02	15	\$0.00	1%	2%	\$0.01	2.11	3.10	7th Power Plan
Chemical Mfg	Interior Lighting	Interior Lighting - Timeclocks and Timers	sqft	Existing	0.00	8	\$0.00	7%	7%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Chemical Mfg	Interior Lighting	Interior Lighting - Skylights	sqft	Existing	0.00	15	\$1.01	15%	23%	\$0.00	0.00	0.00	AEG Research
Chemical Mfg	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	sqft	Existing	0.04	16	\$1.81	5%	40%	\$2.85	67.14	109.09	7th Power Plan
Chemical Mfg	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	Existing	0.04	11	\$0.00	15%	50%	\$0.01	70.04	100.09	Illinois TRM
Chemical Mfg	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	sqft	Existing	0.05	8	\$0.03	15%	25%	\$0.07	84.31	130.00	7th Power Plan
Chemical Mfg	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	Existing	0.03	8	\$0.02	33%	60%	\$0.07	117.05	185.79	Pacific Gas and Electric Research
Chemical Mfg	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	Existing	0.03	7	\$1.19	15%	30%	\$3.70	72.98	122.79	AEG Research
Chemical Mfg	Process	Process - Conductivity Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Chemical Mfg	Process	Process - Timers and Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Chemical Mfg	Motors	Process - Timers and Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Chemical Mfg	Process	Refrigeration - Floating Head Pressure	employee	Existing	129.73	15	\$126.41	20%	50%	\$0.08	363.42	364.29	RTF Workbook
Chemical Mfg	Process	Refrigeration - System Optimization	employee	Existing	208.27	15	\$89.02	20%	50%	\$0.04	583.94	583.94	AEG Research
Chemical Mfg	Motors	Pumping System - Equipment Upgrade	employee	Existing	1,373.93	10	\$208.76	9%	38%	\$0.02	3,625.02	3,807.75	7th Power Plan
Chemical Mfg	Motors	Pumping System - System Optimization	employee	Existing	998.94	12	\$318.14	9%	38%	\$0.03	2,544.13	2,697.00	UNIDO Study on Industrial Energy Efficiency
Chemical Mfg	Motors	Pumping System - Variable Speed Drive	employee	Existing	989.20	10	\$330.99	9%	38%	\$0.03	2,509.47	2,680.88	UNIDO Study on Industrial Energy Efficiency
Chemical Mfg	Motors	Fan System - Equipment Upgrade	employee	Existing	347.62	10	\$35.98	9%	38%	\$0.01	895.55	926.71	UNIDO Study on Industrial Energy Efficiency
Chemical Mfg	Motors	Fan System - Flow Optimization	employee	Existing	409.56	10	\$59.52	9%	38%	\$0.02	1,053.90	1,093.16	UNIDO Study on Industrial Energy Efficiency
Chemical Mfg	Motors	Fan System - Variable Speed Drive	employee	Existing	589.40	10	\$299.52	9%	38%	\$0.05	1,482.34	1,610.84	UNIDO Study on Industrial Energy Efficiency

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Chemical Mfg	Motors	Compressed Air - Equipment Upgrade	employee	Existing	2,723.73	10	\$198.19	17%	50%	\$0.01	8,535.07	8,535.07	7th Power Plan
Chemical Mfg	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	Existing	0.00	15	\$0.00	16%	38%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Chemical Mfg	Motors	Compressed Air - Refrigerated Cycling Dryers	employee	Existing	0.00	10	\$0.00	16%	30%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Chemical Mfg	Motors	Compressed Air - System Controls	employee	Existing	569.77	10	\$141.71	9%	38%	\$0.03	1,493.63	1,595.76	UNIDO Study on Industrial Energy Efficiency
Chemical Mfg	Motors	Compressed Air - Leak Management Program	employee	Existing	1,509.72	10	\$142.45	18%	75%	\$0.01	8,048.30	8,224.23	7th Power Plan
Chemical Mfg	Motors	Compressed Air - Variable Speed Drive	employee	Existing	1,019.45	15	\$868.80	26%	45%	\$0.06	1,751.09	1,951.49	UNIDO Study on Industrial Energy Efficiency
Chemical Mfg	Motors	Compressed Air - Low Pressure-Drop Filters	employee	Existing	34.62	10	\$13.39	17%	50%	\$0.04	104.84	114.82	Illinois TRM
Chemical Mfg	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	Existing	215.38	10	\$43.44	17%	50%	\$0.02	660.57	700.80	UNIDO Study on Industrial Energy Efficiency
Chemical Mfg	Motors	Compressed Air - Outside Air Intake	employee	Existing	0.00	20	\$0.00	17%	50%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Chemical Mfg	Motors	Compressed Air - Receiver Capacity Addition	employee	Existing	206.08	15	\$119.46	17%	50%	\$0.04	622.00	686.44	UNIDO Study on Industrial Energy Efficiency
Chemical Mfg	Motors	Material Handling - Variable Speed Drive	employee	Existing	1,174.75	10	\$450.49	25%	45%	\$0.04	2,083.50	2,242.36	7th Power Plan
Chemical Mfg	Motors	Motors - Green Rewind (<100 HP)	employee	Existing	41.94	10	\$19.49	10%	50%	\$0.05	740.96	803.46	7th Power Plan
Chemical Mfg	Motors	Motors - Green Rewind (100 HP+)	employee	Existing	23.78	10	\$6.92	6%	25%	\$0.03	201.11	214.73	7th Power Plan
Chemical Mfg	Motors	Switch from Belt Drive to Direct Drive	employee	Existing	365.22	12	\$85.57	16%	25%	\$0.02	1,557.44	1,635.25	2015-mdu-irp-report---volume-iii.pdf
Chemical Mfg	Motors	Motors - Synchronous Belts	employee	Existing	96.30	10	\$25.74	16%	36%	\$0.03	882.22	946.50	7th Power Plan
Chemical Mfg	Miscellaneous	Agriculture - Engine Block Timer	employee	Existing	832.82	3	\$10.27	0%	0%	\$0.00	0.00	0.00	Vermont TRM
Chemical Mfg	Motors	Agriculture - Live Stock Waterer	employee	Existing	3,207.03	10	\$1,838.46	0%	0%	\$0.06	0.00	0.00	Ontario Power TRM
Chemical Mfg	Process	Dairy - Milk Precoolers	employee	Existing	864.85	15	\$402.26	0%	0%	\$0.04	0.00	0.00	Ontario Power TRM
Chemical Mfg	Process	Clean Room: Change Filter Strategy	employee	Existing	3,552.74	15	\$26.20	0%	0%	\$0.00	0.00	0.00	7th Power Plan

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Chemical Mfg	Process	Clean Room: Chiller Optimize	employee	Existing	257.27	15	\$23.82	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Chemical Mfg	Process	Clean Room: Clean Room HVAC	employee	Existing	156.20	15	\$28.75	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Chemical Mfg	Process	Elec Chip Fab: Solidstate Chiller	employee	Existing	155.67	15	\$90.31	0%	0%	\$0.05	0.00	0.00	7th Power Plan
Chemical Mfg	Process	Elec Chip Fab: Eliminate Exhaust	employee	Existing	444.09	15	\$94.27	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Chemical Mfg	Process	Elec Chip Fab: Exhaust Injector	employee	Existing	885.17	15	\$454.74	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Chemical Mfg	Process	Elec Chip Fab: Reduce Gas Pressure	employee	Existing	888.18	15	\$9.12	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Chemical Mfg	Motors	Panel: Hydraulic Press	employee	Existing	1,796.78	10	\$450.22	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Chemical Mfg	Motors	Wood: Replace Pneumatic Conveyor	employee	Existing	2,045.23	10	\$33.72	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Chemical Mfg	Process	Metal: New Arc Furnace	employee	Existing	1,391.78	10	\$146.10	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Chemical Mfg	Process	Paper: Premium Control Large Material	employee	Existing	597.19	10	\$299.77	0%	0%	\$0.06	0.00	0.00	7th Power Plan
Chemical Mfg	Process	Paper: Efficient Pulp Screen	employee	Existing	479.96	10	\$98.74	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Chemical Mfg	Process	Kraft: Effluent Treatment System	employee	Existing	479.96	10	\$40.48	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Chemical Mfg	Motors	Kraft: Efficient Agitator	employee	Existing	3,420.46	10	\$335.97	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Chemical Mfg	Process	Mech Pulp: Premium Process	employee	Existing	5.37	5	\$0.69	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Chemical Mfg	Motors	Mech Pulp: Refiner Plate Improvement	employee	Existing	28.01	1	\$1.28	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Chemical Mfg	Cooling	Transformer - High Efficiency	employee	Existing	53.99	10	\$99.38	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Chemical Mfg	Heating	Transformer - High Efficiency	employee	Existing	121.82	10	\$99.38	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Chemical Mfg	Ventilation	Transformer - High Efficiency	employee	Existing	3.76	10	\$99.38	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Chemical Mfg	Interior Lighting	Transformer - High Efficiency	employee	Existing	15.27	10	\$99.38	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Chemical Mfg	Exterior Lighting	Transformer - High Efficiency	employee	Existing	3.30	10	\$99.38	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Chemical Mfg	Motors	Transformer - High Efficiency	employee	Existing	344.14	10	\$99.38	15%	15%	\$0.01	0.00	0.00	7th Power Plan

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Chemical Mfg	Process	Transformer - High Efficiency	employee	Existing	238.66	10	\$99.38	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Chemical Mfg	Miscellaneous	Transformer - High Efficiency	employee	Existing	31.52	10	\$99.38	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Chemical Mfg	Cooling	Strategic Energy Management	employee	Existing	148.93	3	\$610.37	0%	5%	\$0.07	11.38	12.55	AEG Research
Chemical Mfg	Heating	Strategic Energy Management	employee	Existing	347.42	3	\$610.37	0%	5%	\$0.07	29.60	30.87	AEG Research
Chemical Mfg	Ventilation	Strategic Energy Management	employee	Existing	10.74	3	\$610.37	0%	5%	\$0.07	4.55	5.50	AEG Research
Chemical Mfg	Interior Lighting	Strategic Energy Management	employee	Existing	43.75	3	\$610.37	0%	5%	\$0.07	15.08	21.72	AEG Research
Chemical Mfg	Exterior Lighting	Strategic Energy Management	employee	Existing	9.45	3	\$610.37	0%	5%	\$0.07	3.34	4.83	AEG Research
Chemical Mfg	Motors	Strategic Energy Management	employee	Existing	984.60	3	\$610.37	0%	5%	\$0.07	406.69	440.51	AEG Research
Chemical Mfg	Process	Strategic Energy Management	employee	Existing	682.57	3	\$610.37	0%	5%	\$0.07	294.20	297.65	AEG Research
Chemical Mfg	Miscellaneous	Strategic Energy Management	employee	Existing	90.06	3	\$610.37	0%	5%	\$0.07	49.26	38.61	AEG Research
Chemical Mfg	Interior Lighting	Commissioning	employee	Existing	50.42	3	\$1,021.57	0%	0%	\$0.13	0.00	0.00	AEG Research
Chemical Mfg	Exterior Lighting	Commissioning	employee	Existing	10.89	3	\$1,021.57	0%	0%	\$0.13	0.00	0.00	AEG Research
Chemical Mfg	Motors	Commissioning	employee	Existing	1,134.69	3	\$1,021.57	0%	0%	\$0.13	0.00	0.00	AEG Research
Chemical Mfg	Process	Commissioning	employee	Existing	786.58	3	\$1,021.57	0%	0%	\$0.13	0.00	0.00	AEG Research
Chemical Mfg	Miscellaneous	Commissioning	employee	Existing	103.78	3	\$1,021.57	0%	0%	\$0.13	0.00	0.00	AEG Research
Chemical Mfg	Interior Lighting	Retrocommissioning	employee	Existing	50.91	3	\$648.51	5%	39%	\$0.09	120.37	171.66	AEG Research
Chemical Mfg	Exterior Lighting	Retrocommissioning	employee	Existing	11.00	3	\$648.51	5%	39%	\$0.09	26.65	38.20	AEG Research
Chemical Mfg	Motors	Retrocommissioning	employee	Existing	1,147.13	3	\$648.51	5%	39%	\$0.09	3,246.57	3,483.28	AEG Research
Chemical Mfg	Process	Retrocommissioning	employee	Existing	795.52	3	\$648.51	5%	39%	\$0.09	2,348.61	2,354.21	AEG Research
Chemical Mfg	Miscellaneous	Retrocommissioning	employee	Existing	105.07	3	\$648.51	5%	39%	\$0.09	393.22	305.60	AEG Research
Chemical Mfg	Motors	Municipal Sewage Treatment	employee	Existing	173.31	12	\$104.95	0%	0%	\$0.05	0.00	0.00	7th Power Plan
Chemical Mfg	Motors	Municipal Water Supply Treatment	employee	Existing	0.00	12	\$0.00	0%	0%	\$0.00	0.00	0.00	7th Power Plan

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Chemical Mfg	Cooling	Insulation - Ceiling	sqft	New	0.17	45	\$1.28	15%	25%	\$0.12	18.16	18.28	Building Energy Simulation Tool
Chemical Mfg	Heating	Insulation - Ceiling	sqft	New	0.40	45	\$1.28	15%	25%	\$0.12	44.76	44.62	Building Energy Simulation Tool
Chemical Mfg	Ventilation	Insulation - Ceiling	sqft	New	0.01	45	\$1.28	15%	25%	\$0.12	5.52	6.06	Building Energy Simulation Tool
Chemical Mfg	Cooling	Insulation - Ducting	sqft	New	0.07	20	\$0.84	15%	25%	\$0.66	7.06	7.11	Building Energy Simulation Tool
Chemical Mfg	Heating	Insulation - Ducting	sqft	New	0.02	20	\$0.84	15%	25%	\$0.66	1.89	1.88	Building Energy Simulation Tool
Chemical Mfg	Ventilation	Insulation - Ducting	sqft	New	0.00	20	\$0.84	15%	25%	\$0.66	0.23	0.26	Building Energy Simulation Tool
Chemical Mfg	Cooling	Insulation - Wall Cavity	sqft	New	0.00	45	\$0.15	45%	50%	\$0.01	0.14	0.14	Building Energy Simulation Tool
Chemical Mfg	Heating	Insulation - Wall Cavity	sqft	New	0.54	45	\$0.15	45%	50%	\$0.01	30.32	30.33	Building Energy Simulation Tool
Chemical Mfg	Ventilation	Insulation - Wall Cavity	sqft	New	0.01	45	\$0.15	45%	50%	\$0.01	3.69	4.05	Building Energy Simulation Tool
Chemical Mfg	Cooling	HVAC - Duct Repair and Sealing	sqft	New	0.02	18	\$0.00	15%	25%	\$0.00	2.28	2.31	Building Energy Simulation Tool
Chemical Mfg	Heating	HVAC - Duct Repair and Sealing	sqft	New	0.04	18	\$0.00	15%	25%	\$0.00	4.20	4.20	Building Energy Simulation Tool
Chemical Mfg	Ventilation	HVAC - Duct Repair and Sealing	sqft	New	0.00	18	\$0.00	15%	25%	\$0.00	0.51	0.56	Building Energy Simulation Tool
Chemical Mfg	Cooling	Chiller - Chilled Water Reset	sqft	New	0.05	10	\$0.01	15%	45%	\$0.02	1.67	1.73	AEG-BEST
Chemical Mfg	Cooling	Chiller - Chilled Water Variable-Flow System	sqft	New	0.30	15	\$0.50	15%	60%	\$0.13	17.79	18.20	AEG-BEST
Chemical Mfg	Cooling	Chiller - Variable Speed Fans	sqft	New	0.11	15	\$0.03	15%	75%	\$0.02	8.72	8.96	New Jersey TRM
Chemical Mfg	Cooling	HVAC - Economizer	sqft	New	0.91	10	\$0.25	18%	30%	\$0.03	7.95	8.20	AEG-BEST
Chemical Mfg	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.25	15%	35%	\$8.97	0.96	1.14	7th Power Plan
Chemical Mfg	Cooling	Destratification Fans (HVLS)	sqft	New	0.22	15	\$0.63	15%	50%	\$0.04	38.94	39.95	AEG Research
Chemical Mfg	Heating	Destratification Fans (HVLS)	sqft	New	0.99	15	\$0.63	15%	50%	\$0.04	186.34	186.74	AEG Research
Chemical Mfg	Cooling	RTU - Maintenance	sqft	New	0.12	3	\$0.07	15%	75%	\$0.16	2.62	2.79	AEG Research
Chemical Mfg	Cooling	Thermostat - WiFi/Interactive	sqft	New	0.34	5	\$0.66	5%	15%	\$0.10	4.74	4.88	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Chemical Mfg	Heating	Thermostat - WiFi/Interactive	sqft	New	0.79	5	\$0.66	5%	15%	\$0.10	11.69	11.68	7th Power Plan
Chemical Mfg	Ventilation	Thermostat - WiFi/Interactive	sqft	New	0.02	5	\$0.66	5%	15%	\$0.10	1.44	1.75	7th Power Plan
Chemical Mfg	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.92	15	\$0.35	22%	41%	\$0.02	249.52	291.60	7th Power Plan
Chemical Mfg	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	1.25	15	\$0.58	22%	41%	\$0.02	338.02	397.14	7th Power Plan
Chemical Mfg	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	New	0.02	15	\$0.00	1%	2%	\$0.01	0.29	0.38	7th Power Plan
Chemical Mfg	Interior Lighting	Interior Lighting - Timeclocks and Timers	sqft	New	0.00	8	\$0.00	7%	7%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Chemical Mfg	Interior Lighting	Interior Lighting - Skylights	sqft	New	0.00	15	\$1.01	18%	24%	\$0.00	0.00	0.00	AEG Research
Chemical Mfg	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	sqft	New	0.03	16	\$1.81	5%	40%	\$2.85	13.19	16.94	7th Power Plan
Chemical Mfg	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	New	0.03	11	\$0.00	15%	50%	\$0.01	10.27	13.32	Illinois TRM
Chemical Mfg	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	sqft	New	0.04	8	\$0.03	15%	25%	\$0.07	9.46	13.17	7th Power Plan
Chemical Mfg	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	New	0.02	8	\$0.02	44%	60%	\$0.07	8.09	11.20	Pacific Gas and Electric Research
Chemical Mfg	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	New	0.02	7	\$1.19	15%	30%	\$3.69	8.21	11.47	AEG Research
Chemical Mfg	Process	Process - Conductivity Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Chemical Mfg	Process	Process - Timers and Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Chemical Mfg	Motors	Process - Timers and Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Chemical Mfg	Process	Refrigeration - Floating Head Pressure	employee	New	130.02	15	\$89.34	20%	50%	\$0.06	70.45	70.43	RTF Workbook
Chemical Mfg	Process	Refrigeration - System Optimization	employee	New	208.27	15	\$31.24	20%	50%	\$0.01	112.81	112.81	AEG Research
Chemical Mfg	Motors	Pumping System - Equipment Upgrade	employee	New	1,439.61	10	\$208.76	9%	38%	\$0.02	584.21	579.54	7th Power Plan
Chemical Mfg	Motors	Pumping System - System Optimization	employee	New	1,066.82	12	\$318.14	9%	38%	\$0.03	714.32	704.08	UNIDO Study on Industrial Energy Efficiency

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Chemical Mfg	Motors	Pumping System - Variable Speed Drive	employee	New	1,062.34	10	\$330.99	9%	38%	\$0.03	657.49	647.41	UNIDO Study on Industrial Energy Efficiency
Chemical Mfg	Motors	Fan System - Equipment Upgrade	employee	New	365.66	10	\$35.98	9%	38%	\$0.01	224.12	223.06	UNIDO Study on Industrial Energy Efficiency
Chemical Mfg	Motors	Fan System - Flow Optimization	employee	New	425.72	10	\$59.52	9%	38%	\$0.02	262.57	259.48	UNIDO Study on Industrial Energy Efficiency
Chemical Mfg	Motors	Fan System - Variable Speed Drive	employee	New	641.35	10	\$299.52	9%	38%	\$0.05	397.90	390.83	UNIDO Study on Industrial Energy Efficiency
Chemical Mfg	Motors	Compressed Air - Equipment Upgrade	employee	New	2,723.73	10	\$198.19	17%	50%	\$0.01	1,278.60	1,278.60	7th Power Plan
Chemical Mfg	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	New	0.00	15	\$0.00	16%	38%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Chemical Mfg	Motors	Compressed Air - Refrigerated Cycling Dryers	employee	New	0.00	10	\$0.00	16%	30%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Chemical Mfg	Motors	Compressed Air - System Controls	employee	New	604.67	10	\$141.71	9%	38%	\$0.03	246.16	243.63	UNIDO Study on Industrial Energy Efficiency
Chemical Mfg	Motors	Compressed Air - Leak Management Program	employee	New	1,539.70	10	\$142.45	18%	75%	\$0.01	1,244.60	1,239.52	7th Power Plan
Chemical Mfg	Motors	Compressed Air - Variable Speed Drive	employee	New	1,112.82	15	\$868.80	26%	45%	\$0.06	391.51	386.13	UNIDO Study on Industrial Energy Efficiency
Chemical Mfg	Motors	Compressed Air - Low Pressure-Drop Filters	employee	New	37.38	10	\$13.39	17%	50%	\$0.04	17.81	17.60	Illinois TRM
Chemical Mfg	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	New	227.47	10	\$43.44	17%	50%	\$0.02	107.94	106.87	UNIDO Study on Industrial Energy Efficiency
Chemical Mfg	Motors	Compressed Air - Outside Air Intake	employee	New	0.00	20	\$0.00	17%	50%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Chemical Mfg	Motors	Compressed Air - Receiver Capacity Addition	employee	New	223.53	15	\$119.46	17%	50%	\$0.04	137.46	135.67	UNIDO Study on Industrial Energy Efficiency
Chemical Mfg	Motors	Material Handling - Variable Speed Drive	employee	New	1,268.61	10	\$450.49	25%	45%	\$0.04	551.55	542.52	7th Power Plan
Chemical Mfg	Motors	Motors - Green Rewind (<100 HP)	employee	New	45.56	10	\$19.49	10%	50%	\$0.05	198.30	194.84	7th Power Plan
Chemical Mfg	Motors	Motors - Green Rewind (100 HP+)	employee	New	25.52	10	\$6.92	6%	25%	\$0.03	52.65	51.85	7th Power Plan
Chemical Mfg	Motors	Switch from Belt Drive to Direct Drive	employee	New	386.39	12	\$85.57	16%	25%	\$0.02	430.43	425.09	2015-mdu-irp-report---volume-iii.pdf
Chemical Mfg	Motors	Motors - Synchronous Belts	employee	New	102.60	10	\$25.74	16%	36%	\$0.03	146.31	144.70	7th Power Plan

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Chemical Mfg	Miscellaneous	Agriculture - Engine Block Timer	employee	New	832.82	3	\$10.27	0%	0%	\$0.00	0.00	0.00	Vermont TRM
Chemical Mfg	Motors	Agriculture - Live Stock Waterer	employee	New	3,500.74	10	\$1,838.46	0%	0%	\$0.06	0.00	0.00	Ontario Power TRM
Chemical Mfg	Process	Dairy - Milk Precoolers	employee	New	866.80	15	\$402.26	0%	0%	\$0.04	0.00	0.00	Ontario Power TRM
Chemical Mfg	Process	Clean Room: Change Filter Strategy	employee	New	3,552.74	15	\$26.20	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Chemical Mfg	Process	Clean Room: Chiller Optimize	employee	New	257.27	15	\$23.82	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Chemical Mfg	Process	Clean Room: Clean Room HVAC	employee	New	156.02	15	\$28.75	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Chemical Mfg	Process	Elec Chip Fab: Solidstate Chiller	employee	New	156.02	15	\$90.31	0%	0%	\$0.05	0.00	0.00	7th Power Plan
Chemical Mfg	Process	Elec Chip Fab: Eliminate Exhaust	employee	New	443.58	15	\$94.27	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Chemical Mfg	Process	Elec Chip Fab: Exhaust Injector	employee	New	887.16	15	\$454.74	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Chemical Mfg	Process	Elec Chip Fab: Reduce Gas Pressure	employee	New	888.18	15	\$9.12	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Chemical Mfg	Motors	Panel: Hydraulic Press	employee	New	1,914.38	10	\$450.22	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Chemical Mfg	Motors	Wood: Replace Pneumatic Conveyor	employee	New	2,045.23	10	\$33.72	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Chemical Mfg	Process	Metal: New Arc Furnace	employee	New	1,391.78	10	\$146.10	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Chemical Mfg	Process	Paper: Premium Control Large Material	employee	New	598.53	10	\$299.77	0%	0%	\$0.06	0.00	0.00	7th Power Plan
Chemical Mfg	Process	Paper: Efficient Pulp Screen	employee	New	479.40	10	\$98.74	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Chemical Mfg	Process	Kraft: Effluent Treatment System	employee	New	479.96	10	\$40.48	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Chemical Mfg	Motors	Kraft: Efficient Agitator	employee	New	3,456.01	10	\$335.97	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Chemical Mfg	Process	Mech Pulp: Premium Process	employee	New	5.37	5	\$0.69	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Chemical Mfg	Motors	Mech Pulp: Refiner Plate Improvement	employee	New	30.24	1	\$1.28	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Chemical Mfg	Cooling	Transformer - High Efficiency	employee	New	49.11	10	\$98.03	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Chemical Mfg	Heating	Transformer - High Efficiency	employee	New	118.43	10	\$98.03	15%	15%	\$0.01	0.00	0.00	7th Power Plan

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Chemical Mfg	Ventilation	Transformer - High Efficiency	employee	New	2.30	10	\$98.03	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Chemical Mfg	Interior Lighting	Transformer - High Efficiency	employee	New	12.06	10	\$98.03	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Chemical Mfg	Exterior Lighting	Transformer - High Efficiency	employee	New	2.63	10	\$98.03	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Chemical Mfg	Motors	Transformer - High Efficiency	employee	New	377.42	10	\$98.03	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Chemical Mfg	Process	Transformer - High Efficiency	employee	New	239.53	10	\$98.03	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Chemical Mfg	Miscellaneous	Transformer - High Efficiency	employee	New	29.86	10	\$98.03	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Chemical Mfg	Cooling	Strategic Energy Management	employee	New	140.19	3	\$602.06	0%	5%	\$0.07	0.23	0.24	AEG Research
Chemical Mfg	Heating	Strategic Energy Management	employee	New	340.58	3	\$602.06	0%	5%	\$0.07	0.60	0.61	AEG Research
Chemical Mfg	Ventilation	Strategic Energy Management	employee	New	6.61	3	\$602.06	0%	5%	\$0.07	0.07	0.09	AEG Research
Chemical Mfg	Interior Lighting	Strategic Energy Management	employee	New	34.84	3	\$602.06	0%	5%	\$0.07	0.30	0.45	AEG Research
Chemical Mfg	Exterior Lighting	Strategic Energy Management	employee	New	7.58	3	\$602.06	0%	5%	\$0.07	0.07	0.10	AEG Research
Chemical Mfg	Motors	Strategic Energy Management	employee	New	1,090.33	3	\$602.06	0%	5%	\$0.07	9.68	9.70	AEG Research
Chemical Mfg	Process	Strategic Energy Management	employee	New	691.97	3	\$602.06	0%	5%	\$0.07	6.04	6.04	AEG Research
Chemical Mfg	Miscellaneous	Strategic Energy Management	employee	New	86.25	3	\$602.06	0%	5%	\$0.07	0.93	0.63	AEG Research
Chemical Mfg	Interior Lighting	Commissioning	employee	New	40.19	3	\$1,024.67	5%	39%	\$0.14	2.35	3.55	AEG Research
Chemical Mfg	Exterior Lighting	Commissioning	employee	New	8.75	3	\$1,024.67	5%	39%	\$0.14	0.54	0.82	AEG Research
Chemical Mfg	Motors	Commissioning	employee	New	1,257.80	3	\$1,024.67	5%	39%	\$0.14	75.96	76.12	AEG Research
Chemical Mfg	Process	Commissioning	employee	New	798.25	3	\$1,024.67	5%	39%	\$0.14	47.39	47.38	AEG Research
Chemical Mfg	Miscellaneous	Commissioning	employee	New	99.50	3	\$1,024.67	5%	39%	\$0.14	7.31	4.93	AEG Research
Chemical Mfg	Interior Lighting	Retrocommissioning	employee	New	40.20	3	\$650.48	0%	0%	\$0.09	0.00	0.00	AEG Research

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Chemical Mfg	Exterior Lighting	Retrocommissioning	employee	New	8.75	3	\$650.48	0%	0%	\$0.09	0.00	0.00	AEG Research
Chemical Mfg	Motors	Retrocommissioning	employee	New	1,258.07	3	\$650.48	0%	0%	\$0.09	0.00	0.00	AEG Research
Chemical Mfg	Process	Retrocommissioning	employee	New	798.43	3	\$650.48	0%	0%	\$0.09	0.00	0.00	AEG Research
Chemical Mfg	Miscellaneous	Retrocommissioning	employee	New	99.52	3	\$650.48	0%	0%	\$0.09	0.00	0.00	AEG Research
Chemical Mfg	Motors	Municipal Sewage Treatment	employee	New	189.18	12	\$104.95	0%	0%	\$0.05	0.00	0.00	7th Power Plan
Chemical Mfg	Motors	Municipal Water Supply Treatment	employee	New	0.00	12	\$0.00	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Cooling	Insulation - Ceiling	sqft	Existing	0.18	45	\$1.28	15%	25%	\$0.11	151.49	166.36	Building Energy Simulation Tool
Electronic Equipment Mfg	Heating	Insulation - Ceiling	sqft	Existing	0.40	45	\$1.28	15%	25%	\$0.11	377.96	392.62	Building Energy Simulation Tool
Electronic Equipment Mfg	Ventilation	Insulation - Ceiling	sqft	Existing	0.01	45	\$1.28	15%	25%	\$0.11	58.08	69.94	Building Energy Simulation Tool
Electronic Equipment Mfg	Cooling	Insulation - Ducting	sqft	Existing	0.07	20	\$0.84	15%	25%	\$0.62	58.48	64.58	Building Energy Simulation Tool
Electronic Equipment Mfg	Heating	Insulation - Ducting	sqft	Existing	0.02	20	\$0.84	15%	25%	\$0.62	15.83	16.53	Building Energy Simulation Tool
Electronic Equipment Mfg	Ventilation	Insulation - Ducting	sqft	Existing	0.00	20	\$0.84	15%	25%	\$0.62	2.43	2.95	Building Energy Simulation Tool
Electronic Equipment Mfg	Cooling	Insulation - Wall Cavity	sqft	Existing	0.00	45	\$0.15	45%	50%	\$0.01	1.28	1.35	Building Energy Simulation Tool
Electronic Equipment Mfg	Heating	Insulation - Wall Cavity	sqft	Existing	0.58	45	\$0.15	45%	50%	\$0.01	275.96	276.56	Building Energy Simulation Tool
Electronic Equipment Mfg	Ventilation	Insulation - Wall Cavity	sqft	Existing	0.02	45	\$0.15	45%	50%	\$0.01	39.50	47.04	Building Energy Simulation Tool
Electronic Equipment Mfg	Cooling	HVAC - Duct Repair and Sealing	sqft	Existing	0.02	18	\$0.00	15%	25%	\$0.00	21.41	22.50	Building Energy Simulation Tool
Electronic Equipment Mfg	Heating	HVAC - Duct Repair and Sealing	sqft	Existing	0.04	18	\$0.00	15%	25%	\$0.00	38.91	38.98	Building Energy Simulation Tool
Electronic Equipment Mfg	Ventilation	HVAC - Duct Repair and Sealing	sqft	Existing	0.00	18	\$0.00	15%	25%	\$0.00	5.57	6.63	Building Energy Simulation Tool
Electronic Equipment Mfg	Cooling	Chiller - Chilled Water Reset	sqft	Existing	0.07	10	\$0.01	15%	45%	\$0.02	49.39	53.45	AEG-BEST
Electronic Equipment Mfg	Cooling	Chiller - Chilled Water Variable-Flow System	sqft	Existing	0.36	15	\$0.50	15%	60%	\$0.11	387.95	434.26	AEG-BEST

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Electronic Equipment Mfg	Cooling	Chiller - Variable Speed Fans	sqft	Existing	0.14	15	\$0.03	15%	75%	\$0.02	199.39	216.05	New Jersey TRM
Electronic Equipment Mfg	Cooling	HVAC - Economizer	sqft	Existing	0.83	10	\$0.25	18%	30%	\$0.03	217.20	234.80	AEG-BEST
Electronic Equipment Mfg	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.25	15%	35%	\$7.50	22.65	29.24	7th Power Plan
Electronic Equipment Mfg	Cooling	Destratification Fans (HVLS)	sqft	Existing	0.24	15	\$0.63	15%	50%	\$0.04	789.91	858.88	AEG Research
Electronic Equipment Mfg	Heating	Destratification Fans (HVLS)	sqft	Existing	1.05	15	\$0.63	15%	50%	\$0.04	3,784.78	3,811.44	AEG Research
Electronic Equipment Mfg	Cooling	RTU - Maintenance	sqft	Existing	0.12	3	\$0.07	15%	75%	\$0.15	447.01	504.83	AEG Research
Electronic Equipment Mfg	Cooling	Thermostat - WiFi/Interactive	sqft	Existing	0.36	5	\$0.66	5%	15%	\$0.10	306.76	333.99	7th Power Plan
Electronic Equipment Mfg	Heating	Thermostat - WiFi/Interactive	sqft	Existing	0.81	5	\$0.66	5%	15%	\$0.10	764.88	788.13	7th Power Plan
Electronic Equipment Mfg	Ventilation	Thermostat - WiFi/Interactive	sqft	Existing	0.03	5	\$0.66	5%	15%	\$0.10	117.55	140.35	7th Power Plan
Electronic Equipment Mfg	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.94	15	\$0.35	7%	33%	\$0.02	1,008.31	1,273.70	7th Power Plan
Electronic Equipment Mfg	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	1.28	15	\$0.58	7%	33%	\$0.03	1,337.66	1,742.38	7th Power Plan
Electronic Equipment Mfg	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	Existing	0.02	15	\$0.00	1%	2%	\$0.01	5.07	7.45	7th Power Plan
Electronic Equipment Mfg	Interior Lighting	Interior Lighting - Timeclocks and Timers	sqft	Existing	0.00	8	\$0.00	7%	7%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Electronic Equipment Mfg	Interior Lighting	Interior Lighting - Skylights	sqft	Existing	0.00	15	\$1.01	15%	23%	\$0.00	0.00	0.00	AEG Research
Electronic Equipment Mfg	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	sqft	Existing	0.04	16	\$1.81	5%	40%	\$2.85	161.44	262.30	7th Power Plan
Electronic Equipment Mfg	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	Existing	0.04	11	\$0.00	15%	50%	\$0.01	168.40	240.66	Illinois TRM
Electronic Equipment Mfg	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	sqft	Existing	0.05	8	\$0.03	15%	25%	\$0.07	202.73	312.59	7th Power Plan
Electronic Equipment Mfg	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	Existing	0.03	8	\$0.02	33%	60%	\$0.07	281.46	446.73	Pacific Gas and Electric Research
Electronic Equipment Mfg	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	Existing	0.03	7	\$1.19	15%	30%	\$3.70	175.49	295.24	AEG Research

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Electronic Equipment Mfg	Process	Process - Conductivity Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Process	Process - Timers and Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Motors	Process - Timers and Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Process	Refrigeration - Floating Head Pressure	employee	Existing	126.77	15	\$129.19	20%	50%	\$0.08	368.97	384.23	RTF Workbook
Electronic Equipment Mfg	Process	Refrigeration - System Optimization	employee	Existing	205.95	15	\$90.97	20%	50%	\$0.04	601.78	619.89	AEG Research
Electronic Equipment Mfg	Motors	Pumping System - Equipment Upgrade	employee	Existing	96.58	10	\$14.38	9%	38%	\$0.02	270.17	279.56	7th Power Plan
Electronic Equipment Mfg	Motors	Pumping System - System Optimization	employee	Existing	71.14	12	\$21.91	9%	38%	\$0.03	192.78	200.40	UNIDO Study on Industrial Energy Efficiency
Electronic Equipment Mfg	Motors	Pumping System - Variable Speed Drive	employee	Existing	70.93	10	\$22.80	9%	38%	\$0.03	191.98	200.03	UNIDO Study on Industrial Energy Efficiency
Electronic Equipment Mfg	Motors	Fan System - Equipment Upgrade	employee	Existing	87.22	10	\$8.68	9%	38%	\$0.01	239.34	242.13	UNIDO Study on Industrial Energy Efficiency
Electronic Equipment Mfg	Motors	Fan System - Flow Optimization	employee	Existing	100.76	10	\$14.35	9%	38%	\$0.02	274.84	281.79	UNIDO Study on Industrial Energy Efficiency
Electronic Equipment Mfg	Motors	Fan System - Variable Speed Drive	employee	Existing	147.57	10	\$72.23	9%	38%	\$0.05	395.63	420.21	UNIDO Study on Industrial Energy Efficiency
Electronic Equipment Mfg	Motors	Compressed Air - Equipment Upgrade	employee	Existing	512.46	10	\$37.29	17%	50%	\$0.01	1,693.27	1,693.27	7th Power Plan
Electronic Equipment Mfg	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	Existing	0.00	15	\$0.00	16%	38%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Electronic Equipment Mfg	Motors	Compressed Air - Refrigerated Cycling Dryers	employee	Existing	0.00	10	\$0.00	16%	30%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Electronic Equipment Mfg	Motors	Compressed Air - System Controls	employee	Existing	110.65	10	\$26.66	9%	38%	\$0.03	308.45	322.01	UNIDO Study on Industrial Energy Efficiency
Electronic Equipment Mfg	Motors	Compressed Air - Leak Management Program	employee	Existing	286.12	10	\$26.80	18%	75%	\$0.01	1,610.82	1,638.43	7th Power Plan
Electronic Equipment Mfg	Motors	Compressed Air - Variable Speed Drive	employee	Existing	199.28	15	\$163.46	26%	45%	\$0.06	365.01	395.06	UNIDO Study on Industrial Energy Efficiency
Electronic Equipment Mfg	Motors	Compressed Air - Low Pressure-Drop Filters	employee	Existing	6.71	10	\$2.52	17%	50%	\$0.04	21.57	23.15	Illinois TRM
Electronic Equipment Mfg	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	Existing	41.79	10	\$8.17	17%	50%	\$0.02	136.27	141.36	UNIDO Study on Industrial Energy Efficiency

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Electronic Equipment Mfg	Motors	Compressed Air - Outside Air Intake	employee	Existing	0.00	20	\$0.00	17%	50%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Electronic Equipment Mfg	Motors	Compressed Air - Receiver Capacity Addition	employee	Existing	40.23	15	\$22.48	17%	50%	\$0.04	129.39	138.86	UNIDO Study on Industrial Energy Efficiency
Electronic Equipment Mfg	Motors	Material Handling - Variable Speed Drive	employee	Existing	799.60	10	\$292.40	25%	45%	\$0.04	1,517.45	1,583.89	7th Power Plan
Electronic Equipment Mfg	Motors	Motors - Green Rewind (<100 HP)	employee	Existing	15.13	10	\$6.78	10%	50%	\$0.05	228.02	241.66	7th Power Plan
Electronic Equipment Mfg	Motors	Motors - Green Rewind (100 HP+)	employee	Existing	8.60	10	\$2.40	6%	25%	\$0.03	62.11	64.68	7th Power Plan
Electronic Equipment Mfg	Motors	Switch from Belt Drive to Direct Drive	employee	Existing	131.02	12	\$29.74	16%	25%	\$0.02	475.30	489.92	2015-mdu-irp-report---volume-iii.pdf
Electronic Equipment Mfg	Motors	Motors - Synchronous Belts	employee	Existing	34.61	10	\$8.95	16%	36%	\$0.03	269.88	282.54	7th Power Plan
Electronic Equipment Mfg	Miscellaneous	Agriculture - Engine Block Timer	employee	Existing	1,834.07	3	\$22.63	0%	0%	\$0.00	0.00	0.00	Vermont TRM
Electronic Equipment Mfg	Motors	Agriculture - Live Stock Waterer	employee	Existing	229.48	10	\$126.62	0%	0%	\$0.06	0.00	0.00	Ontario Power TRM
Electronic Equipment Mfg	Process	Dairy - Milk Precoolers	employee	Existing	853.96	15	\$411.10	0%	0%	\$0.04	0.00	0.00	Ontario Power TRM
Electronic Equipment Mfg	Process	Clean Room: Change Filter Strategy	employee	Existing	266.62	15	\$1.97	15%	75%	\$0.00	0.00	1,548.25	7th Power Plan
Electronic Equipment Mfg	Process	Clean Room: Chiller Optimize	employee	Existing	259.24	15	\$24.34	15%	75%	\$0.01	1,498.17	1,513.39	7th Power Plan
Electronic Equipment Mfg	Process	Clean Room: Clean Room HVAC	employee	Existing	155.71	15	\$29.38	15%	75%	\$0.02	896.24	912.87	7th Power Plan
Electronic Equipment Mfg	Process	Elec Chip Fab: Solidstate Chiller	employee	Existing	153.24	15	\$92.30	15%	75%	\$0.05	901.25	933.61	7th Power Plan
Electronic Equipment Mfg	Process	Elec Chip Fab: Eliminate Exhaust	employee	Existing	32.30	15	\$7.07	15%	75%	\$0.02	190.40	195.92	7th Power Plan
Electronic Equipment Mfg	Process	Elec Chip Fab: Exhaust Injector	employee	Existing	64.18	15	\$34.13	15%	75%	\$0.04	377.76	390.47	7th Power Plan
Electronic Equipment Mfg	Process	Elec Chip Fab: Reduce Gas Pressure	employee	Existing	65.92	15	\$0.68	15%	75%	\$0.00	391.49	395.50	7th Power Plan
Electronic Equipment Mfg	Motors	Panel: Hydraulic Press	employee	Existing	1,210.74	10	\$292.23	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Motors	Wood: Replace Pneumatic Conveyor	employee	Existing	1,327.52	10	\$21.89	0%	0%	\$0.00	0.00	0.00	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Electronic Equipment Mfg	Process	Metal: New Arc Furnace	employee	Existing	1,676.54	10	\$180.43	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Process	Paper: Premium Control Large Material	employee	Existing	406.43	10	\$213.36	0%	0%	\$0.06	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Process	Paper: Efficient Pulp Screen	employee	Existing	330.54	10	\$70.28	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Process	Kraft: Effluent Treatment System	employee	Existing	333.21	10	\$28.81	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Motors	Kraft: Efficient Agitator	employee	Existing	2,192.06	10	\$218.07	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Process	Mech Pulp: Premium Process	employee	Existing	3.70	5	\$0.49	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Motors	Mech Pulp: Refiner Plate Improvement	employee	Existing	19.06	1	\$0.83	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Cooling	Transformer - High Efficiency	employee	Existing	190.04	10	\$121.50	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Heating	Transformer - High Efficiency	employee	Existing	428.79	10	\$121.50	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Ventilation	Transformer - High Efficiency	employee	Existing	13.24	10	\$121.50	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Interior Lighting	Transformer - High Efficiency	employee	Existing	34.83	10	\$121.50	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Exterior Lighting	Transformer - High Efficiency	employee	Existing	7.52	10	\$121.50	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Motors	Transformer - High Efficiency	employee	Existing	99.64	10	\$121.50	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Process	Transformer - High Efficiency	employee	Existing	162.28	10	\$121.50	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Miscellaneous	Transformer - High Efficiency	employee	Existing	69.42	10	\$121.50	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Cooling	Strategic Energy Management	employee	Existing	524.20	3	\$746.24	0%	5%	\$0.07	42.23	46.58	AEG Research
Electronic Equipment Mfg	Heating	Strategic Energy Management	employee	Existing	1,222.89	3	\$746.24	0%	5%	\$0.07	109.86	114.59	AEG Research
Electronic Equipment Mfg	Ventilation	Strategic Energy Management	employee	Existing	37.80	3	\$746.24	0%	5%	\$0.07	16.88	20.41	AEG Research
Electronic Equipment Mfg	Interior Lighting	Strategic Energy Management	employee	Existing	99.76	3	\$746.24	0%	5%	\$0.07	36.26	52.23	AEG Research

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Electronic Equipment Mfg	Exterior Lighting	Strategic Energy Management	employee	Existing	21.55	3	\$746.24	0%	5%	\$0.07	8.03	11.62	AEG Research
Electronic Equipment Mfg	Motors	Strategic Energy Management	employee	Existing	285.06	3	\$746.24	0%	5%	\$0.07	125.65	133.48	AEG Research
Electronic Equipment Mfg	Process	Strategic Energy Management	employee	Existing	464.18	3	\$746.24	0%	5%	\$0.07	207.79	215.29	AEG Research
Electronic Equipment Mfg	Miscellaneous	Strategic Energy Management	employee	Existing	198.34	3	\$746.24	0%	5%	\$0.07	114.38	89.65	AEG Research
Electronic Equipment Mfg	Interior Lighting	Commissioning	employee	Existing	114.98	3	\$526.52	0%	0%	\$0.12	0.00	0.00	AEG Research
Electronic Equipment Mfg	Exterior Lighting	Commissioning	employee	Existing	24.84	3	\$526.52	0%	0%	\$0.12	0.00	0.00	AEG Research
Electronic Equipment Mfg	Motors	Commissioning	employee	Existing	328.51	3	\$526.52	0%	0%	\$0.12	0.00	0.00	AEG Research
Electronic Equipment Mfg	Process	Commissioning	employee	Existing	534.92	3	\$526.52	0%	0%	\$0.12	0.00	0.00	AEG Research
Electronic Equipment Mfg	Miscellaneous	Commissioning	employee	Existing	228.54	3	\$526.52	0%	0%	\$0.12	0.00	0.00	AEG Research
Electronic Equipment Mfg	Interior Lighting	Retrocommissioning	employee	Existing	116.10	3	\$334.24	5%	39%	\$0.07	289.43	412.75	AEG Research
Electronic Equipment Mfg	Exterior Lighting	Retrocommissioning	employee	Existing	25.07	3	\$334.24	5%	39%	\$0.07	64.09	91.85	AEG Research
Electronic Equipment Mfg	Motors	Retrocommissioning	employee	Existing	332.15	3	\$334.24	5%	39%	\$0.07	1,003.08	1,055.51	AEG Research
Electronic Equipment Mfg	Process	Retrocommissioning	employee	Existing	540.92	3	\$334.24	5%	39%	\$0.07	1,658.79	1,702.69	AEG Research
Electronic Equipment Mfg	Miscellaneous	Retrocommissioning	employee	Existing	231.39	3	\$334.24	5%	39%	\$0.07	913.11	709.65	AEG Research
Electronic Equipment Mfg	Motors	Municipal Sewage Treatment	employee	Existing	12.40	12	\$7.23	0%	0%	\$0.05	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Motors	Municipal Water Supply Treatment	employee	Existing	0.00	12	\$0.00	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Cooling	Insulation - Ceiling	sqft	New	0.17	45	\$1.28	15%	25%	\$0.12	67.39	67.86	Building Energy Simulation Tool
Electronic Equipment Mfg	Heating	Insulation - Ceiling	sqft	New	0.40	45	\$1.28	15%	25%	\$0.12	166.14	165.60	Building Energy Simulation Tool
Electronic Equipment Mfg	Ventilation	Insulation - Ceiling	sqft	New	0.01	45	\$1.28	15%	25%	\$0.12	20.50	22.47	Building Energy Simulation Tool

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Electronic Equipment Mfg	Cooling	Insulation - Ducting	sqft	New	0.07	20	\$0.84	15%	25%	\$0.66	26.19	26.40	Building Energy Simulation Tool
Electronic Equipment Mfg	Heating	Insulation - Ducting	sqft	New	0.02	20	\$0.84	15%	25%	\$0.66	7.00	6.99	Building Energy Simulation Tool
Electronic Equipment Mfg	Ventilation	Insulation - Ducting	sqft	New	0.00	20	\$0.84	15%	25%	\$0.66	0.86	0.95	Building Energy Simulation Tool
Electronic Equipment Mfg	Cooling	Insulation - Wall Cavity	sqft	New	0.00	45	\$0.15	45%	50%	\$0.01	0.52	0.53	Building Energy Simulation Tool
Electronic Equipment Mfg	Heating	Insulation - Wall Cavity	sqft	New	0.54	45	\$0.15	45%	50%	\$0.01	112.52	112.57	Building Energy Simulation Tool
Electronic Equipment Mfg	Ventilation	Insulation - Wall Cavity	sqft	New	0.01	45	\$0.15	45%	50%	\$0.01	13.71	15.02	Building Energy Simulation Tool
Electronic Equipment Mfg	Cooling	HVAC - Duct Repair and Sealing	sqft	New	0.02	18	\$0.00	15%	25%	\$0.00	8.45	8.56	Building Energy Simulation Tool
Electronic Equipment Mfg	Heating	HVAC - Duct Repair and Sealing	sqft	New	0.04	18	\$0.00	15%	25%	\$0.00	15.58	15.59	Building Energy Simulation Tool
Electronic Equipment Mfg	Ventilation	HVAC - Duct Repair and Sealing	sqft	New	0.00	18	\$0.00	15%	25%	\$0.00	1.90	2.08	Building Energy Simulation Tool
Electronic Equipment Mfg	Cooling	Chiller - Chilled Water Reset	sqft	New	0.05	10	\$0.01	15%	45%	\$0.02	6.21	6.41	AEG-BEST
Electronic Equipment Mfg	Cooling	Chiller - Chilled Water Variable-Flow System	sqft	New	0.30	15	\$0.50	15%	60%	\$0.13	66.02	67.56	AEG-BEST
Electronic Equipment Mfg	Cooling	Chiller - Variable Speed Fans	sqft	New	0.11	15	\$0.03	15%	75%	\$0.02	32.37	33.27	New Jersey TRM
Electronic Equipment Mfg	Cooling	HVAC - Economizer	sqft	New	0.74	10	\$0.25	18%	30%	\$0.03	29.51	30.44	AEG-BEST
Electronic Equipment Mfg	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.25	15%	35%	\$8.97	3.57	4.23	7th Power Plan
Electronic Equipment Mfg	Cooling	Destratification Fans (HVLS)	sqft	New	0.22	15	\$0.63	15%	50%	\$0.04	144.51	148.28	AEG Research
Electronic Equipment Mfg	Heating	Destratification Fans (HVLS)	sqft	New	0.99	15	\$0.63	15%	50%	\$0.04	691.61	693.07	AEG Research
Electronic Equipment Mfg	Cooling	RTU - Maintenance	sqft	New	0.12	3	\$0.07	15%	75%	\$0.16	9.72	10.36	AEG Research
Electronic Equipment Mfg	Cooling	Thermostat - WiFi/Interactive	sqft	New	0.34	5	\$0.66	5%	15%	\$0.10	17.60	18.11	7th Power Plan
Electronic Equipment Mfg	Heating	Thermostat - WiFi/Interactive	sqft	New	0.79	5	\$0.66	5%	15%	\$0.10	43.39	43.33	7th Power Plan

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Electronic Equipment Mfg	Ventilation	Thermostat - WiFi/Interactive	sqft	New	0.02	5	\$0.66	5%	15%	\$0.10	5.35	6.49	7th Power Plan
Electronic Equipment Mfg	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.75	15	\$0.35	22%	41%	\$0.02	599.97	701.14	7th Power Plan
Electronic Equipment Mfg	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	1.02	15	\$0.58	22%	41%	\$0.03	812.77	954.91	7th Power Plan
Electronic Equipment Mfg	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	New	0.02	15	\$0.00	1%	2%	\$0.01	0.70	0.91	7th Power Plan
Electronic Equipment Mfg	Interior Lighting	Interior Lighting - Timeclocks and Timers	sqft	New	0.00	8	\$0.00	7%	7%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Electronic Equipment Mfg	Interior Lighting	Interior Lighting - Skylights	sqft	New	0.00	15	\$1.01	18%	24%	\$0.00	0.00	0.00	AEG Research
Electronic Equipment Mfg	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	sqft	New	0.03	16	\$1.81	5%	40%	\$2.85	31.73	40.74	7th Power Plan
Electronic Equipment Mfg	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	New	0.03	11	\$0.00	15%	50%	\$0.01	24.70	32.02	Illinois TRM
Electronic Equipment Mfg	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	sqft	New	0.04	8	\$0.03	15%	25%	\$0.07	22.75	31.68	7th Power Plan
Electronic Equipment Mfg	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	New	0.02	8	\$0.02	44%	60%	\$0.07	19.45	26.93	Pacific Gas and Electric Research
Electronic Equipment Mfg	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	New	0.02	7	\$1.19	15%	30%	\$3.69	19.75	27.59	AEG Research
Electronic Equipment Mfg	Process	Process - Conductivity Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Process	Process - Timers and Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Motors	Process - Timers and Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Process	Refrigeration - Floating Head Pressure	employee	New	130.54	15	\$91.30	20%	50%	\$0.06	74.89	74.70	RTF Workbook
Electronic Equipment Mfg	Process	Refrigeration - System Optimization	employee	New	210.65	15	\$31.93	20%	50%	\$0.01	120.57	120.46	AEG Research
Electronic Equipment Mfg	Motors	Pumping System - Equipment Upgrade	employee	New	99.64	10	\$14.38	9%	38%	\$0.02	42.54	42.30	7th Power Plan
Electronic Equipment Mfg	Motors	Pumping System - System Optimization	employee	New	74.26	12	\$21.91	9%	38%	\$0.03	52.19	51.71	UNIDO Study on Industrial Energy Efficiency
Electronic Equipment Mfg	Motors	Pumping System - Variable Speed Drive	employee	New	74.17	10	\$22.80	9%	38%	\$0.03	48.15	47.69	UNIDO Study on Industrial Energy Efficiency

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Electronic Equipment Mfg	Motors	Fan System - Equipment Upgrade	employee	New	88.45	10	\$8.68	9%	38%	\$0.01	57.09	56.91	UNIDO Study on Industrial Energy Efficiency
Electronic Equipment Mfg	Motors	Fan System - Flow Optimization	employee	New	103.76	10	\$14.35	9%	38%	\$0.02	67.17	66.73	UNIDO Study on Industrial Energy Efficiency
Electronic Equipment Mfg	Motors	Fan System - Variable Speed Drive	employee	New	156.60	10	\$72.23	9%	38%	\$0.05	101.94	100.68	UNIDO Study on Industrial Energy Efficiency
Electronic Equipment Mfg	Motors	Compressed Air - Equipment Upgrade	employee	New	512.46	10	\$37.29	17%	50%	\$0.01	253.66	253.66	7th Power Plan
Electronic Equipment Mfg	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	New	0.00	15	\$0.00	16%	38%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Electronic Equipment Mfg	Motors	Compressed Air - Refrigerated Cycling Dryers	employee	New	0.00	10	\$0.00	16%	30%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Electronic Equipment Mfg	Motors	Compressed Air - System Controls	employee	New	114.91	10	\$26.66	9%	38%	\$0.03	49.12	48.81	UNIDO Study on Industrial Energy Efficiency
Electronic Equipment Mfg	Motors	Compressed Air - Leak Management Program	employee	New	290.64	10	\$26.80	18%	75%	\$0.01	247.37	246.69	7th Power Plan
Electronic Equipment Mfg	Motors	Compressed Air - Variable Speed Drive	employee	New	212.06	15	\$163.46	26%	45%	\$0.06	78.28	77.54	UNIDO Study on Industrial Energy Efficiency
Electronic Equipment Mfg	Motors	Compressed Air - Low Pressure-Drop Filters	employee	New	7.10	10	\$2.52	17%	50%	\$0.04	3.55	3.52	Illinois TRM
Electronic Equipment Mfg	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	New	43.22	10	\$8.17	17%	50%	\$0.02	21.53	21.41	UNIDO Study on Industrial Energy Efficiency
Electronic Equipment Mfg	Motors	Compressed Air - Outside Air Intake	employee	New	0.00	20	\$0.00	17%	50%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Electronic Equipment Mfg	Motors	Compressed Air - Receiver Capacity Addition	employee	New	42.57	15	\$22.48	17%	50%	\$0.04	27.47	27.23	UNIDO Study on Industrial Energy Efficiency
Electronic Equipment Mfg	Motors	Material Handling - Variable Speed Drive	employee	New	837.19	10	\$292.40	25%	45%	\$0.04	381.50	377.74	7th Power Plan
Electronic Equipment Mfg	Motors	Motors - Green Rewind (<100 HP)	employee	New	16.03	10	\$6.78	10%	50%	\$0.05	58.58	57.87	7th Power Plan
Electronic Equipment Mfg	Motors	Motors - Green Rewind (100 HP+)	employee	New	8.99	10	\$2.40	6%	25%	\$0.03	15.57	15.42	7th Power Plan
Electronic Equipment Mfg	Motors	Switch from Belt Drive to Direct Drive	employee	New	135.65	12	\$29.74	16%	25%	\$0.02	126.92	125.95	2015-mdu-irp-report---volume-iii.pdf
Electronic Equipment Mfg	Motors	Motors - Synchronous Belts	employee	New	36.04	10	\$8.95	16%	36%	\$0.03	43.16	42.87	7th Power Plan
Electronic Equipment Mfg	Miscellaneous	Agriculture - Engine Block Timer	employee	New	1,834.07	3	\$22.63	0%	0%	\$0.00	0.00	0.00	Vermont TRM

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Electronic Equipment Mfg	Motors	Agriculture - Live Stock Waterer	employee	New	244.20	10	\$126.62	0%	0%	\$0.06	0.00	0.00	Ontario Power TRM
Electronic Equipment Mfg	Process	Dairy - Milk Precoolers	employee	New	873.36	15	\$411.10	0%	0%	\$0.04	0.00	0.00	Ontario Power TRM
Electronic Equipment Mfg	Process	Clean Room: Change Filter Strategy	employee	New	266.62	15	\$1.97	15%	75%	\$0.00	0.00	407.67	7th Power Plan
Electronic Equipment Mfg	Process	Clean Room: Chiller Optimize	employee	New	261.41	15	\$24.34	15%	75%	\$0.01	400.21	399.71	7th Power Plan
Electronic Equipment Mfg	Process	Clean Room: Clean Room HVAC	employee	New	157.73	15	\$29.38	15%	75%	\$0.02	241.82	241.17	7th Power Plan
Electronic Equipment Mfg	Process	Elec Chip Fab: Solidstate Chiller	employee	New	157.04	15	\$92.30	15%	75%	\$0.05	181.56	181.21	7th Power Plan
Electronic Equipment Mfg	Process	Elec Chip Fab: Eliminate Exhaust	employee	New	32.84	15	\$7.07	15%	75%	\$0.02	37.95	37.89	7th Power Plan
Electronic Equipment Mfg	Process	Elec Chip Fab: Exhaust Injector	employee	New	65.64	15	\$34.13	15%	75%	\$0.04	75.86	75.74	7th Power Plan
Electronic Equipment Mfg	Process	Elec Chip Fab: Reduce Gas Pressure	employee	New	66.34	15	\$0.68	15%	75%	\$0.00	76.49	76.46	7th Power Plan
Electronic Equipment Mfg	Motors	Panel: Hydraulic Press	employee	New	1,257.46	10	\$292.23	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Motors	Wood: Replace Pneumatic Conveyor	employee	New	1,327.52	10	\$21.89	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Process	Metal: New Arc Furnace	employee	New	1,701.09	10	\$180.43	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Process	Paper: Premium Control Large Material	employee	New	418.52	10	\$213.36	0%	0%	\$0.06	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Process	Paper: Efficient Pulp Screen	employee	New	336.41	10	\$70.28	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Process	Kraft: Effluent Treatment System	employee	New	338.09	10	\$28.81	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Motors	Kraft: Efficient Agitator	employee	New	2,274.15	10	\$218.07	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Process	Mech Pulp: Premium Process	employee	New	3.77	5	\$0.49	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Motors	Mech Pulp: Refiner Plate Improvement	employee	New	19.95	1	\$0.83	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Cooling	Transformer - High Efficiency	employee	New	172.88	10	\$116.35	15%	15%	\$0.01	0.00	0.00	7th Power Plan

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Electronic Equipment Mfg	Heating	Transformer - High Efficiency	employee	New	416.85	10	\$116.35	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Ventilation	Transformer - High Efficiency	employee	New	8.09	10	\$116.35	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Interior Lighting	Transformer - High Efficiency	employee	New	27.50	10	\$116.35	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Exterior Lighting	Transformer - High Efficiency	employee	New	5.99	10	\$116.35	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Motors	Transformer - High Efficiency	employee	New	106.37	10	\$116.35	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Process	Transformer - High Efficiency	employee	New	167.44	10	\$116.35	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Miscellaneous	Transformer - High Efficiency	employee	New	65.75	10	\$116.35	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Cooling	Strategic Energy Management	employee	New	493.46	3	\$714.57	0%	5%	\$0.07	0.87	0.91	AEG Research
Electronic Equipment Mfg	Heating	Strategic Energy Management	employee	New	1,198.80	3	\$714.57	0%	5%	\$0.07	2.24	2.25	AEG Research
Electronic Equipment Mfg	Ventilation	Strategic Energy Management	employee	New	23.27	3	\$714.57	0%	5%	\$0.07	0.28	0.34	AEG Research
Electronic Equipment Mfg	Interior Lighting	Strategic Energy Management	employee	New	79.45	3	\$714.57	0%	5%	\$0.07	0.72	1.09	AEG Research
Electronic Equipment Mfg	Exterior Lighting	Strategic Energy Management	employee	New	17.29	3	\$714.57	0%	5%	\$0.07	0.16	0.25	AEG Research
Electronic Equipment Mfg	Motors	Strategic Energy Management	employee	New	307.30	3	\$714.57	0%	5%	\$0.07	2.86	2.87	AEG Research
Electronic Equipment Mfg	Process	Strategic Energy Management	employee	New	483.70	3	\$714.57	0%	5%	\$0.07	4.47	4.49	AEG Research
Electronic Equipment Mfg	Miscellaneous	Strategic Energy Management	employee	New	189.95	3	\$714.57	0%	5%	\$0.07	2.16	1.46	AEG Research
Electronic Equipment Mfg	Interior Lighting	Commissioning	employee	New	91.65	3	\$533.58	5%	39%	\$0.12	5.64	8.52	AEG Research
Electronic Equipment Mfg	Exterior Lighting	Commissioning	employee	New	19.95	3	\$533.58	5%	39%	\$0.12	1.29	1.97	AEG Research
Electronic Equipment Mfg	Motors	Commissioning	employee	New	354.51	3	\$533.58	5%	39%	\$0.12	22.45	22.52	AEG Research
Electronic Equipment Mfg	Process	Commissioning	employee	New	558.00	3	\$533.58	5%	39%	\$0.12	35.08	35.25	AEG Research

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Electronic Equipment Mfg	Miscellaneous	Commissioning	employee	New	219.13	3	\$533.58	5%	39%	\$0.12	16.98	11.45	AEG Research
Electronic Equipment Mfg	Interior Lighting	Retrocommissioning	employee	New	91.67	3	\$338.73	0%	0%	\$0.08	0.00	0.00	AEG Research
Electronic Equipment Mfg	Exterior Lighting	Retrocommissioning	employee	New	19.95	3	\$338.73	0%	0%	\$0.08	0.00	0.00	AEG Research
Electronic Equipment Mfg	Motors	Retrocommissioning	employee	New	354.58	3	\$338.73	0%	0%	\$0.08	0.00	0.00	AEG Research
Electronic Equipment Mfg	Process	Retrocommissioning	employee	New	558.12	3	\$338.73	0%	0%	\$0.08	0.00	0.00	AEG Research
Electronic Equipment Mfg	Miscellaneous	Retrocommissioning	employee	New	219.17	3	\$338.73	0%	0%	\$0.08	0.00	0.00	AEG Research
Electronic Equipment Mfg	Motors	Municipal Sewage Treatment	employee	New	13.20	12	\$7.23	0%	0%	\$0.05	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Motors	Municipal Water Supply Treatment	employee	New	0.00	12	\$0.00	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Industrial Machinery	Cooling	Insulation - Ceiling	sqft	Existing	0.18	45	\$1.28	15%	25%	\$0.11	32.97	36.21	Building Energy Simulation Tool
Industrial Machinery	Heating	Insulation - Ceiling	sqft	Existing	0.40	45	\$1.28	15%	25%	\$0.11	82.27	85.46	Building Energy Simulation Tool
Industrial Machinery	Ventilation	Insulation - Ceiling	sqft	Existing	0.01	45	\$1.28	15%	25%	\$0.11	12.64	15.22	Building Energy Simulation Tool
Industrial Machinery	Cooling	Insulation - Ducting	sqft	Existing	0.07	20	\$0.84	15%	25%	\$0.62	12.73	14.06	Building Energy Simulation Tool
Industrial Machinery	Heating	Insulation - Ducting	sqft	Existing	0.02	20	\$0.84	15%	25%	\$0.62	3.45	3.60	Building Energy Simulation Tool
Industrial Machinery	Ventilation	Insulation - Ducting	sqft	Existing	0.00	20	\$0.84	15%	25%	\$0.62	0.53	0.64	Building Energy Simulation Tool
Industrial Machinery	Cooling	Insulation - Wall Cavity	sqft	Existing	0.00	45	\$0.15	45%	50%	\$0.01	0.28	0.30	Building Energy Simulation Tool
Industrial Machinery	Heating	Insulation - Wall Cavity	sqft	Existing	0.58	45	\$0.15	45%	50%	\$0.01	60.07	60.20	Building Energy Simulation Tool
Industrial Machinery	Ventilation	Insulation - Wall Cavity	sqft	Existing	0.02	45	\$0.15	45%	50%	\$0.01	8.60	10.24	Building Energy Simulation Tool
Industrial Machinery	Cooling	HVAC - Duct Repair and Sealing	sqft	Existing	0.02	18	\$0.00	15%	25%	\$0.00	4.66	4.90	Building Energy Simulation Tool
Industrial Machinery	Heating	HVAC - Duct Repair and Sealing	sqft	Existing	0.04	18	\$0.00	15%	25%	\$0.00	8.47	8.48	Building Energy Simulation Tool

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Industrial Machinery	Ventilation	HVAC - Duct Repair and Sealing	sqft	Existing	0.00	18	\$0.00	15%	25%	\$0.00	1.21	1.44	Building Energy Simulation Tool
Industrial Machinery	Cooling	Chiller - Chilled Water Reset	sqft	Existing	0.07	10	\$0.01	15%	45%	\$0.02	10.75	11.64	AEG-BEST
Industrial Machinery	Cooling	Chiller - Chilled Water Variable-Flow System	sqft	Existing	0.36	15	\$0.50	15%	60%	\$0.11	85.30	94.94	AEG-BEST
Industrial Machinery	Cooling	Chiller - Variable Speed Fans	sqft	Existing	0.14	15	\$0.03	15%	75%	\$0.02	43.40	47.03	New Jersey TRM
Industrial Machinery	Cooling	HVAC - Economizer	sqft	Existing	0.23	10	\$0.25	18%	30%	\$0.11	44.68	49.89	AEG-BEST
Industrial Machinery	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.25	15%	35%	\$7.50	4.93	6.37	7th Power Plan
Industrial Machinery	Cooling	Destratification Fans (HVLS)	sqft	Existing	0.25	15	\$0.63	15%	50%	\$0.04	173.69	187.77	AEG Research
Industrial Machinery	Heating	Destratification Fans (HVLS)	sqft	Existing	1.05	15	\$0.63	15%	50%	\$0.04	823.86	829.66	AEG Research
Industrial Machinery	Cooling	RTU - Maintenance	sqft	Existing	0.12	3	\$0.07	15%	75%	\$0.15	97.30	109.89	AEG Research
Industrial Machinery	Cooling	Thermostat - WiFi/Interactive	sqft	Existing	0.36	5	\$0.66	5%	15%	\$0.10	66.77	72.70	7th Power Plan
Industrial Machinery	Heating	Thermostat - WiFi/Interactive	sqft	Existing	0.81	5	\$0.66	5%	15%	\$0.10	166.50	171.56	7th Power Plan
Industrial Machinery	Ventilation	Thermostat - WiFi/Interactive	sqft	Existing	0.03	5	\$0.66	5%	15%	\$0.10	25.59	30.55	7th Power Plan
Industrial Machinery	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.27	15	\$0.35	7%	33%	\$0.08	327.52	413.73	7th Power Plan
Industrial Machinery	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.36	15	\$0.58	7%	33%	\$0.10	434.50	565.97	7th Power Plan
Industrial Machinery	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	Existing	0.02	15	\$0.00	1%	2%	\$0.01	1.65	2.42	7th Power Plan
Industrial Machinery	Interior Lighting	Interior Lighting - Timers and Timers	sqft	Existing	0.00	8	\$0.00	7%	7%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Industrial Machinery	Interior Lighting	Interior Lighting - Skylights	sqft	Existing	0.00	15	\$1.01	15%	23%	\$0.00	0.00	0.00	AEG Research
Industrial Machinery	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	sqft	Existing	0.04	16	\$1.81	5%	40%	\$2.85	52.44	85.20	7th Power Plan
Industrial Machinery	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	Existing	0.04	11	\$0.00	15%	50%	\$0.01	54.70	78.17	Illinois TRM

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Industrial Machinery	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	sqft	Existing	0.05	8	\$0.03	15%	25%	\$0.07	65.85	101.54	7th Power Plan
Industrial Machinery	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	Existing	0.03	8	\$0.02	33%	60%	\$0.07	91.42	145.11	Pacific Gas and Electric Research
Industrial Machinery	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	Existing	0.03	7	\$1.19	15%	30%	\$3.70	57.00	95.90	AEG Research
Industrial Machinery	Process	Process - Conductivity Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Industrial Machinery	Process	Process - Timers and Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Industrial Machinery	Motors	Process - Timers and Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Industrial Machinery	Process	Refrigeration - Floating Head Pressure	employee	Existing	24.42	15	\$23.79	20%	50%	\$0.08	27.47	27.53	RTF Workbook
Industrial Machinery	Process	Refrigeration - System Optimization	employee	Existing	39.19	15	\$16.75	20%	50%	\$0.04	44.13	44.13	AEG Research
Industrial Machinery	Motors	Pumping System - Equipment Upgrade	employee	Existing	238.31	10	\$35.75	9%	38%	\$0.02	253.33	263.66	7th Power Plan
Industrial Machinery	Motors	Pumping System - System Optimization	employee	Existing	173.59	12	\$54.48	9%	38%	\$0.03	178.06	187.45	UNIDO Study on Industrial Energy Efficiency
Industrial Machinery	Motors	Pumping System - Variable Speed Drive	employee	Existing	172.80	10	\$56.68	9%	38%	\$0.03	176.93	186.93	UNIDO Study on Industrial Energy Efficiency
Industrial Machinery	Motors	Fan System - Equipment Upgrade	employee	Existing	307.07	10	\$31.38	9%	38%	\$0.01	318.72	327.40	UNIDO Study on Industrial Energy Efficiency
Industrial Machinery	Motors	Fan System - Flow Optimization	employee	Existing	358.40	10	\$51.92	9%	38%	\$0.02	370.50	383.82	UNIDO Study on Industrial Energy Efficiency
Industrial Machinery	Motors	Fan System - Variable Speed Drive	employee	Existing	525.75	10	\$261.25	9%	38%	\$0.05	534.25	572.99	UNIDO Study on Industrial Energy Efficiency
Industrial Machinery	Motors	Compressed Air - Equipment Upgrade	employee	Existing	872.43	10	\$63.48	17%	50%	\$0.01	1,097.80	1,097.80	7th Power Plan
Industrial Machinery	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	Existing	0.00	15	\$0.00	16%	38%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Industrial Machinery	Motors	Compressed Air - Refrigerated Cycling Dryers	employee	Existing	0.00	10	\$0.00	16%	30%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Industrial Machinery	Motors	Compressed Air - System Controls	employee	Existing	184.97	10	\$45.39	9%	38%	\$0.03	195.22	206.90	UNIDO Study on Industrial Energy Efficiency
Industrial Machinery	Motors	Compressed Air - Leak Management Program	employee	Existing	486.70	10	\$45.63	18%	75%	\$0.01	1,043.59	1,061.49	7th Power Plan

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Industrial Machinery	Motors	Compressed Air - Variable Speed Drive	employee	Existing	331.81	15	\$278.28	26%	45%	\$0.06	229.69	253.36	UNIDO Study on Industrial Energy Efficiency
Industrial Machinery	Motors	Compressed Air - Low Pressure-Drop Filters	employee	Existing	11.37	10	\$4.29	17%	50%	\$0.04	13.93	14.97	Illinois TRM
Industrial Machinery	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	Existing	69.88	10	\$13.91	17%	50%	\$0.02	86.28	90.84	UNIDO Study on Industrial Energy Efficiency
Industrial Machinery	Motors	Compressed Air - Outside Air Intake	employee	Existing	0.00	20	\$0.00	17%	50%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Industrial Machinery	Motors	Compressed Air - Receiver Capacity Addition	employee	Existing	67.47	15	\$38.26	17%	50%	\$0.04	82.27	89.35	UNIDO Study on Industrial Energy Efficiency
Industrial Machinery	Motors	Material Handling - Variable Speed Drive	employee	Existing	689.34	10	\$257.78	25%	45%	\$0.04	494.50	524.13	7th Power Plan
Industrial Machinery	Motors	Motors - Green Rewind (<100 HP)	employee	Existing	21.71	10	\$9.87	10%	50%	\$0.05	123.97	132.67	7th Power Plan
Industrial Machinery	Motors	Motors - Green Rewind (100 HP+)	employee	Existing	12.27	10	\$3.50	6%	25%	\$0.03	33.52	35.40	7th Power Plan
Industrial Machinery	Motors	Switch from Belt Drive to Direct Drive	employee	Existing	187.34	12	\$43.31	16%	25%	\$0.02	257.31	268.49	2015-mdu-irp-report---volume-iii.pdf
Industrial Machinery	Motors	Motors - Synchronous Belts	employee	Existing	49.46	10	\$13.03	16%	36%	\$0.03	145.98	155.23	7th Power Plan
Industrial Machinery	Miscellaneous	Agriculture - Engine Block Timer	employee	Existing	1,064.98	3	\$13.14	0%	0%	\$0.00	0.00	0.00	Vermont TRM
Industrial Machinery	Motors	Agriculture - Live Stock Waterer	employee	Existing	558.09	10	\$314.85	0%	0%	\$0.06	0.00	0.00	Ontario Power TRM
Industrial Machinery	Process	Dairy - Milk Precoolers	employee	Existing	162.80	15	\$75.70	0%	0%	\$0.04	0.00	0.00	Ontario Power TRM
Industrial Machinery	Process	Clean Room: Change Filter Strategy	employee	Existing	88.50	15	\$0.65	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Industrial Machinery	Process	Clean Room: Chiller Optimize	employee	Existing	48.41	15	\$4.48	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Industrial Machinery	Process	Clean Room: Clean Room HVAC	employee	Existing	29.40	15	\$5.41	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Industrial Machinery	Process	Elec Chip Fab: Solidstate Chiller	employee	Existing	29.30	15	\$17.00	0%	0%	\$0.05	0.00	0.00	7th Power Plan
Industrial Machinery	Process	Elec Chip Fab: Eliminate Exhaust	employee	Existing	11.06	15	\$2.35	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Industrial Machinery	Process	Elec Chip Fab: Exhaust Injector	employee	Existing	22.06	15	\$11.33	0%	0%	\$0.04	0.00	0.00	7th Power Plan

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Industrial Machinery	Process	Elec Chip Fab: Reduce Gas Pressure	employee	Existing	22.13	15	\$0.23	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Industrial Machinery	Motors	Panel: Hydraulic Press	employee	Existing	1,048.10	10	\$257.63	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Industrial Machinery	Motors	Wood: Replace Pneumatic Conveyor	employee	Existing	1,170.33	10	\$19.29	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Industrial Machinery	Process	Metal: New Arc Furnace	employee	Existing	750.27	10	\$78.76	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Industrial Machinery	Process	Paper: Premium Control Large Material	employee	Existing	122.68	10	\$61.56	0%	0%	\$0.06	0.00	0.00	7th Power Plan
Industrial Machinery	Process	Paper: Efficient Pulp Screen	employee	Existing	98.57	10	\$20.28	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Industrial Machinery	Process	Kraft: Effluent Treatment System	employee	Existing	98.57	10	\$8.31	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Industrial Machinery	Motors	Kraft: Efficient Agitator	employee	Existing	1,924.29	10	\$192.25	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Industrial Machinery	Process	Mech Pulp: Premium Process	employee	Existing	1.10	5	\$0.14	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Industrial Machinery	Motors	Mech Pulp: Refiner Plate Improvement	employee	Existing	16.43	1	\$0.73	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Industrial Machinery	Cooling	Transformer - High Efficiency	employee	Existing	109.49	10	\$77.00	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Industrial Machinery	Heating	Transformer - High Efficiency	employee	Existing	245.09	10	\$77.00	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Industrial Machinery	Ventilation	Transformer - High Efficiency	employee	Existing	7.57	10	\$77.00	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Industrial Machinery	Interior Lighting	Transformer - High Efficiency	employee	Existing	29.71	10	\$77.00	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Industrial Machinery	Exterior Lighting	Transformer - High Efficiency	employee	Existing	6.42	10	\$77.00	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Industrial Machinery	Motors	Transformer - High Efficiency	employee	Existing	141.80	10	\$77.00	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Industrial Machinery	Process	Transformer - High Efficiency	employee	Existing	49.04	10	\$77.00	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Industrial Machinery	Miscellaneous	Transformer - High Efficiency	employee	Existing	40.31	10	\$77.00	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Industrial Machinery	Cooling	Strategic Energy Management	employee	Existing	299.63	3	\$472.90	0%	5%	\$0.07	9.19	10.14	AEG Research

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Industrial Machinery	Heating	Strategic Energy Management	employee	Existing	698.99	3	\$472.90	0%	5%	\$0.07	23.91	24.94	AEG Research
Industrial Machinery	Ventilation	Strategic Energy Management	employee	Existing	21.60	3	\$472.90	0%	5%	\$0.07	3.68	4.44	AEG Research
Industrial Machinery	Interior Lighting	Strategic Energy Management	employee	Existing	85.09	3	\$472.90	0%	5%	\$0.07	11.78	16.97	AEG Research
Industrial Machinery	Exterior Lighting	Strategic Energy Management	employee	Existing	18.38	3	\$472.90	0%	5%	\$0.07	2.61	3.78	AEG Research
Industrial Machinery	Motors	Strategic Energy Management	employee	Existing	405.68	3	\$472.90	0%	5%	\$0.07	67.56	72.65	AEG Research
Industrial Machinery	Process	Strategic Energy Management	employee	Existing	140.24	3	\$472.90	0%	5%	\$0.07	24.28	24.56	AEG Research
Industrial Machinery	Miscellaneous	Strategic Energy Management	employee	Existing	115.17	3	\$472.90	0%	5%	\$0.07	25.29	19.82	AEG Research
Industrial Machinery	Interior Lighting	Commissioning	employee	Existing	98.07	3	\$403.16	0%	0%	\$0.12	0.00	0.00	AEG Research
Industrial Machinery	Exterior Lighting	Commissioning	employee	Existing	21.18	3	\$403.16	0%	0%	\$0.12	0.00	0.00	AEG Research
Industrial Machinery	Motors	Commissioning	employee	Existing	467.52	3	\$403.16	0%	0%	\$0.12	0.00	0.00	AEG Research
Industrial Machinery	Process	Commissioning	employee	Existing	161.61	3	\$403.16	0%	0%	\$0.12	0.00	0.00	AEG Research
Industrial Machinery	Miscellaneous	Commissioning	employee	Existing	132.70	3	\$403.16	0%	0%	\$0.12	0.00	0.00	AEG Research
Industrial Machinery	Interior Lighting	Retrocommissioning	employee	Existing	99.02	3	\$255.93	5%	39%	\$0.08	94.01	134.07	AEG Research
Industrial Machinery	Exterior Lighting	Retrocommissioning	employee	Existing	21.39	3	\$255.93	5%	39%	\$0.08	20.82	29.83	AEG Research
Industrial Machinery	Motors	Retrocommissioning	employee	Existing	472.67	3	\$255.93	5%	39%	\$0.08	539.35	574.51	AEG Research
Industrial Machinery	Process	Retrocommissioning	employee	Existing	163.45	3	\$255.93	5%	39%	\$0.08	193.80	194.22	AEG Research
Industrial Machinery	Miscellaneous	Retrocommissioning	employee	Existing	134.36	3	\$255.93	5%	39%	\$0.08	201.92	156.93	AEG Research
Industrial Machinery	Motors	Municipal Sewage Treatment	employee	Existing	30.16	12	\$17.97	0%	0%	\$0.05	0.00	0.00	7th Power Plan
Industrial Machinery	Motors	Municipal Water Supply Treatment	employee	Existing	0.00	12	\$0.00	0%	0%	\$0.00	0.00	0.00	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Industrial Machinery	Cooling	Insulation - Ceiling	sqft	New	0.17	45	\$1.28	15%	25%	\$0.12	14.68	14.78	Building Energy Simulation Tool
Industrial Machinery	Heating	Insulation - Ceiling	sqft	New	0.40	45	\$1.28	15%	25%	\$0.12	36.18	36.06	Building Energy Simulation Tool
Industrial Machinery	Ventilation	Insulation - Ceiling	sqft	New	0.01	45	\$1.28	15%	25%	\$0.12	4.47	4.89	Building Energy Simulation Tool
Industrial Machinery	Cooling	Insulation - Ducting	sqft	New	0.07	20	\$0.84	15%	25%	\$0.66	5.70	5.75	Building Energy Simulation Tool
Industrial Machinery	Heating	Insulation - Ducting	sqft	New	0.02	20	\$0.84	15%	25%	\$0.66	1.53	1.52	Building Energy Simulation Tool
Industrial Machinery	Ventilation	Insulation - Ducting	sqft	New	0.00	20	\$0.84	15%	25%	\$0.66	0.19	0.21	Building Energy Simulation Tool
Industrial Machinery	Cooling	Insulation - Wall Cavity	sqft	New	0.00	45	\$0.15	45%	50%	\$0.01	0.11	0.12	Building Energy Simulation Tool
Industrial Machinery	Heating	Insulation - Wall Cavity	sqft	New	0.54	45	\$0.15	45%	50%	\$0.01	24.50	24.52	Building Energy Simulation Tool
Industrial Machinery	Ventilation	Insulation - Wall Cavity	sqft	New	0.01	45	\$0.15	45%	50%	\$0.01	2.99	3.27	Building Energy Simulation Tool
Industrial Machinery	Cooling	HVAC - Duct Repair and Sealing	sqft	New	0.02	18	\$0.00	15%	25%	\$0.00	1.84	1.86	Building Energy Simulation Tool
Industrial Machinery	Heating	HVAC - Duct Repair and Sealing	sqft	New	0.04	18	\$0.00	15%	25%	\$0.00	3.39	3.39	Building Energy Simulation Tool
Industrial Machinery	Ventilation	HVAC - Duct Repair and Sealing	sqft	New	0.00	18	\$0.00	15%	25%	\$0.00	0.41	0.45	Building Energy Simulation Tool
Industrial Machinery	Cooling	Chiller - Chilled Water Reset	sqft	New	0.05	10	\$0.01	15%	45%	\$0.02	1.35	1.40	AEG-BEST
Industrial Machinery	Cooling	Chiller - Chilled Water Variable-Flow System	sqft	New	0.30	15	\$0.50	15%	60%	\$0.13	14.38	14.72	AEG-BEST
Industrial Machinery	Cooling	Chiller - Variable Speed Fans	sqft	New	0.11	15	\$0.03	15%	75%	\$0.02	7.05	7.25	New Jersey TRM
Industrial Machinery	Cooling	HVAC - Economizer	sqft	New	0.21	10	\$0.25	18%	30%	\$0.12	6.38	6.57	AEG-BEST
Industrial Machinery	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.25	15%	35%	\$8.97	0.78	0.92	7th Power Plan
Industrial Machinery	Cooling	Destratification Fans (HVLS)	sqft	New	0.22	15	\$0.63	15%	50%	\$0.04	31.52	32.38	AEG Research
Industrial Machinery	Heating	Destratification Fans (HVLS)	sqft	New	0.99	15	\$0.63	15%	50%	\$0.04	150.64	150.96	AEG Research

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Industrial Machinery	Cooling	RTU - Maintenance	sqft	New	0.12	3	\$0.07	15%	75%	\$0.16	2.12	2.26	AEG Research
Industrial Machinery	Cooling	Thermostat - WiFi/Interactive	sqft	New	0.34	5	\$0.66	5%	15%	\$0.10	3.83	3.94	7th Power Plan
Industrial Machinery	Heating	Thermostat - WiFi/Interactive	sqft	New	0.79	5	\$0.66	5%	15%	\$0.10	9.45	9.43	7th Power Plan
Industrial Machinery	Ventilation	Thermostat - WiFi/Interactive	sqft	New	0.02	5	\$0.66	5%	15%	\$0.10	1.17	1.41	7th Power Plan
Industrial Machinery	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.21	15	\$0.35	22%	41%	\$0.08	194.94	227.83	7th Power Plan
Industrial Machinery	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.29	15	\$0.58	22%	41%	\$0.10	264.08	310.29	7th Power Plan
Industrial Machinery	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	New	0.02	15	\$0.00	1%	2%	\$0.01	0.23	0.30	7th Power Plan
Industrial Machinery	Interior Lighting	Interior Lighting - Timeclocks and Timers	sqft	New	0.00	8	\$0.00	7%	7%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Industrial Machinery	Interior Lighting	Interior Lighting - Skylights	sqft	New	0.00	15	\$1.01	18%	24%	\$0.00	0.00	0.00	AEG Research
Industrial Machinery	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	sqft	New	0.03	16	\$1.81	5%	40%	\$2.85	10.31	13.25	7th Power Plan
Industrial Machinery	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	New	0.03	11	\$0.00	15%	50%	\$0.01	8.03	10.41	Illinois TRM
Industrial Machinery	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	sqft	New	0.04	8	\$0.03	15%	25%	\$0.07	7.39	10.30	7th Power Plan
Industrial Machinery	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	New	0.02	8	\$0.02	44%	60%	\$0.07	6.32	8.76	Pacific Gas and Electric Research
Industrial Machinery	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	New	0.02	7	\$1.19	15%	30%	\$3.69	6.42	8.97	AEG Research
Industrial Machinery	Process	Process - Conductivity Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Industrial Machinery	Process	Process - Timers and Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Industrial Machinery	Motors	Process - Timers and Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Industrial Machinery	Process	Refrigeration - Floating Head Pressure	employee	New	24.47	15	\$16.81	20%	50%	\$0.06	5.33	5.33	RTF Workbook
Industrial Machinery	Process	Refrigeration - System Optimization	employee	New	39.19	15	\$5.88	20%	50%	\$0.01	8.53	8.53	AEG Research

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Industrial Machinery	Motors	Pumping System - Equipment Upgrade	employee	New	246.35	10	\$35.75	9%	38%	\$0.02	40.15	39.88	7th Power Plan
Industrial Machinery	Motors	Pumping System - System Optimization	employee	New	183.40	12	\$54.48	9%	38%	\$0.03	49.23	48.64	UNIDO Study on Industrial Energy Efficiency
Industrial Machinery	Motors	Pumping System - Variable Speed Drive	employee	New	183.04	10	\$56.68	9%	38%	\$0.03	45.39	44.83	UNIDO Study on Industrial Energy Efficiency
Industrial Machinery	Motors	Fan System - Equipment Upgrade	employee	New	317.23	10	\$31.38	9%	38%	\$0.01	78.29	77.72	UNIDO Study on Industrial Energy Efficiency
Industrial Machinery	Motors	Fan System - Flow Optimization	employee	New	373.87	10	\$51.92	9%	38%	\$0.02	92.34	91.60	UNIDO Study on Industrial Energy Efficiency
Industrial Machinery	Motors	Fan System - Variable Speed Drive	employee	New	563.40	10	\$261.25	9%	38%	\$0.05	140.01	137.99	UNIDO Study on Industrial Energy Efficiency
Industrial Machinery	Motors	Compressed Air - Equipment Upgrade	employee	New	872.43	10	\$63.48	17%	50%	\$0.01	164.54	164.54	7th Power Plan
Industrial Machinery	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	New	0.00	15	\$0.00	16%	38%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Industrial Machinery	Motors	Compressed Air - Refrigerated Cycling Dryers	employee	New	0.00	10	\$0.00	16%	30%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Industrial Machinery	Motors	Compressed Air - System Controls	employee	New	194.34	10	\$45.39	9%	38%	\$0.03	31.72	31.48	UNIDO Study on Industrial Energy Efficiency
Industrial Machinery	Motors	Compressed Air - Leak Management Program	employee	New	494.79	10	\$45.63	18%	75%	\$0.01	160.50	159.99	7th Power Plan
Industrial Machinery	Motors	Compressed Air - Variable Speed Drive	employee	New	358.04	15	\$278.28	26%	45%	\$0.06	50.50	49.92	UNIDO Study on Industrial Energy Efficiency
Industrial Machinery	Motors	Compressed Air - Low Pressure-Drop Filters	employee	New	12.07	10	\$4.29	17%	50%	\$0.04	2.30	2.28	Illinois TRM
Industrial Machinery	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	New	73.10	10	\$13.91	17%	50%	\$0.02	13.91	13.81	UNIDO Study on Industrial Energy Efficiency
Industrial Machinery	Motors	Compressed Air - Outside Air Intake	employee	New	0.00	20	\$0.00	17%	50%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Industrial Machinery	Motors	Compressed Air - Receiver Capacity Addition	employee	New	72.10	15	\$38.26	17%	50%	\$0.04	17.76	17.58	UNIDO Study on Industrial Energy Efficiency
Industrial Machinery	Motors	Material Handling - Variable Speed Drive	employee	New	731.97	10	\$257.78	25%	45%	\$0.04	127.43	125.81	7th Power Plan
Industrial Machinery	Motors	Motors - Green Rewind (<100 HP)	employee	New	23.22	10	\$9.87	10%	50%	\$0.05	32.39	31.93	7th Power Plan
Industrial Machinery	Motors	Motors - Green Rewind (100 HP+)	employee	New	13.00	10	\$3.50	6%	25%	\$0.03	8.59	8.49	7th Power Plan

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Industrial Machinery	Motors	Switch from Belt Drive to Direct Drive	employee	New	196.23	12	\$43.31	16%	25%	\$0.02	70.11	69.41	2015-mdu-irp-report---volume-iii.pdf
Industrial Machinery	Motors	Motors - Synchronous Belts	employee	New	52.13	10	\$13.03	16%	36%	\$0.03	23.84	23.64	7th Power Plan
Industrial Machinery	Miscellaneous	Agriculture - Engine Block Timer	employee	New	1,064.98	3	\$13.14	0%	0%	\$0.00	0.00	0.00	Vermont TRM
Industrial Machinery	Motors	Agriculture - Live Stock Waterer	employee	New	602.20	10	\$314.85	0%	0%	\$0.06	0.00	0.00	Ontario Power TRM
Industrial Machinery	Process	Dairy - Milk Precoolers	employee	New	163.14	15	\$75.70	0%	0%	\$0.04	0.00	0.00	Ontario Power TRM
Industrial Machinery	Process	Clean Room: Change Filter Strategy	employee	New	88.50	15	\$0.65	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Industrial Machinery	Process	Clean Room: Chiller Optimize	employee	New	48.41	15	\$4.48	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Industrial Machinery	Process	Clean Room: Clean Room HVAC	employee	New	29.36	15	\$5.41	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Industrial Machinery	Process	Elec Chip Fab: Solidstate Chiller	employee	New	29.36	15	\$17.00	0%	0%	\$0.05	0.00	0.00	7th Power Plan
Industrial Machinery	Process	Elec Chip Fab: Eliminate Exhaust	employee	New	11.05	15	\$2.35	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Industrial Machinery	Process	Elec Chip Fab: Exhaust Injector	employee	New	22.10	15	\$11.33	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Industrial Machinery	Process	Elec Chip Fab: Reduce Gas Pressure	employee	New	22.13	15	\$0.23	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Industrial Machinery	Motors	Panel: Hydraulic Press	employee	New	1,099.63	10	\$257.63	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Industrial Machinery	Motors	Wood: Replace Pneumatic Conveyor	employee	New	1,170.33	10	\$19.29	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Industrial Machinery	Process	Metal: New Arc Furnace	employee	New	750.27	10	\$78.76	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Industrial Machinery	Process	Paper: Premium Control Large Material	employee	New	122.93	10	\$61.56	0%	0%	\$0.06	0.00	0.00	7th Power Plan
Industrial Machinery	Process	Paper: Efficient Pulp Screen	employee	New	98.46	10	\$20.28	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Industrial Machinery	Process	Kraft: Effluent Treatment System	employee	New	98.57	10	\$8.31	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Industrial Machinery	Motors	Kraft: Efficient Agitator	employee	New	2,002.67	10	\$192.25	0%	0%	\$0.01	0.00	0.00	7th Power Plan

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Industrial Machinery	Process	Mech Pulp: Premium Process	employee	New	1.10	5	\$0.14	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Industrial Machinery	Motors	Mech Pulp: Refiner Plate Improvement	employee	New	17.45	1	\$0.73	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Industrial Machinery	Cooling	Transformer - High Efficiency	employee	New	99.07	10	\$74.20	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Industrial Machinery	Heating	Transformer - High Efficiency	employee	New	238.27	10	\$74.20	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Industrial Machinery	Ventilation	Transformer - High Efficiency	employee	New	4.63	10	\$74.20	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Industrial Machinery	Interior Lighting	Transformer - High Efficiency	employee	New	23.47	10	\$74.20	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Industrial Machinery	Exterior Lighting	Transformer - High Efficiency	employee	New	5.11	10	\$74.20	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Industrial Machinery	Motors	Transformer - High Efficiency	employee	New	153.58	10	\$74.20	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Industrial Machinery	Process	Transformer - High Efficiency	employee	New	49.20	10	\$74.20	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Industrial Machinery	Miscellaneous	Transformer - High Efficiency	employee	New	38.18	10	\$74.20	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Industrial Machinery	Cooling	Strategic Energy Management	employee	New	282.08	3	\$455.70	0%	5%	\$0.07	0.19	0.20	AEG Research
Industrial Machinery	Heating	Strategic Energy Management	employee	New	685.22	3	\$455.70	0%	5%	\$0.07	0.49	0.49	AEG Research
Industrial Machinery	Ventilation	Strategic Energy Management	employee	New	13.31	3	\$455.70	0%	5%	\$0.07	0.06	0.08	AEG Research
Industrial Machinery	Interior Lighting	Strategic Energy Management	employee	New	67.79	3	\$455.70	0%	5%	\$0.07	0.23	0.35	AEG Research
Industrial Machinery	Exterior Lighting	Strategic Energy Management	employee	New	14.76	3	\$455.70	0%	5%	\$0.07	0.05	0.08	AEG Research
Industrial Machinery	Motors	Strategic Energy Management	employee	New	443.67	3	\$455.70	0%	5%	\$0.07	1.58	1.58	AEG Research
Industrial Machinery	Process	Strategic Energy Management	employee	New	142.13	3	\$455.70	0%	5%	\$0.07	0.50	0.50	AEG Research
Industrial Machinery	Miscellaneous	Strategic Energy Management	employee	New	110.30	3	\$455.70	0%	5%	\$0.07	0.48	0.32	AEG Research
Industrial Machinery	Interior Lighting	Commissioning	employee	New	78.20	3	\$409.19	5%	39%	\$0.12	1.83	2.77	AEG Research

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Industrial Machinery	Exterior Lighting	Commissioning	employee	New	17.02	3	\$409.19	5%	39%	\$0.12	0.42	0.64	AEG Research
Industrial Machinery	Motors	Commissioning	employee	New	511.81	3	\$409.19	5%	39%	\$0.12	12.38	12.43	AEG Research
Industrial Machinery	Process	Commissioning	employee	New	163.96	3	\$409.19	5%	39%	\$0.12	3.91	3.91	AEG Research
Industrial Machinery	Miscellaneous	Commissioning	employee	New	127.24	3	\$409.19	5%	39%	\$0.12	3.75	2.53	AEG Research
Industrial Machinery	Interior Lighting	Retrocommissioning	employee	New	78.22	3	\$259.76	0%	0%	\$0.08	0.00	0.00	AEG Research
Industrial Machinery	Exterior Lighting	Retrocommissioning	employee	New	17.03	3	\$259.76	0%	0%	\$0.08	0.00	0.00	AEG Research
Industrial Machinery	Motors	Retrocommissioning	employee	New	511.92	3	\$259.76	0%	0%	\$0.08	0.00	0.00	AEG Research
Industrial Machinery	Process	Retrocommissioning	employee	New	164.00	3	\$259.76	0%	0%	\$0.08	0.00	0.00	AEG Research
Industrial Machinery	Miscellaneous	Retrocommissioning	employee	New	127.27	3	\$259.76	0%	0%	\$0.08	0.00	0.00	AEG Research
Industrial Machinery	Motors	Municipal Sewage Treatment	employee	New	32.54	12	\$17.97	0%	0%	\$0.05	0.00	0.00	7th Power Plan
Industrial Machinery	Motors	Municipal Water Supply Treatment	employee	New	0.00	12	\$0.00	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Lumber Wood Products	Cooling	Insulation - Ceiling	sqft	Existing	0.18	45	\$1.28	15%	25%	\$0.11	1.26	1.38	Building Energy Simulation Tool
Lumber Wood Products	Heating	Insulation - Ceiling	sqft	Existing	0.40	45	\$1.28	15%	25%	\$0.11	3.12	3.24	Building Energy Simulation Tool
Lumber Wood Products	Ventilation	Insulation - Ceiling	sqft	Existing	0.01	45	\$1.28	15%	25%	\$0.11	0.48	0.58	Building Energy Simulation Tool
Lumber Wood Products	Cooling	Insulation - Ducting	sqft	Existing	0.07	20	\$0.84	15%	25%	\$0.62	0.48	0.53	Building Energy Simulation Tool
Lumber Wood Products	Heating	Insulation - Ducting	sqft	Existing	0.02	20	\$0.84	15%	25%	\$0.62	0.13	0.14	Building Energy Simulation Tool
Lumber Wood Products	Ventilation	Insulation - Ducting	sqft	Existing	0.00	20	\$0.84	15%	25%	\$0.62	0.02	0.02	Building Energy Simulation Tool
Lumber Wood Products	Cooling	Insulation - Wall Cavity	sqft	Existing	0.00	45	\$0.15	45%	50%	\$0.01	0.01	0.01	Building Energy Simulation Tool
Lumber Wood Products	Heating	Insulation - Wall Cavity	sqft	Existing	0.58	45	\$0.15	45%	50%	\$0.01	2.28	2.28	Building Energy Simulation Tool

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Lumber Wood Products	Ventilation	Insulation - Wall Cavity	sqft	Existing	0.02	45	\$0.15	45%	50%	\$0.01	0.33	0.39	Building Energy Simulation Tool
Lumber Wood Products	Cooling	HVAC - Duct Repair and Sealing	sqft	Existing	0.02	18	\$0.00	15%	25%	\$0.00	0.18	0.19	Building Energy Simulation Tool
Lumber Wood Products	Heating	HVAC - Duct Repair and Sealing	sqft	Existing	0.04	18	\$0.00	15%	25%	\$0.00	0.32	0.32	Building Energy Simulation Tool
Lumber Wood Products	Ventilation	HVAC - Duct Repair and Sealing	sqft	Existing	0.00	18	\$0.00	15%	25%	\$0.00	0.05	0.05	Building Energy Simulation Tool
Lumber Wood Products	Cooling	Chiller - Chilled Water Reset	sqft	Existing	0.07	10	\$0.01	15%	45%	\$0.02	0.41	0.44	AEG-BEST
Lumber Wood Products	Cooling	Chiller - Chilled Water Variable-Flow System	sqft	Existing	0.36	15	\$0.50	15%	60%	\$0.11	3.24	3.60	AEG-BEST
Lumber Wood Products	Cooling	Chiller - Variable Speed Fans	sqft	Existing	0.14	15	\$0.03	15%	75%	\$0.02	1.65	1.78	New Jersey TRM
Lumber Wood Products	Cooling	HVAC - Economizer	sqft	Existing	0.06	10	\$0.25	18%	30%	\$0.41	1.62	1.86	AEG-BEST
Lumber Wood Products	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.25	15%	35%	\$7.50	0.19	0.24	7th Power Plan
Lumber Wood Products	Cooling	Destratification Fans (HVLS)	sqft	Existing	0.25	15	\$0.63	15%	50%	\$0.04	6.59	7.12	AEG Research
Lumber Wood Products	Heating	Destratification Fans (HVLS)	sqft	Existing	1.05	15	\$0.63	15%	50%	\$0.04	31.25	31.47	AEG Research
Lumber Wood Products	Cooling	RTU - Maintenance	sqft	Existing	0.12	3	\$0.07	15%	75%	\$0.15	3.73	4.18	AEG Research
Lumber Wood Products	Cooling	Thermostat - WiFi/Interactive	sqft	Existing	0.37	5	\$0.66	5%	15%	\$0.10	2.56	2.78	7th Power Plan
Lumber Wood Products	Heating	Thermostat - WiFi/Interactive	sqft	Existing	0.81	5	\$0.66	5%	15%	\$0.10	6.32	6.51	7th Power Plan
Lumber Wood Products	Ventilation	Thermostat - WiFi/Interactive	sqft	Existing	0.03	5	\$0.66	5%	15%	\$0.10	0.97	1.16	7th Power Plan
Lumber Wood Products	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.07	15	\$0.35	7%	33%	\$0.31	29.59	37.37	7th Power Plan
Lumber Wood Products	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.10	15	\$0.58	7%	33%	\$0.36	39.25	51.13	7th Power Plan
Lumber Wood Products	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	Existing	0.02	15	\$0.00	1%	2%	\$0.01	0.15	0.22	7th Power Plan
Lumber Wood Products	Interior Lighting	Interior Lighting - Timers and Timers	sqft	Existing	0.00	8	\$0.00	7%	7%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx

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Lumber Wood Products	Interior Lighting	Interior Lighting - Skylights	sqft	Existing	0.00	15	\$1.01	15%	23%	\$0.00	0.00	0.00	AEG Research
Lumber Wood Products	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	sqft	Existing	0.04	16	\$1.81	5%	40%	\$2.85	4.72	7.69	7th Power Plan
Lumber Wood Products	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	Existing	0.04	11	\$0.00	15%	50%	\$0.01	4.94	7.06	Illinois TRM
Lumber Wood Products	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	sqft	Existing	0.05	8	\$0.03	15%	25%	\$0.07	5.95	9.17	7th Power Plan
Lumber Wood Products	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	Existing	0.03	8	\$0.02	33%	60%	\$0.07	8.26	13.11	Pacific Gas and Electric Research
Lumber Wood Products	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	Existing	0.03	7	\$1.19	15%	30%	\$3.70	5.13	8.66	AEG Research
Lumber Wood Products	Process	Process - Conductivity Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Process	Process - Timers and Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Motors	Process - Timers and Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Process	Refrigeration - Floating Head Pressure	employee	Existing	6.53	15	\$6.36	20%	50%	\$0.08	2.40	2.40	RTF Workbook
Lumber Wood Products	Process	Refrigeration - System Optimization	employee	Existing	10.47	15	\$4.48	20%	50%	\$0.04	3.84	3.84	AEG Research
Lumber Wood Products	Motors	Pumping System - Equipment Upgrade	employee	Existing	251.53	10	\$40.11	9%	38%	\$0.02	84.66	94.35	7th Power Plan
Lumber Wood Products	Motors	Pumping System - System Optimization	employee	Existing	185.48	12	\$61.13	9%	38%	\$0.03	60.47	66.86	UNIDO Study on Industrial Energy Efficiency
Lumber Wood Products	Motors	Pumping System - Variable Speed Drive	employee	Existing	184.53	10	\$63.59	9%	38%	\$0.03	60.03	66.65	UNIDO Study on Industrial Energy Efficiency
Lumber Wood Products	Motors	Fan System - Equipment Upgrade	employee	Existing	102.47	10	\$11.15	9%	38%	\$0.01	33.66	36.66	UNIDO Study on Industrial Energy Efficiency
Lumber Wood Products	Motors	Fan System - Flow Optimization	employee	Existing	120.81	10	\$18.44	9%	38%	\$0.02	39.65	43.26	UNIDO Study on Industrial Energy Efficiency
Lumber Wood Products	Motors	Fan System - Variable Speed Drive	employee	Existing	176.41	10	\$92.80	9%	38%	\$0.05	56.72	64.39	UNIDO Study on Industrial Energy Efficiency
Lumber Wood Products	Motors	Compressed Air - Equipment Upgrade	employee	Existing	169.51	10	\$13.63	17%	50%	\$0.01	66.90	73.62	7th Power Plan

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Lumber Wood Products	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	Existing	0.00	15	\$0.00	16%	38%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Lumber Wood Products	Motors	Compressed Air - Refrigerated Cycling Dryers	employee	Existing	0.00	10	\$0.00	16%	30%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Lumber Wood Products	Motors	Compressed Air - System Controls	employee	Existing	37.68	10	\$9.74	9%	38%	\$0.03	12.63	14.22	UNIDO Study on Industrial Energy Efficiency
Lumber Wood Products	Motors	Compressed Air - Leak Management Program	employee	Existing	96.36	10	\$9.79	18%	75%	\$0.01	65.10	71.92	7th Power Plan
Lumber Wood Products	Motors	Compressed Air - Variable Speed Drive	employee	Existing	67.79	15	\$59.74	26%	45%	\$0.06	14.89	17.45	UNIDO Study on Industrial Energy Efficiency
Lumber Wood Products	Motors	Compressed Air - Low Pressure-Drop Filters	employee	Existing	2.32	10	\$0.92	17%	50%	\$0.04	0.90	1.03	Illinois TRM
Lumber Wood Products	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	Existing	14.21	10	\$2.99	17%	50%	\$0.02	5.57	6.24	UNIDO Study on Industrial Energy Efficiency
Lumber Wood Products	Motors	Compressed Air - Outside Air Intake	employee	Existing	0.00	20	\$0.00	17%	50%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Lumber Wood Products	Motors	Compressed Air - Receiver Capacity Addition	employee	Existing	13.66	15	\$8.21	17%	50%	\$0.04	5.27	6.13	UNIDO Study on Industrial Energy Efficiency
Lumber Wood Products	Motors	Material Handling - Variable Speed Drive	employee	Existing	1,169.97	10	\$459.79	25%	45%	\$0.04	266.59	297.04	7th Power Plan
Lumber Wood Products	Motors	Motors - Green Rewind (<100 HP)	employee	Existing	15.76	10	\$7.58	10%	50%	\$0.05	35.60	40.32	7th Power Plan
Lumber Wood Products	Motors	Motors - Green Rewind (100 HP+)	employee	Existing	8.98	10	\$2.69	6%	25%	\$0.03	9.74	10.81	7th Power Plan
Lumber Wood Products	Motors	Switch from Belt Drive to Direct Drive	employee	Existing	136.63	12	\$33.29	16%	25%	\$0.02	74.50	81.80	2015-mdu-irp-report---volume-iii.pdf
Lumber Wood Products	Motors	Motors - Synchronous Belts	employee	Existing	36.20	10	\$10.01	16%	36%	\$0.03	42.45	47.85	7th Power Plan
Lumber Wood Products	Miscellaneous	Agriculture - Engine Block Timer	employee	Existing	377.82	3	\$4.66	0%	0%	\$0.00	0.00	0.00	Vermont TRM
Lumber Wood Products	Motors	Agriculture - Live Stock Waterer	employee	Existing	595.95	10	\$353.23	0%	0%	\$0.06	0.00	0.00	Ontario Power TRM
Lumber Wood Products	Process	Dairy - Milk Precoolers	employee	Existing	43.55	15	\$20.22	0%	0%	\$0.04	0.00	0.00	Ontario Power TRM
Lumber Wood Products	Process	Clean Room: Change Filter Strategy	employee	Existing	40.57	15	\$0.30	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Lumber Wood Products	Process	Clean Room: Chiller Optimize	employee	Existing	12.93	15	\$1.20	0%	0%	\$0.01	0.00	0.00	7th Power Plan

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Lumber Wood Products	Process	Clean Room: Clean Room HVAC	employee	Existing	7.85	15	\$1.45	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Lumber Wood Products	Process	Elec Chip Fab: Solidstate Chiller	employee	Existing	7.84	15	\$4.54	0%	0%	\$0.05	0.00	0.00	7th Power Plan
Lumber Wood Products	Process	Elec Chip Fab: Eliminate Exhaust	employee	Existing	5.07	15	\$1.08	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Lumber Wood Products	Process	Elec Chip Fab: Exhaust Injector	employee	Existing	10.13	15	\$5.19	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Lumber Wood Products	Process	Elec Chip Fab: Reduce Gas Pressure	employee	Existing	10.14	15	\$0.10	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Lumber Wood Products	Motors	Panel: Hydraulic Press	employee	Existing	1,772.14	10	\$459.51	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Lumber Wood Products	Motors	Wood: Replace Pneumatic Conveyor	employee	Existing	2,087.45	10	\$34.41	15%	75%	\$0.00	0.00	1,505.33	7th Power Plan
Lumber Wood Products	Process	Metal: New Arc Furnace	employee	Existing	529.29	10	\$55.56	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Lumber Wood Products	Process	Paper: Premium Control Large Material	employee	Existing	57.03	10	\$28.58	0%	0%	\$0.06	0.00	0.00	7th Power Plan
Lumber Wood Products	Process	Paper: Efficient Pulp Screen	employee	Existing	45.76	10	\$9.41	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Lumber Wood Products	Process	Kraft: Effluent Treatment System	employee	Existing	45.76	10	\$3.86	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Lumber Wood Products	Motors	Kraft: Efficient Agitator	employee	Existing	3,224.38	10	\$342.90	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Lumber Wood Products	Process	Mech Pulp: Premium Process	employee	Existing	0.51	5	\$0.07	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Lumber Wood Products	Motors	Mech Pulp: Refiner Plate Improvement	employee	Existing	27.89	1	\$1.31	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Lumber Wood Products	Cooling	Transformer - High Efficiency	employee	Existing	12.74	10	\$27.88	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Lumber Wood Products	Heating	Transformer - High Efficiency	employee	Existing	28.51	10	\$27.88	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Lumber Wood Products	Ventilation	Transformer - High Efficiency	employee	Existing	0.88	10	\$27.88	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Lumber Wood Products	Interior Lighting	Transformer - High Efficiency	employee	Existing	8.71	10	\$27.88	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Lumber Wood Products	Exterior Lighting	Transformer - High Efficiency	employee	Existing	1.78	10	\$27.88	15%	15%	\$0.01	0.00	0.00	7th Power Plan

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Lumber Wood Products	Motors	Transformer - High Efficiency	employee	Existing	130.25	10	\$27.88	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Lumber Wood Products	Process	Transformer - High Efficiency	employee	Existing	22.81	10	\$27.88	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Lumber Wood Products	Miscellaneous	Transformer - High Efficiency	employee	Existing	14.30	10	\$27.88	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Lumber Wood Products	Cooling	Strategic Energy Management	employee	Existing	34.86	3	\$171.20	0%	24%	\$0.07	1.67	1.85	AEG Research
Lumber Wood Products	Heating	Strategic Energy Management	employee	Existing	81.31	3	\$171.20	0%	24%	\$0.07	4.35	4.54	AEG Research
Lumber Wood Products	Ventilation	Strategic Energy Management	employee	Existing	2.51	3	\$171.20	0%	24%	\$0.07	0.67	0.81	AEG Research
Lumber Wood Products	Interior Lighting	Strategic Energy Management	employee	Existing	23.62	3	\$171.20	0%	24%	\$0.07	5.13	7.37	AEG Research
Lumber Wood Products	Exterior Lighting	Strategic Energy Management	employee	Existing	5.10	3	\$171.20	0%	24%	\$0.07	1.14	1.64	AEG Research
Lumber Wood Products	Motors	Strategic Energy Management	employee	Existing	373.66	3	\$171.20	0%	24%	\$0.07	95.09	105.72	AEG Research
Lumber Wood Products	Process	Strategic Energy Management	employee	Existing	65.42	3	\$171.20	0%	24%	\$0.07	17.77	17.91	AEG Research
Lumber Wood Products	Miscellaneous	Strategic Energy Management	employee	Existing	40.98	3	\$171.20	0%	24%	\$0.07	14.11	11.03	AEG Research
Lumber Wood Products	Interior Lighting	Commissioning	employee	Existing	27.12	3	\$295.06	0%	0%	\$0.13	0.00	0.00	AEG Research
Lumber Wood Products	Exterior Lighting	Commissioning	employee	Existing	5.86	3	\$295.06	0%	0%	\$0.13	0.00	0.00	AEG Research
Lumber Wood Products	Motors	Commissioning	employee	Existing	428.65	3	\$295.06	0%	0%	\$0.13	0.00	0.00	AEG Research
Lumber Wood Products	Process	Commissioning	employee	Existing	75.03	3	\$295.06	0%	0%	\$0.13	0.00	0.00	AEG Research
Lumber Wood Products	Miscellaneous	Commissioning	employee	Existing	46.97	3	\$295.06	0%	0%	\$0.13	0.00	0.00	AEG Research
Lumber Wood Products	Interior Lighting	Retrocommissioning	employee	Existing	27.43	3	\$187.31	10%	35%	\$0.08	6.24	8.91	AEG Research
Lumber Wood Products	Exterior Lighting	Retrocommissioning	employee	Existing	5.92	3	\$187.31	10%	35%	\$0.08	1.38	1.98	AEG Research
Lumber Wood Products	Motors	Retrocommissioning	employee	Existing	434.17	3	\$187.31	10%	35%	\$0.08	115.75	127.79	AEG Research

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Lumber Wood Products	Process	Retrocommissioning	employee	Existing	76.04	3	\$187.31	10%	35%	\$0.08	21.63	21.66	AEG Research
Lumber Wood Products	Miscellaneous	Retrocommissioning	employee	Existing	47.67	3	\$187.31	10%	35%	\$0.08	17.18	13.35	AEG Research
Lumber Wood Products	Motors	Municipal Sewage Treatment	employee	Existing	32.21	12	\$20.16	0%	0%	\$0.05	0.00	0.00	7th Power Plan
Lumber Wood Products	Motors	Municipal Water Supply Treatment	employee	Existing	0.00	12	\$0.00	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Lumber Wood Products	Cooling	Insulation - Ceiling	sqft	New	0.17	45	\$1.28	15%	25%	\$0.12	0.56	0.56	Building Energy Simulation Tool
Lumber Wood Products	Heating	Insulation - Ceiling	sqft	New	0.40	45	\$1.28	15%	25%	\$0.12	1.37	1.37	Building Energy Simulation Tool
Lumber Wood Products	Ventilation	Insulation - Ceiling	sqft	New	0.01	45	\$1.28	15%	25%	\$0.12	0.17	0.19	Building Energy Simulation Tool
Lumber Wood Products	Cooling	Insulation - Ducting	sqft	New	0.07	20	\$0.84	15%	25%	\$0.66	0.22	0.22	Building Energy Simulation Tool
Lumber Wood Products	Heating	Insulation - Ducting	sqft	New	0.02	20	\$0.84	15%	25%	\$0.66	0.06	0.06	Building Energy Simulation Tool
Lumber Wood Products	Ventilation	Insulation - Ducting	sqft	New	0.00	20	\$0.84	15%	25%	\$0.66	0.01	0.01	Building Energy Simulation Tool
Lumber Wood Products	Cooling	Insulation - Wall Cavity	sqft	New	0.00	45	\$0.15	45%	50%	\$0.01	0.00	0.00	Building Energy Simulation Tool
Lumber Wood Products	Heating	Insulation - Wall Cavity	sqft	New	0.54	45	\$0.15	45%	50%	\$0.01	0.93	0.93	Building Energy Simulation Tool
Lumber Wood Products	Ventilation	Insulation - Wall Cavity	sqft	New	0.01	45	\$0.15	45%	50%	\$0.01	0.11	0.12	Building Energy Simulation Tool
Lumber Wood Products	Cooling	HVAC - Duct Repair and Sealing	sqft	New	0.02	18	\$0.00	15%	25%	\$0.00	0.07	0.07	Building Energy Simulation Tool
Lumber Wood Products	Heating	HVAC - Duct Repair and Sealing	sqft	New	0.04	18	\$0.00	15%	25%	\$0.00	0.13	0.13	Building Energy Simulation Tool
Lumber Wood Products	Ventilation	HVAC - Duct Repair and Sealing	sqft	New	0.00	18	\$0.00	15%	25%	\$0.00	0.02	0.02	Building Energy Simulation Tool
Lumber Wood Products	Cooling	Chiller - Chilled Water Reset	sqft	New	0.05	10	\$0.01	15%	45%	\$0.02	0.05	0.05	AEG-BEST
Lumber Wood Products	Cooling	Chiller - Chilled Water Variable-Flow System	sqft	New	0.30	15	\$0.50	15%	60%	\$0.13	0.55	0.56	AEG-BEST
Lumber Wood Products	Cooling	Chiller - Variable Speed Fans	sqft	New	0.11	15	\$0.03	15%	75%	\$0.02	0.27	0.28	New Jersey TRM

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Lumber Wood Products	Cooling	HVAC - Economizer	sqft	New	0.06	10	\$0.25	18%	30%	\$0.44	0.24	0.25	AEG-BEST
Lumber Wood Products	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.25	15%	35%	\$8.97	0.03	0.04	7th Power Plan
Lumber Wood Products	Cooling	Destratification Fans (HVLS)	sqft	New	0.22	15	\$0.63	15%	50%	\$0.04	1.20	1.23	AEG Research
Lumber Wood Products	Heating	Destratification Fans (HVLS)	sqft	New	0.99	15	\$0.63	15%	50%	\$0.04	5.73	5.74	AEG Research
Lumber Wood Products	Cooling	RTU - Maintenance	sqft	New	0.12	3	\$0.07	15%	75%	\$0.16	0.08	0.09	AEG Research
Lumber Wood Products	Cooling	Thermostat - WiFi/Interactive	sqft	New	0.34	5	\$0.66	5%	15%	\$0.10	0.15	0.15	7th Power Plan
Lumber Wood Products	Heating	Thermostat - WiFi/Interactive	sqft	New	0.79	5	\$0.66	5%	15%	\$0.10	0.36	0.36	7th Power Plan
Lumber Wood Products	Ventilation	Thermostat - WiFi/Interactive	sqft	New	0.02	5	\$0.66	5%	15%	\$0.10	0.04	0.05	7th Power Plan
Lumber Wood Products	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.06	15	\$0.35	22%	41%	\$0.31	17.63	20.61	7th Power Plan
Lumber Wood Products	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.08	15	\$0.58	22%	41%	\$0.36	23.88	28.06	7th Power Plan
Lumber Wood Products	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	New	0.02	15	\$0.00	1%	2%	\$0.01	0.02	0.03	7th Power Plan
Lumber Wood Products	Interior Lighting	Interior Lighting - Timeclocks and Timers	sqft	New	0.00	8	\$0.00	7%	7%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Lumber Wood Products	Interior Lighting	Interior Lighting - Skylights	sqft	New	0.00	15	\$1.01	18%	24%	\$0.00	0.00	0.00	AEG Research
Lumber Wood Products	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	sqft	New	0.03	16	\$1.81	5%	40%	\$2.85	0.93	1.20	7th Power Plan
Lumber Wood Products	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	New	0.03	11	\$0.00	15%	50%	\$0.01	0.73	0.94	Illinois TRM
Lumber Wood Products	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	sqft	New	0.04	8	\$0.03	15%	25%	\$0.07	0.67	0.93	7th Power Plan
Lumber Wood Products	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	New	0.02	8	\$0.02	44%	60%	\$0.07	0.57	0.79	Pacific Gas and Electric Research
Lumber Wood Products	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	New	0.02	7	\$1.19	15%	30%	\$3.69	0.58	0.81	AEG Research
Lumber Wood Products	Process	Process - Conductivity Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A

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Lumber Wood Products	Process	Process - Timers and Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Motors	Process - Timers and Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Process	Refrigeration - Floating Head Pressure	employee	New	6.54	15	\$4.49	20%	50%	\$0.06	0.47	0.47	RTF Workbook
Lumber Wood Products	Process	Refrigeration - System Optimization	employee	New	10.47	15	\$1.57	20%	50%	\$0.01	0.74	0.74	AEG Research
Lumber Wood Products	Motors	Pumping System - Equipment Upgrade	employee	New	270.00	10	\$40.11	9%	38%	\$0.02	14.43	14.38	7th Power Plan
Lumber Wood Products	Motors	Pumping System - System Optimization	employee	New	201.03	12	\$61.13	9%	38%	\$0.03	17.70	17.42	UNIDO Study on Industrial Energy Efficiency
Lumber Wood Products	Motors	Pumping System - Variable Speed Drive	employee	New	200.59	10	\$63.59	9%	38%	\$0.03	16.31	16.06	UNIDO Study on Industrial Energy Efficiency
Lumber Wood Products	Motors	Fan System - Equipment Upgrade	employee	New	109.72	10	\$11.15	9%	38%	\$0.01	8.89	8.79	UNIDO Study on Industrial Energy Efficiency
Lumber Wood Products	Motors	Fan System - Flow Optimization	employee	New	129.04	10	\$18.44	9%	38%	\$0.02	10.47	10.33	UNIDO Study on Industrial Energy Efficiency
Lumber Wood Products	Motors	Fan System - Variable Speed Drive	employee	New	194.81	10	\$92.80	9%	38%	\$0.05	15.89	15.59	UNIDO Study on Industrial Energy Efficiency
Lumber Wood Products	Motors	Compressed Air - Equipment Upgrade	employee	New	179.94	10	\$13.63	17%	50%	\$0.01	11.20	11.18	7th Power Plan
Lumber Wood Products	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	New	0.00	15	\$0.00	16%	38%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Lumber Wood Products	Motors	Compressed Air - Refrigerated Cycling Dryers	employee	New	0.00	10	\$0.00	16%	30%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Lumber Wood Products	Motors	Compressed Air - System Controls	employee	New	40.71	10	\$9.74	9%	38%	\$0.03	2.18	2.17	UNIDO Study on Industrial Energy Efficiency
Lumber Wood Products	Motors	Compressed Air - Leak Management Program	employee	New	102.55	10	\$9.79	18%	75%	\$0.01	10.96	10.92	7th Power Plan
Lumber Wood Products	Motors	Compressed Air - Variable Speed Drive	employee	New	75.05	15	\$59.74	26%	45%	\$0.06	3.47	3.43	UNIDO Study on Industrial Energy Efficiency
Lumber Wood Products	Motors	Compressed Air - Low Pressure-Drop Filters	employee	New	2.53	10	\$0.92	17%	50%	\$0.04	0.16	0.16	Illinois TRM
Lumber Wood Products	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	New	15.31	10	\$2.99	17%	50%	\$0.02	0.96	0.95	UNIDO Study on Industrial Energy Efficiency
Lumber Wood Products	Motors	Compressed Air - Outside Air Intake	employee	New	0.00	20	\$0.00	17%	50%	\$0.00	0.00	0.00	Michigan Energy Measures Database

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Lumber Wood Products	Motors	Compressed Air - Receiver Capacity Addition	employee	New	15.06	15	\$8.21	17%	50%	\$0.04	1.22	1.20	UNIDO Study on Industrial Energy Efficiency
Lumber Wood Products	Motors	Material Handling - Variable Speed Drive	employee	New	1,275.05	10	\$459.79	25%	45%	\$0.04	72.79	71.63	7th Power Plan
Lumber Wood Products	Motors	Motors - Green Rewind (<100 HP)	employee	New	17.38	10	\$7.58	10%	50%	\$0.05	9.94	9.76	7th Power Plan
Lumber Wood Products	Motors	Motors - Green Rewind (100 HP+)	employee	New	9.76	10	\$2.69	6%	25%	\$0.03	2.64	2.60	7th Power Plan
Lumber Wood Products	Motors	Switch from Belt Drive to Direct Drive	employee	New	147.20	12	\$33.29	16%	25%	\$0.02	21.57	21.26	2015-mdu-irp-report---volume-iii.pdf
Lumber Wood Products	Motors	Motors - Synchronous Belts	employee	New	39.15	10	\$10.01	16%	36%	\$0.03	7.34	7.30	7th Power Plan
Lumber Wood Products	Miscellaneous	Agriculture - Engine Block Timer	employee	New	377.82	3	\$4.66	0%	0%	\$0.00	0.00	0.00	Vermont TRM
Lumber Wood Products	Motors	Agriculture - Live Stock Waterer	employee	New	659.73	10	\$353.23	0%	0%	\$0.06	0.00	0.00	Ontario Power TRM
Lumber Wood Products	Process	Dairy - Milk Precoolers	employee	New	43.60	15	\$20.22	0%	0%	\$0.04	0.00	0.00	Ontario Power TRM
Lumber Wood Products	Process	Clean Room: Change Filter Strategy	employee	New	40.57	15	\$0.30	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Lumber Wood Products	Process	Clean Room: Chiller Optimize	employee	New	12.93	15	\$1.20	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Lumber Wood Products	Process	Clean Room: Clean Room HVAC	employee	New	7.85	15	\$1.45	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Lumber Wood Products	Process	Elec Chip Fab: Solidstate Chiller	employee	New	7.85	15	\$4.54	0%	0%	\$0.05	0.00	0.00	7th Power Plan
Lumber Wood Products	Process	Elec Chip Fab: Eliminate Exhaust	employee	New	5.07	15	\$1.08	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Lumber Wood Products	Process	Elec Chip Fab: Exhaust Injector	employee	New	10.14	15	\$5.19	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Lumber Wood Products	Process	Elec Chip Fab: Reduce Gas Pressure	employee	New	10.14	15	\$0.10	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Lumber Wood Products	Motors	Panel: Hydraulic Press	employee	New	1,916.35	10	\$459.51	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Lumber Wood Products	Motors	Wood: Replace Pneumatic Conveyor	employee	New	2,087.45	10	\$34.41	15%	75%	\$0.00	0.00	351.98	7th Power Plan
Lumber Wood Products	Process	Metal: New Arc Furnace	employee	New	529.29	10	\$55.56	0%	0%	\$0.01	0.00	0.00	7th Power Plan

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Lumber Wood Products	Process	Paper: Premium Control Large Material	employee	New	57.10	10	\$28.58	0%	0%	\$0.06	0.00	0.00	7th Power Plan
Lumber Wood Products	Process	Paper: Efficient Pulp Screen	employee	New	45.73	10	\$9.41	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Lumber Wood Products	Process	Kraft: Effluent Treatment System	employee	New	45.76	10	\$3.86	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Lumber Wood Products	Motors	Kraft: Efficient Agitator	employee	New	3,452.35	10	\$342.90	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Lumber Wood Products	Process	Mech Pulp: Premium Process	employee	New	0.51	5	\$0.07	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Lumber Wood Products	Motors	Mech Pulp: Refiner Plate Improvement	employee	New	30.39	1	\$1.31	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Lumber Wood Products	Cooling	Transformer - High Efficiency	employee	New	11.53	10	\$27.65	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Lumber Wood Products	Heating	Transformer - High Efficiency	employee	New	27.72	10	\$27.65	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Lumber Wood Products	Ventilation	Transformer - High Efficiency	employee	New	0.54	10	\$27.65	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Lumber Wood Products	Interior Lighting	Transformer - High Efficiency	employee	New	6.98	10	\$27.65	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Lumber Wood Products	Exterior Lighting	Transformer - High Efficiency	employee	New	1.42	10	\$27.65	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Lumber Wood Products	Motors	Transformer - High Efficiency	employee	New	144.31	10	\$27.65	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Lumber Wood Products	Process	Transformer - High Efficiency	employee	New	22.86	10	\$27.65	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Lumber Wood Products	Miscellaneous	Transformer - High Efficiency	employee	New	13.55	10	\$27.65	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Lumber Wood Products	Cooling	Strategic Energy Management	employee	New	32.82	3	\$169.80	0%	24%	\$0.07	0.03	0.04	AEG Research
Lumber Wood Products	Heating	Strategic Energy Management	employee	New	79.71	3	\$169.80	0%	24%	\$0.07	0.09	0.09	AEG Research
Lumber Wood Products	Ventilation	Strategic Energy Management	employee	New	1.55	3	\$169.80	0%	24%	\$0.07	0.01	0.01	AEG Research
Lumber Wood Products	Interior Lighting	Strategic Energy Management	employee	New	18.80	3	\$169.80	0%	24%	\$0.07	0.10	0.15	AEG Research
Lumber Wood Products	Exterior Lighting	Strategic Energy Management	employee	New	4.10	3	\$169.80	0%	24%	\$0.07	0.02	0.04	AEG Research

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Lumber Wood Products	Motors	Strategic Energy Management	employee	New	416.89	3	\$169.80	0%	24%	\$0.07	2.33	2.38	AEG Research
Lumber Wood Products	Process	Strategic Energy Management	employee	New	66.03	3	\$169.80	0%	24%	\$0.07	0.36	0.36	AEG Research
Lumber Wood Products	Miscellaneous	Strategic Energy Management	employee	New	39.13	3	\$169.80	0%	24%	\$0.07	0.27	0.18	AEG Research
Lumber Wood Products	Interior Lighting	Commissioning	employee	New	21.68	3	\$296.73	10%	35%	\$0.13	0.12	0.18	AEG Research
Lumber Wood Products	Exterior Lighting	Commissioning	employee	New	4.72	3	\$296.73	10%	35%	\$0.13	0.03	0.04	AEG Research
Lumber Wood Products	Motors	Commissioning	employee	New	480.53	3	\$296.73	10%	35%	\$0.13	2.80	2.85	AEG Research
Lumber Wood Products	Process	Commissioning	employee	New	76.11	3	\$296.73	10%	35%	\$0.13	0.44	0.44	AEG Research
Lumber Wood Products	Miscellaneous	Commissioning	employee	New	45.10	3	\$296.73	10%	35%	\$0.13	0.32	0.22	AEG Research
Lumber Wood Products	Interior Lighting	Retrocommissioning	employee	New	21.70	3	\$188.37	0%	0%	\$0.08	0.00	0.00	AEG Research
Lumber Wood Products	Exterior Lighting	Retrocommissioning	employee	New	4.73	3	\$188.37	0%	0%	\$0.08	0.00	0.00	AEG Research
Lumber Wood Products	Motors	Retrocommissioning	employee	New	481.02	3	\$188.37	0%	0%	\$0.08	0.00	0.00	AEG Research
Lumber Wood Products	Process	Retrocommissioning	employee	New	76.19	3	\$188.37	0%	0%	\$0.08	0.00	0.00	AEG Research
Lumber Wood Products	Miscellaneous	Retrocommissioning	employee	New	45.15	3	\$188.37	0%	0%	\$0.08	0.00	0.00	AEG Research
Lumber Wood Products	Motors	Municipal Sewage Treatment	employee	New	35.65	12	\$20.16	0%	0%	\$0.05	0.00	0.00	7th Power Plan
Lumber Wood Products	Motors	Municipal Water Supply Treatment	employee	New	0.00	12	\$0.00	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Metal Mfg	Cooling	Insulation - Ceiling	sqft	Existing	0.18	45	\$1.28	15%	25%	\$0.11	36.80	40.42	Building Energy Simulation Tool
Metal Mfg	Heating	Insulation - Ceiling	sqft	Existing	0.40	45	\$1.28	15%	25%	\$0.11	91.82	95.38	Building Energy Simulation Tool
Metal Mfg	Ventilation	Insulation - Ceiling	sqft	Existing	0.01	45	\$1.28	15%	25%	\$0.11	14.11	16.99	Building Energy Simulation Tool
Metal Mfg	Cooling	Insulation - Ducting	sqft	Existing	0.07	20	\$0.84	15%	25%	\$0.62	14.21	15.69	Building Energy Simulation Tool

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Metal Mfg	Heating	Insulation - Ducting	sqft	Existing	0.02	20	\$0.84	15%	25%	\$0.62	3.85	4.02	Building Energy Simulation Tool
Metal Mfg	Ventilation	Insulation - Ducting	sqft	Existing	0.00	20	\$0.84	15%	25%	\$0.62	0.59	0.72	Building Energy Simulation Tool
Metal Mfg	Cooling	Insulation - Wall Cavity	sqft	Existing	0.00	45	\$0.15	45%	50%	\$0.01	0.31	0.33	Building Energy Simulation Tool
Metal Mfg	Heating	Insulation - Wall Cavity	sqft	Existing	0.58	45	\$0.15	45%	50%	\$0.01	67.04	67.19	Building Energy Simulation Tool
Metal Mfg	Ventilation	Insulation - Wall Cavity	sqft	Existing	0.02	45	\$0.15	45%	50%	\$0.01	9.60	11.43	Building Energy Simulation Tool
Metal Mfg	Cooling	HVAC - Duct Repair and Sealing	sqft	Existing	0.02	18	\$0.00	15%	25%	\$0.00	5.20	5.46	Building Energy Simulation Tool
Metal Mfg	Heating	HVAC - Duct Repair and Sealing	sqft	Existing	0.04	18	\$0.00	15%	25%	\$0.00	9.45	9.47	Building Energy Simulation Tool
Metal Mfg	Ventilation	HVAC - Duct Repair and Sealing	sqft	Existing	0.00	18	\$0.00	15%	25%	\$0.00	1.35	1.61	Building Energy Simulation Tool
Metal Mfg	Cooling	Chiller - Chilled Water Reset	sqft	Existing	0.07	10	\$0.01	15%	45%	\$0.02	12.00	12.99	AEG-BEST
Metal Mfg	Cooling	Chiller - Chilled Water Variable-Flow System	sqft	Existing	0.36	15	\$0.50	15%	60%	\$0.11	95.21	105.96	AEG-BEST
Metal Mfg	Cooling	Chiller - Variable Speed Fans	sqft	Existing	0.14	15	\$0.03	15%	75%	\$0.02	48.44	52.49	New Jersey TRM
Metal Mfg	Cooling	HVAC - Economizer	sqft	Existing	0.23	10	\$0.25	18%	30%	\$0.11	49.86	55.67	AEG-BEST
Metal Mfg	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.25	15%	35%	\$7.50	5.50	7.10	7th Power Plan
Metal Mfg	Cooling	Destratification Fans (HVLS)	sqft	Existing	0.25	15	\$0.63	15%	50%	\$0.04	193.85	209.57	AEG Research
Metal Mfg	Heating	Destratification Fans (HVLS)	sqft	Existing	1.05	15	\$0.63	15%	50%	\$0.04	919.48	925.95	AEG Research
Metal Mfg	Cooling	RTU - Maintenance	sqft	Existing	0.12	3	\$0.07	15%	75%	\$0.15	108.60	122.64	AEG Research
Metal Mfg	Cooling	Thermostat - WiFi/Interactive	sqft	Existing	0.36	5	\$0.66	5%	15%	\$0.10	74.52	81.14	7th Power Plan
Metal Mfg	Heating	Thermostat - WiFi/Interactive	sqft	Existing	0.81	5	\$0.66	5%	15%	\$0.10	185.82	191.47	7th Power Plan
Metal Mfg	Ventilation	Thermostat - WiFi/Interactive	sqft	Existing	0.03	5	\$0.66	5%	15%	\$0.10	28.56	34.10	7th Power Plan
Metal Mfg	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.27	15	\$0.35	7%	33%	\$0.08	540.51	682.77	7th Power Plan
Metal Mfg	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.36	15	\$0.58	7%	33%	\$0.10	717.06	934.01	7th Power Plan

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Metal Mfg	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	Existing	0.02	15	\$0.00	1%	2%	\$0.01	2.72	3.99	7th Power Plan
Metal Mfg	Interior Lighting	Interior Lighting - Timeclocks and Timers	sqft	Existing	0.00	8	\$0.00	7%	7%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Metal Mfg	Interior Lighting	Interior Lighting - Skylights	sqft	Existing	0.00	15	\$1.01	15%	23%	\$0.00	0.00	0.00	AEG Research
Metal Mfg	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	sqft	Existing	0.04	16	\$1.81	5%	40%	\$2.85	86.54	140.61	7th Power Plan
Metal Mfg	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	Existing	0.04	11	\$0.00	15%	50%	\$0.01	90.27	129.01	Illinois TRM
Metal Mfg	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	sqft	Existing	0.05	8	\$0.03	15%	25%	\$0.07	108.67	167.56	7th Power Plan
Metal Mfg	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	Existing	0.03	8	\$0.02	33%	60%	\$0.07	150.88	239.47	Pacific Gas and Electric Research
Metal Mfg	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	Existing	0.03	7	\$1.19	15%	30%	\$3.70	94.07	158.26	AEG Research
Metal Mfg	Process	Process - Conductivity Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Metal Mfg	Process	Process - Timers and Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Metal Mfg	Motors	Process - Timers and Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Metal Mfg	Process	Refrigeration - Floating Head Pressure	employee	Existing	22.68	15	\$24.57	20%	50%	\$0.08	71.01	82.43	RTF Workbook
Metal Mfg	Process	Refrigeration - System Optimization	employee	Existing	36.36	15	\$17.30	20%	50%	\$0.04	113.86	132.01	AEG Research
Metal Mfg	Motors	Pumping System - Equipment Upgrade	employee	Existing	254.93	10	\$37.29	9%	38%	\$0.02	825.84	843.19	7th Power Plan
Metal Mfg	Motors	Pumping System - System Optimization	employee	Existing	187.16	12	\$56.84	9%	38%	\$0.03	586.76	604.74	UNIDO Study on Industrial Energy Efficiency
Metal Mfg	Motors	Pumping System - Variable Speed Drive	employee	Existing	186.20	10	\$59.13	9%	38%	\$0.03	582.61	602.84	UNIDO Study on Industrial Energy Efficiency
Metal Mfg	Motors	Fan System - Equipment Upgrade	employee	Existing	67.98	10	\$6.72	9%	38%	\$0.01	215.34	217.03	UNIDO Study on Industrial Energy Efficiency
Metal Mfg	Motors	Fan System - Flow Optimization	employee	Existing	78.61	10	\$11.11	9%	38%	\$0.02	247.62	252.71	UNIDO Study on Industrial Energy Efficiency
Metal Mfg	Motors	Fan System - Variable Speed Drive	employee	Existing	115.37	10	\$55.93	9%	38%	\$0.05	357.20	377.49	UNIDO Study on Industrial Energy Efficiency

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Metal Mfg	Motors	Compressed Air - Equipment Upgrade	employee	Existing	463.89	10	\$33.76	17%	50%	\$0.01	1,766.30	1,766.30	7th Power Plan
Metal Mfg	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	Existing	0.00	15	\$0.00	16%	38%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Metal Mfg	Motors	Compressed Air - Refrigerated Cycling Dryers	employee	Existing	0.00	10	\$0.00	16%	30%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Metal Mfg	Motors	Compressed Air - System Controls	employee	Existing	101.46	10	\$24.13	9%	38%	\$0.03	327.11	338.16	UNIDO Study on Industrial Energy Efficiency
Metal Mfg	Motors	Compressed Air - Leak Management Program	employee	Existing	261.03	10	\$24.26	18%	75%	\$0.01	1,696.98	1,716.11	7th Power Plan
Metal Mfg	Motors	Compressed Air - Variable Speed Drive	employee	Existing	182.50	15	\$147.97	26%	45%	\$0.06	386.37	414.73	UNIDO Study on Industrial Energy Efficiency
Metal Mfg	Motors	Compressed Air - Low Pressure-Drop Filters	employee	Existing	6.24	10	\$2.28	17%	50%	\$0.04	23.36	24.47	Illinois TRM
Metal Mfg	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	Existing	38.30	10	\$7.40	17%	50%	\$0.02	144.42	148.40	UNIDO Study on Industrial Energy Efficiency
Metal Mfg	Motors	Compressed Air - Outside Air Intake	employee	Existing	0.00	20	\$0.00	17%	50%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Metal Mfg	Motors	Compressed Air - Receiver Capacity Addition	employee	Existing	36.74	15	\$20.35	17%	50%	\$0.04	136.48	145.60	UNIDO Study on Industrial Energy Efficiency
Metal Mfg	Motors	Material Handling - Variable Speed Drive	employee	Existing	1,129.03	10	\$408.91	25%	45%	\$0.04	2,474.78	2,569.73	7th Power Plan
Metal Mfg	Motors	Motors - Green Rewind (<100 HP)	employee	Existing	16.33	10	\$7.24	10%	50%	\$0.05	355.22	374.59	7th Power Plan
Metal Mfg	Motors	Motors - Green Rewind (100 HP+)	employee	Existing	9.31	10	\$2.57	6%	25%	\$0.03	97.09	100.40	7th Power Plan
Metal Mfg	Motors	Switch from Belt Drive to Direct Drive	employee	Existing	141.85	12	\$31.79	16%	25%	\$0.02	743.93	760.81	2015-mdu-irp-report---volume-iii.pdf
Metal Mfg	Motors	Motors - Synchronous Belts	employee	Existing	37.52	10	\$9.56	16%	36%	\$0.03	423.09	438.22	7th Power Plan
Metal Mfg	Miscellaneous	Agriculture - Engine Block Timer	employee	Existing	474.46	3	\$5.85	0%	0%	\$0.00	0.00	0.00	Vermont TRM
Metal Mfg	Motors	Agriculture - Live Stock Waterer	employee	Existing	602.20	10	\$328.44	0%	0%	\$0.06	0.00	0.00	Ontario Power TRM
Metal Mfg	Process	Dairy - Milk Precoolers	employee	Existing	151.23	15	\$78.18	0%	0%	\$0.04	0.00	0.00	Ontario Power TRM
Metal Mfg	Process	Clean Room: Change Filter Strategy	employee	Existing	256.91	15	\$1.89	0%	0%	\$0.00	0.00	0.00	7th Power Plan

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Metal Mfg	Process	Clean Room: Chiller Optimize	employee	Existing	50.00	15	\$4.63	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Metal Mfg	Process	Clean Room: Clean Room HVAC	employee	Existing	27.27	15	\$5.59	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Metal Mfg	Process	Elec Chip Fab: Solidstate Chiller	employee	Existing	27.22	15	\$17.55	0%	0%	\$0.05	0.00	0.00	7th Power Plan
Metal Mfg	Process	Elec Chip Fab: Eliminate Exhaust	employee	Existing	28.85	15	\$6.82	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Metal Mfg	Process	Elec Chip Fab: Exhaust Injector	employee	Existing	57.59	15	\$32.88	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Metal Mfg	Process	Elec Chip Fab: Reduce Gas Pressure	employee	Existing	64.23	15	\$0.66	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Metal Mfg	Motors	Panel: Hydraulic Press	employee	Existing	1,715.08	10	\$408.67	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Metal Mfg	Motors	Wood: Replace Pneumatic Conveyor	employee	Existing	1,856.46	10	\$30.61	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Metal Mfg	Process	Metal: New Arc Furnace	employee	Existing	1,716.56	10	\$180.19	15%	75%	\$0.01	10,881.53	10,881.53	7th Power Plan
Metal Mfg	Process	Paper: Premium Control Large Material	employee	Existing	199.99	10	\$111.57	0%	0%	\$0.06	0.00	0.00	7th Power Plan
Metal Mfg	Process	Paper: Efficient Pulp Screen	employee	Existing	160.47	10	\$36.75	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Metal Mfg	Process	Kraft: Effluent Treatment System	employee	Existing	178.64	10	\$15.07	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Metal Mfg	Motors	Kraft: Efficient Agitator	employee	Existing	3,156.76	10	\$304.96	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Metal Mfg	Process	Mech Pulp: Premium Process	employee	Existing	1.80	5	\$0.26	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Metal Mfg	Motors	Mech Pulp: Refiner Plate Improvement	employee	Existing	26.91	1	\$1.16	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Metal Mfg	Cooling	Transformer - High Efficiency	employee	Existing	40.38	10	\$47.66	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Metal Mfg	Heating	Transformer - High Efficiency	employee	Existing	90.40	10	\$47.66	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Metal Mfg	Ventilation	Transformer - High Efficiency	employee	Existing	2.79	10	\$47.66	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Metal Mfg	Interior Lighting	Transformer - High Efficiency	employee	Existing	16.20	10	\$47.66	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Metal Mfg	Exterior Lighting	Transformer - High Efficiency	employee	Existing	3.50	10	\$47.66	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Metal Mfg	Motors	Transformer - High Efficiency	employee	Existing	134.89	10	\$47.66	15%	15%	\$0.01	0.00	0.00	7th Power Plan

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Metal Mfg	Process	Transformer - High Efficiency	employee	Existing	80.01	10	\$47.66	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Metal Mfg	Miscellaneous	Transformer - High Efficiency	employee	Existing	17.96	10	\$47.66	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Metal Mfg	Cooling	Strategic Energy Management	employee	Existing	110.51	3	\$292.72	0%	5%	\$0.07	10.26	11.32	AEG Research
Metal Mfg	Heating	Strategic Energy Management	employee	Existing	257.81	3	\$292.72	0%	5%	\$0.07	26.69	27.84	AEG Research
Metal Mfg	Ventilation	Strategic Energy Management	employee	Existing	7.97	3	\$292.72	0%	5%	\$0.07	4.10	4.96	AEG Research
Metal Mfg	Interior Lighting	Strategic Energy Management	employee	Existing	46.40	3	\$292.72	0%	5%	\$0.07	19.44	28.00	AEG Research
Metal Mfg	Exterior Lighting	Strategic Energy Management	employee	Existing	10.02	3	\$292.72	0%	5%	\$0.07	4.30	6.23	AEG Research
Metal Mfg	Motors	Strategic Energy Management	employee	Existing	385.88	3	\$292.72	0%	5%	\$0.07	196.70	207.71	AEG Research
Metal Mfg	Process	Strategic Energy Management	employee	Existing	228.91	3	\$292.72	0%	5%	\$0.07	110.23	123.96	AEG Research
Metal Mfg	Miscellaneous	Strategic Energy Management	employee	Existing	51.31	3	\$292.72	0%	5%	\$0.07	34.10	26.72	AEG Research
Metal Mfg	Interior Lighting	Commissioning	employee	Existing	53.49	3	\$408.06	0%	0%	\$0.13	0.00	0.00	AEG Research
Metal Mfg	Exterior Lighting	Commissioning	employee	Existing	11.55	3	\$408.06	0%	0%	\$0.13	0.00	0.00	AEG Research
Metal Mfg	Motors	Commissioning	employee	Existing	444.69	3	\$408.06	0%	0%	\$0.13	0.00	0.00	AEG Research
Metal Mfg	Process	Commissioning	employee	Existing	263.81	3	\$408.06	0%	0%	\$0.13	0.00	0.00	AEG Research
Metal Mfg	Miscellaneous	Commissioning	employee	Existing	59.12	3	\$408.06	0%	0%	\$0.13	0.00	0.00	AEG Research
Metal Mfg	Interior Lighting	Retrocommissioning	employee	Existing	54.01	3	\$259.05	5%	39%	\$0.08	155.15	221.25	AEG Research
Metal Mfg	Exterior Lighting	Retrocommissioning	employee	Existing	11.66	3	\$259.05	5%	39%	\$0.08	34.36	49.24	AEG Research
Metal Mfg	Motors	Retrocommissioning	employee	Existing	449.63	3	\$259.05	5%	39%	\$0.08	1,570.23	1,642.56	AEG Research
Metal Mfg	Process	Retrocommissioning	employee	Existing	266.69	3	\$259.05	5%	39%	\$0.08	879.93	980.17	AEG Research
Metal Mfg	Miscellaneous	Retrocommissioning	employee	Existing	59.86	3	\$259.05	5%	39%	\$0.08	272.20	211.55	AEG Research
Metal Mfg	Motors	Municipal Sewage Treatment	employee	Existing	32.54	12	\$18.75	0%	0%	\$0.05	0.00	0.00	7th Power Plan
Metal Mfg	Motors	Municipal Water Supply Treatment	employee	Existing	0.00	12	\$0.00	0%	0%	\$0.00	0.00	0.00	7th Power Plan

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Metal Mfg	Cooling	Insulation - Ceiling	sqft	New	0.17	45	\$1.28	15%	25%	\$0.12	16.37	16.49	Building Energy Simulation Tool
Metal Mfg	Heating	Insulation - Ceiling	sqft	New	0.40	45	\$1.28	15%	25%	\$0.12	40.36	40.23	Building Energy Simulation Tool
Metal Mfg	Ventilation	Insulation - Ceiling	sqft	New	0.01	45	\$1.28	15%	25%	\$0.12	4.98	5.46	Building Energy Simulation Tool
Metal Mfg	Cooling	Insulation - Ducting	sqft	New	0.07	20	\$0.84	15%	25%	\$0.66	6.36	6.41	Building Energy Simulation Tool
Metal Mfg	Heating	Insulation - Ducting	sqft	New	0.02	20	\$0.84	15%	25%	\$0.66	1.70	1.70	Building Energy Simulation Tool
Metal Mfg	Ventilation	Insulation - Ducting	sqft	New	0.00	20	\$0.84	15%	25%	\$0.66	0.21	0.23	Building Energy Simulation Tool
Metal Mfg	Cooling	Insulation - Wall Cavity	sqft	New	0.00	45	\$0.15	45%	50%	\$0.01	0.13	0.13	Building Energy Simulation Tool
Metal Mfg	Heating	Insulation - Wall Cavity	sqft	New	0.54	45	\$0.15	45%	50%	\$0.01	27.33	27.35	Building Energy Simulation Tool
Metal Mfg	Ventilation	Insulation - Wall Cavity	sqft	New	0.01	45	\$0.15	45%	50%	\$0.01	3.33	3.65	Building Energy Simulation Tool
Metal Mfg	Cooling	HVAC - Duct Repair and Sealing	sqft	New	0.02	18	\$0.00	15%	25%	\$0.00	2.05	2.08	Building Energy Simulation Tool
Metal Mfg	Heating	HVAC - Duct Repair and Sealing	sqft	New	0.04	18	\$0.00	15%	25%	\$0.00	3.79	3.79	Building Energy Simulation Tool
Metal Mfg	Ventilation	HVAC - Duct Repair and Sealing	sqft	New	0.00	18	\$0.00	15%	25%	\$0.00	0.46	0.51	Building Energy Simulation Tool
Metal Mfg	Cooling	Chiller - Chilled Water Reset	sqft	New	0.05	10	\$0.01	15%	45%	\$0.02	1.51	1.56	AEG-BEST
Metal Mfg	Cooling	Chiller - Chilled Water Variable-Flow System	sqft	New	0.30	15	\$0.50	15%	60%	\$0.13	16.04	16.41	AEG-BEST
Metal Mfg	Cooling	Chiller - Variable Speed Fans	sqft	New	0.11	15	\$0.03	15%	75%	\$0.02	7.86	8.08	New Jersey TRM
Metal Mfg	Cooling	HVAC - Economizer	sqft	New	0.21	10	\$0.25	18%	30%	\$0.12	7.12	7.33	AEG-BEST
Metal Mfg	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.25	15%	35%	\$8.97	0.87	1.03	7th Power Plan
Metal Mfg	Cooling	Destratification Fans (HVLS)	sqft	New	0.22	15	\$0.63	15%	50%	\$0.04	35.15	36.11	AEG Research
Metal Mfg	Heating	Destratification Fans (HVLS)	sqft	New	0.99	15	\$0.63	15%	50%	\$0.04	168.01	168.37	AEG Research
Metal Mfg	Cooling	RTU - Maintenance	sqft	New	0.12	3	\$0.07	15%	75%	\$0.16	2.36	2.52	AEG Research
Metal Mfg	Cooling	Thermostat - WiFi/Interactive	sqft	New	0.34	5	\$0.66	5%	15%	\$0.10	4.28	4.40	7th Power Plan

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Metal Mfg	Heating	Thermostat - WiFi/Interactive	sqft	New	0.79	5	\$0.66	5%	15%	\$0.10	10.54	10.53	7th Power Plan
Metal Mfg	Ventilation	Thermostat - WiFi/Interactive	sqft	New	0.02	5	\$0.66	5%	15%	\$0.10	1.30	1.58	7th Power Plan
Metal Mfg	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.21	15	\$0.35	22%	41%	\$0.08	321.61	375.84	7th Power Plan
Metal Mfg	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.29	15	\$0.58	22%	41%	\$0.10	435.68	511.86	7th Power Plan
Metal Mfg	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	New	0.02	15	\$0.00	1%	2%	\$0.01	0.38	0.49	7th Power Plan
Metal Mfg	Interior Lighting	Interior Lighting - Timeclocks and Timers	sqft	New	0.00	8	\$0.00	7%	7%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Metal Mfg	Interior Lighting	Interior Lighting - Skylights	sqft	New	0.00	15	\$1.01	18%	24%	\$0.00	0.00	0.00	AEG Research
Metal Mfg	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	sqft	New	0.03	16	\$1.81	5%	40%	\$2.85	17.01	21.84	7th Power Plan
Metal Mfg	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	New	0.03	11	\$0.00	15%	50%	\$0.01	13.24	17.16	Illinois TRM
Metal Mfg	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	sqft	New	0.04	8	\$0.03	15%	25%	\$0.07	12.19	16.98	7th Power Plan
Metal Mfg	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	New	0.02	8	\$0.02	44%	60%	\$0.07	10.42	14.44	Pacific Gas and Electric Research
Metal Mfg	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	New	0.02	7	\$1.19	15%	30%	\$3.69	10.58	14.79	AEG Research
Metal Mfg	Process	Process - Conductivity Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Metal Mfg	Process	Process - Timers and Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Metal Mfg	Motors	Process - Timers and Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Metal Mfg	Process	Refrigeration - Floating Head Pressure	employee	New	24.22	15	\$17.36	20%	50%	\$0.06	16.01	16.14	RTF Workbook
Metal Mfg	Process	Refrigeration - System Optimization	employee	New	38.78	15	\$6.07	20%	50%	\$0.01	25.63	25.84	AEG Research
Metal Mfg	Motors	Pumping System - Equipment Upgrade	employee	New	259.99	10	\$37.29	9%	38%	\$0.02	127.60	127.13	7th Power Plan
Metal Mfg	Motors	Pumping System - System Optimization	employee	New	193.53	12	\$56.84	9%	38%	\$0.03	156.44	155.31	UNIDO Study on Industrial Energy Efficiency

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Metal Mfg	Motors	Pumping System - Variable Speed Drive	employee	New	193.11	10	\$59.13	9%	38%	\$0.03	144.22	143.11	UNIDO Study on Industrial Energy Efficiency
Metal Mfg	Motors	Fan System - Equipment Upgrade	employee	New	68.63	10	\$6.72	9%	38%	\$0.01	50.99	50.88	UNIDO Study on Industrial Energy Efficiency
Metal Mfg	Motors	Fan System - Flow Optimization	employee	New	80.54	10	\$11.11	9%	38%	\$0.02	60.02	59.69	UNIDO Study on Industrial Energy Efficiency
Metal Mfg	Motors	Fan System - Variable Speed Drive	employee	New	121.59	10	\$55.93	9%	38%	\$0.05	91.08	90.10	UNIDO Study on Industrial Energy Efficiency
Metal Mfg	Motors	Compressed Air - Equipment Upgrade	employee	New	463.89	10	\$33.76	17%	50%	\$0.01	264.58	264.58	7th Power Plan
Metal Mfg	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	New	0.00	15	\$0.00	16%	38%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Metal Mfg	Motors	Compressed Air - Refrigerated Cycling Dryers	employee	New	0.00	10	\$0.00	16%	30%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Metal Mfg	Motors	Compressed Air - System Controls	employee	New	104.47	10	\$24.13	9%	38%	\$0.03	51.36	51.12	UNIDO Study on Industrial Energy Efficiency
Metal Mfg	Motors	Compressed Air - Leak Management Program	employee	New	263.76	10	\$24.26	18%	75%	\$0.01	258.42	257.94	7th Power Plan
Metal Mfg	Motors	Compressed Air - Variable Speed Drive	employee	New	192.66	15	\$147.97	26%	45%	\$0.06	81.81	81.17	UNIDO Study on Industrial Energy Efficiency
Metal Mfg	Motors	Compressed Air - Low Pressure-Drop Filters	employee	New	6.44	10	\$2.28	17%	50%	\$0.04	3.71	3.69	Illinois TRM
Metal Mfg	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	New	39.28	10	\$7.40	17%	50%	\$0.02	22.52	22.41	UNIDO Study on Industrial Energy Efficiency
Metal Mfg	Motors	Compressed Air - Outside Air Intake	employee	New	0.00	20	\$0.00	17%	50%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Metal Mfg	Motors	Compressed Air - Receiver Capacity Addition	employee	New	38.64	15	\$20.35	17%	50%	\$0.04	28.69	28.48	UNIDO Study on Industrial Energy Efficiency
Metal Mfg	Motors	Material Handling - Variable Speed Drive	employee	New	1,174.14	10	\$408.91	25%	45%	\$0.04	615.66	610.61	7th Power Plan
Metal Mfg	Motors	Motors - Green Rewind (<100 HP)	employee	New	17.18	10	\$7.24	10%	50%	\$0.05	90.30	89.36	7th Power Plan
Metal Mfg	Motors	Motors - Green Rewind (100 HP+)	employee	New	9.65	10	\$2.57	6%	25%	\$0.03	24.01	23.83	7th Power Plan
Metal Mfg	Motors	Switch from Belt Drive to Direct Drive	employee	New	145.60	12	\$31.79	16%	25%	\$0.02	195.90	194.77	2015-mdu-irp-report---volume-iii.pdf
Metal Mfg	Motors	Motors - Synchronous Belts	employee	New	38.70	10	\$9.56	16%	36%	\$0.03	66.63	66.29	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Metal Mfg	Miscellaneous	Agriculture - Engine Block Timer	employee	New	474.46	3	\$5.85	0%	0%	\$0.00	0.00	0.00	Vermont TRM
Metal Mfg	Motors	Agriculture - Live Stock Waterer	employee	New	635.72	10	\$328.44	0%	0%	\$0.06	0.00	0.00	Ontario Power TRM
Metal Mfg	Process	Dairy - Milk Precoolers	employee	New	161.48	15	\$78.18	0%	0%	\$0.04	0.00	0.00	Ontario Power TRM
Metal Mfg	Process	Clean Room: Change Filter Strategy	employee	New	256.91	15	\$1.89	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Metal Mfg	Process	Clean Room: Chiller Optimize	employee	New	50.00	15	\$4.63	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Metal Mfg	Process	Clean Room: Clean Room HVAC	employee	New	29.07	15	\$5.59	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Metal Mfg	Process	Elec Chip Fab: Solidstate Chiller	employee	New	29.07	15	\$17.55	0%	0%	\$0.05	0.00	0.00	7th Power Plan
Metal Mfg	Process	Elec Chip Fab: Eliminate Exhaust	employee	New	30.75	15	\$6.82	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Metal Mfg	Process	Elec Chip Fab: Exhaust Injector	employee	New	61.49	15	\$32.88	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Metal Mfg	Process	Elec Chip Fab: Reduce Gas Pressure	employee	New	64.23	15	\$0.66	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Metal Mfg	Motors	Panel: Hydraulic Press	employee	New	1,764.52	10	\$408.67	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Metal Mfg	Motors	Wood: Replace Pneumatic Conveyor	employee	New	1,856.46	10	\$30.61	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Metal Mfg	Process	Metal: New Arc Furnace	employee	New	1,716.56	10	\$180.19	15%	75%	\$0.01	2,470.62	2,470.62	7th Power Plan
Metal Mfg	Process	Paper: Premium Control Large Material	employee	New	213.54	10	\$111.57	0%	0%	\$0.06	0.00	0.00	7th Power Plan
Metal Mfg	Process	Paper: Efficient Pulp Screen	employee	New	171.04	10	\$36.75	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Metal Mfg	Process	Kraft: Effluent Treatment System	employee	New	178.64	10	\$15.07	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Metal Mfg	Motors	Kraft: Efficient Agitator	employee	New	3,171.28	10	\$304.96	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Metal Mfg	Process	Mech Pulp: Premium Process	employee	New	1.91	5	\$0.26	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Metal Mfg	Motors	Mech Pulp: Refiner Plate Improvement	employee	New	27.98	1	\$1.16	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Metal Mfg	Cooling	Transformer - High Efficiency	employee	New	36.54	10	\$46.71	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Metal Mfg	Heating	Transformer - High Efficiency	employee	New	87.88	10	\$46.71	15%	15%	\$0.01	0.00	0.00	7th Power Plan

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Metal Mfg	Ventilation	Transformer - High Efficiency	employee	New	1.71	10	\$46.71	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Metal Mfg	Interior Lighting	Transformer - High Efficiency	employee	New	12.79	10	\$46.71	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Metal Mfg	Exterior Lighting	Transformer - High Efficiency	employee	New	2.78	10	\$46.71	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Metal Mfg	Motors	Transformer - High Efficiency	employee	New	142.71	10	\$46.71	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Metal Mfg	Process	Transformer - High Efficiency	employee	New	85.49	10	\$46.71	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Metal Mfg	Miscellaneous	Transformer - High Efficiency	employee	New	17.01	10	\$46.71	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Metal Mfg	Cooling	Strategic Energy Management	employee	New	104.03	3	\$286.91	0%	5%	\$0.07	0.21	0.22	AEG Research
Metal Mfg	Heating	Strategic Energy Management	employee	New	252.73	3	\$286.91	0%	5%	\$0.07	0.54	0.55	AEG Research
Metal Mfg	Ventilation	Strategic Energy Management	employee	New	4.91	3	\$286.91	0%	5%	\$0.07	0.07	0.08	AEG Research
Metal Mfg	Interior Lighting	Strategic Energy Management	employee	New	36.96	3	\$286.91	0%	5%	\$0.07	0.39	0.58	AEG Research
Metal Mfg	Exterior Lighting	Strategic Energy Management	employee	New	8.04	3	\$286.91	0%	5%	\$0.07	0.09	0.13	AEG Research
Metal Mfg	Motors	Strategic Energy Management	employee	New	412.27	3	\$286.91	0%	5%	\$0.07	4.42	4.43	AEG Research
Metal Mfg	Process	Strategic Energy Management	employee	New	246.96	3	\$286.91	0%	5%	\$0.07	2.63	2.69	AEG Research
Metal Mfg	Miscellaneous	Strategic Energy Management	employee	New	49.14	3	\$286.91	0%	5%	\$0.07	0.64	0.43	AEG Research
Metal Mfg	Interior Lighting	Commissioning	employee	New	42.63	3	\$411.35	5%	39%	\$0.13	3.02	4.57	AEG Research
Metal Mfg	Exterior Lighting	Commissioning	employee	New	9.28	3	\$411.35	5%	39%	\$0.13	0.69	1.06	AEG Research
Metal Mfg	Motors	Commissioning	employee	New	475.59	3	\$411.35	5%	39%	\$0.13	34.65	34.78	AEG Research
Metal Mfg	Process	Commissioning	employee	New	284.89	3	\$411.35	5%	39%	\$0.13	20.63	21.09	AEG Research
Metal Mfg	Miscellaneous	Commissioning	employee	New	56.69	3	\$411.35	5%	39%	\$0.13	5.06	3.41	AEG Research
Metal Mfg	Interior Lighting	Retrocommissioning	employee	New	42.64	3	\$261.13	0%	0%	\$0.08	0.00	0.00	AEG Research

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Metal Mfg	Exterior Lighting	Retrocommissioning	employee	New	9.28	3	\$261.13	0%	0%	\$0.08	0.00	0.00	AEG Research
Metal Mfg	Motors	Retrocommissioning	employee	New	475.69	3	\$261.13	0%	0%	\$0.08	0.00	0.00	AEG Research
Metal Mfg	Process	Retrocommissioning	employee	New	284.95	3	\$261.13	0%	0%	\$0.08	0.00	0.00	AEG Research
Metal Mfg	Miscellaneous	Retrocommissioning	employee	New	56.70	3	\$261.13	0%	0%	\$0.08	0.00	0.00	AEG Research
Metal Mfg	Motors	Municipal Sewage Treatment	employee	New	34.35	12	\$18.75	0%	0%	\$0.05	0.00	0.00	7th Power Plan
Metal Mfg	Motors	Municipal Water Supply Treatment	employee	New	0.00	12	\$0.00	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Misc. Mfg	Cooling	Insulation - Ceiling	sqft	Existing	0.18	45	\$1.28	15%	25%	\$0.11	181.07	198.13	Building Energy Simulation Tool
Misc. Mfg	Heating	Insulation - Ceiling	sqft	Existing	0.40	45	\$1.28	15%	25%	\$0.11	447.25	464.60	Building Energy Simulation Tool
Misc. Mfg	Ventilation	Insulation - Ceiling	sqft	Existing	0.01	45	\$1.28	15%	25%	\$0.11	68.73	82.76	Building Energy Simulation Tool
Misc. Mfg	Cooling	Insulation - Ducting	sqft	Existing	0.07	20	\$0.84	15%	25%	\$0.62	69.20	76.41	Building Energy Simulation Tool
Misc. Mfg	Heating	Insulation - Ducting	sqft	Existing	0.02	20	\$0.84	15%	25%	\$0.62	18.73	19.56	Building Energy Simulation Tool
Misc. Mfg	Ventilation	Insulation - Ducting	sqft	Existing	0.00	20	\$0.84	15%	25%	\$0.62	2.88	3.49	Building Energy Simulation Tool
Misc. Mfg	Cooling	Insulation - Wall Cavity	sqft	Existing	0.00	45	\$0.15	45%	50%	\$0.01	1.53	1.61	Building Energy Simulation Tool
Misc. Mfg	Heating	Insulation - Wall Cavity	sqft	Existing	0.58	45	\$0.15	45%	50%	\$0.01	326.55	327.26	Building Energy Simulation Tool
Misc. Mfg	Ventilation	Insulation - Wall Cavity	sqft	Existing	0.02	45	\$0.15	45%	50%	\$0.01	46.75	55.66	Building Energy Simulation Tool
Misc. Mfg	Cooling	HVAC - Duct Repair and Sealing	sqft	Existing	0.02	18	\$0.00	15%	25%	\$0.00	25.34	26.62	Building Energy Simulation Tool
Misc. Mfg	Heating	HVAC - Duct Repair and Sealing	sqft	Existing	0.04	18	\$0.00	15%	25%	\$0.00	46.04	46.12	Building Energy Simulation Tool
Misc. Mfg	Ventilation	HVAC - Duct Repair and Sealing	sqft	Existing	0.00	18	\$0.00	15%	25%	\$0.00	6.59	7.84	Building Energy Simulation Tool
Misc. Mfg	Cooling	Chiller - Chilled Water Reset	sqft	Existing	0.07	10	\$0.01	15%	45%	\$0.02	58.45	63.25	AEG-BEST
Misc. Mfg	Cooling	Chiller - Chilled Water Variable-Flow System	sqft	Existing	0.36	15	\$0.50	15%	60%	\$0.11	463.73	516.09	AEG-BEST

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Misc. Mfg	Cooling	Chiller - Variable Speed Fans	sqft	Existing	0.14	15	\$0.03	15%	75%	\$0.02	235.94	255.66	New Jersey TRM
Misc. Mfg	Cooling	HVAC - Economizer	sqft	Existing	0.03	10	\$0.25	18%	30%	\$0.97	231.51	266.58	AEG-BEST
Misc. Mfg	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.25	15%	35%	\$7.50	26.80	34.60	7th Power Plan
Misc. Mfg	Cooling	Destratification Fans (HVLS)	sqft	Existing	0.25	15	\$0.63	15%	50%	\$0.04	944.19	1,020.76	AEG Research
Misc. Mfg	Heating	Destratification Fans (HVLS)	sqft	Existing	1.05	15	\$0.63	15%	50%	\$0.04	4,478.61	4,510.15	AEG Research
Misc. Mfg	Cooling	RTU - Maintenance	sqft	Existing	0.12	3	\$0.07	15%	75%	\$0.15	534.32	599.54	AEG Research
Misc. Mfg	Cooling	Thermostat - WiFi/Interactive	sqft	Existing	0.37	5	\$0.66	5%	15%	\$0.10	366.67	397.78	7th Power Plan
Misc. Mfg	Heating	Thermostat - WiFi/Interactive	sqft	Existing	0.81	5	\$0.66	5%	15%	\$0.10	905.09	932.61	7th Power Plan
Misc. Mfg	Ventilation	Thermostat - WiFi/Interactive	sqft	Existing	0.03	5	\$0.66	5%	15%	\$0.10	139.09	166.08	7th Power Plan
Misc. Mfg	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.03	15	\$0.35	7%	33%	\$0.73	1,879.33	2,397.67	7th Power Plan
Misc. Mfg	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.04	15	\$0.58	7%	33%	\$0.86	2,493.18	3,280.20	7th Power Plan
Misc. Mfg	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	Existing	0.02	15	\$0.00	1%	2%	\$0.01	9.63	14.16	7th Power Plan
Misc. Mfg	Interior Lighting	Interior Lighting - Timeclocks and Timers	sqft	Existing	0.00	8	\$0.00	7%	7%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Misc. Mfg	Interior Lighting	Interior Lighting - Skylights	sqft	Existing	0.00	15	\$1.01	15%	23%	\$0.00	0.00	0.00	AEG Research
Misc. Mfg	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	sqft	Existing	0.04	16	\$1.81	5%	40%	\$2.85	306.82	498.49	7th Power Plan
Misc. Mfg	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	Existing	0.04	11	\$0.00	15%	50%	\$0.01	320.04	457.36	Illinois TRM
Misc. Mfg	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	sqft	Existing	0.05	8	\$0.03	15%	25%	\$0.07	385.28	594.06	7th Power Plan
Misc. Mfg	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	Existing	0.03	8	\$0.02	33%	60%	\$0.07	534.90	849.00	Pacific Gas and Electric Research
Misc. Mfg	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	Existing	0.03	7	\$1.19	15%	30%	\$3.70	333.51	561.10	AEG Research
Misc. Mfg	Process	Process - Conductivity Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A

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Misc. Mfg	Process	Process - Timers and Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Misc. Mfg	Motors	Process - Timers and Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Misc. Mfg	Process	Refrigeration - Floating Head Pressure	employee	Existing	41.80	15	\$40.79	20%	50%	\$0.08	293.27	294.25	RTF Workbook
Misc. Mfg	Process	Refrigeration - System Optimization	employee	Existing	67.21	15	\$28.72	20%	50%	\$0.04	472.02	472.02	AEG Research
Misc. Mfg	Motors	Pumping System - Equipment Upgrade	employee	Existing	283.25	10	\$41.87	9%	38%	\$0.02	1,885.27	1,942.03	7th Power Plan
Misc. Mfg	Motors	Pumping System - System Optimization	employee	Existing	207.30	12	\$63.82	9%	38%	\$0.03	1,334.42	1,387.29	UNIDO Study on Industrial Energy Efficiency
Misc. Mfg	Motors	Pumping System - Variable Speed Drive	employee	Existing	205.64	10	\$66.39	9%	38%	\$0.03	1,319.61	1,380.50	UNIDO Study on Industrial Energy Efficiency
Misc. Mfg	Motors	Fan System - Equipment Upgrade	employee	Existing	105.73	10	\$10.47	9%	38%	\$0.01	690.09	696.32	UNIDO Study on Industrial Energy Efficiency
Misc. Mfg	Motors	Fan System - Flow Optimization	employee	Existing	122.58	10	\$17.32	9%	38%	\$0.02	795.84	812.37	UNIDO Study on Industrial Energy Efficiency
Misc. Mfg	Motors	Fan System - Variable Speed Drive	employee	Existing	177.54	10	\$87.17	9%	38%	\$0.05	1,129.00	1,202.70	UNIDO Study on Industrial Energy Efficiency
Misc. Mfg	Motors	Compressed Air - Equipment Upgrade	employee	Existing	361.27	10	\$26.29	17%	50%	\$0.01	2,835.91	2,835.91	7th Power Plan
Misc. Mfg	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	Existing	0.00	15	\$0.00	16%	38%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Misc. Mfg	Motors	Compressed Air - Refrigerated Cycling Dryers	employee	Existing	0.00	10	\$0.00	16%	30%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Misc. Mfg	Motors	Compressed Air - System Controls	employee	Existing	77.97	10	\$18.80	9%	38%	\$0.03	516.24	539.30	UNIDO Study on Industrial Energy Efficiency
Misc. Mfg	Motors	Compressed Air - Leak Management Program	employee	Existing	202.44	10	\$18.89	18%	75%	\$0.01	2,709.74	2,749.66	7th Power Plan
Misc. Mfg	Motors	Compressed Air - Variable Speed Drive	employee	Existing	139.83	15	\$115.24	26%	45%	\$0.06	607.11	660.47	UNIDO Study on Industrial Energy Efficiency
Misc. Mfg	Motors	Compressed Air - Low Pressure-Drop Filters	employee	Existing	4.77	10	\$1.78	17%	50%	\$0.04	36.55	38.92	Illinois TRM
Misc. Mfg	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	Existing	29.44	10	\$5.76	17%	50%	\$0.02	227.97	236.69	UNIDO Study on Industrial Energy Efficiency
Misc. Mfg	Motors	Compressed Air - Outside Air Intake	employee	Existing	0.00	20	\$0.00	17%	50%	\$0.00	0.00	0.00	Michigan Energy Measures Database

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Misc. Mfg	Motors	Compressed Air - Receiver Capacity Addition	employee	Existing	28.26	15	\$15.85	17%	50%	\$0.04	215.59	232.27	UNIDO Study on Industrial Energy Efficiency
Misc. Mfg	Motors	Material Handling - Variable Speed Drive	employee	Existing	476.32	10	\$175.90	25%	45%	\$0.04	2,138.72	2,250.47	7th Power Plan
Misc. Mfg	Motors	Motors - Green Rewind (<100 HP)	employee	Existing	10.89	10	\$4.89	10%	50%	\$0.05	486.34	516.97	7th Power Plan
Misc. Mfg	Motors	Motors - Green Rewind (100 HP+)	employee	Existing	6.18	10	\$1.74	6%	25%	\$0.03	132.22	138.25	7th Power Plan
Misc. Mfg	Motors	Switch from Belt Drive to Direct Drive	employee	Existing	94.51	12	\$21.46	16%	25%	\$0.02	1,017.80	1,049.72	2015-mdu-irp-report---volume-iii.pdf
Misc. Mfg	Motors	Motors - Synchronous Belts	employee	Existing	24.99	10	\$6.46	16%	36%	\$0.03	578.54	605.72	7th Power Plan
Misc. Mfg	Miscellaneous	Agriculture - Engine Block Timer	employee	Existing	784.61	3	\$9.68	0%	0%	\$0.00	0.00	0.00	Vermont TRM
Misc. Mfg	Motors	Agriculture - Live Stock Waterer	employee	Existing	665.25	10	\$368.78	0%	0%	\$0.06	0.00	0.00	Ontario Power TRM
Misc. Mfg	Process	Dairy - Milk Precoolers	employee	Existing	278.70	15	\$129.80	0%	0%	\$0.04	0.00	0.00	Ontario Power TRM
Misc. Mfg	Process	Clean Room: Change Filter Strategy	employee	Existing	86.23	15	\$0.64	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Misc. Mfg	Process	Clean Room: Chiller Optimize	employee	Existing	83.01	15	\$7.69	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Misc. Mfg	Process	Clean Room: Clean Room HVAC	employee	Existing	50.40	15	\$9.28	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Misc. Mfg	Process	Elec Chip Fab: Solidstate Chiller	employee	Existing	50.17	15	\$29.14	0%	0%	\$0.05	0.00	0.00	7th Power Plan
Misc. Mfg	Process	Elec Chip Fab: Eliminate Exhaust	employee	Existing	10.78	15	\$2.29	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Misc. Mfg	Process	Elec Chip Fab: Exhaust Injector	employee	Existing	21.46	15	\$11.04	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Misc. Mfg	Process	Elec Chip Fab: Reduce Gas Pressure	employee	Existing	21.56	15	\$0.22	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Misc. Mfg	Motors	Panel: Hydraulic Press	employee	Existing	728.08	10	\$175.80	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Misc. Mfg	Motors	Wood: Replace Pneumatic Conveyor	employee	Existing	798.60	10	\$13.17	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Misc. Mfg	Process	Metal: New Arc Furnace	employee	Existing	959.88	10	\$100.76	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Misc. Mfg	Process	Paper: Premium Control Large Material	employee	Existing	138.03	10	\$69.38	0%	0%	\$0.06	0.00	0.00	7th Power Plan
Misc. Mfg	Process	Paper: Efficient Pulp Screen	employee	Existing	111.08	10	\$22.85	0%	0%	\$0.02	0.00	0.00	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Misc. Mfg	Process	Kraft: Effluent Treatment System	employee	Existing	111.08	10	\$9.37	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Misc. Mfg	Motors	Kraft: Efficient Agitator	employee	Existing	1,329.27	10	\$131.18	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Misc. Mfg	Process	Mech Pulp: Premium Process	employee	Existing	1.24	5	\$0.16	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Misc. Mfg	Motors	Mech Pulp: Refiner Plate Improvement	employee	Existing	11.35	1	\$0.50	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Misc. Mfg	Cooling	Transformer - High Efficiency	employee	Existing	95.41	10	\$63.94	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Misc. Mfg	Heating	Transformer - High Efficiency	employee	Existing	213.58	10	\$63.94	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Misc. Mfg	Ventilation	Transformer - High Efficiency	employee	Existing	6.59	10	\$63.94	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Misc. Mfg	Interior Lighting	Transformer - High Efficiency	employee	Existing	29.49	10	\$63.94	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Misc. Mfg	Exterior Lighting	Transformer - High Efficiency	employee	Existing	6.02	10	\$63.94	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Misc. Mfg	Motors	Transformer - High Efficiency	employee	Existing	89.55	10	\$63.94	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Misc. Mfg	Process	Transformer - High Efficiency	employee	Existing	55.11	10	\$63.94	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Misc. Mfg	Miscellaneous	Transformer - High Efficiency	employee	Existing	29.70	10	\$63.94	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Misc. Mfg	Cooling	Strategic Energy Management	employee	Existing	263.16	3	\$392.67	0%	5%	\$0.07	50.48	55.47	AEG Research
Misc. Mfg	Heating	Strategic Energy Management	employee	Existing	609.11	3	\$392.67	0%	5%	\$0.07	130.00	135.59	AEG Research
Misc. Mfg	Ventilation	Strategic Energy Management	employee	Existing	18.83	3	\$392.67	0%	5%	\$0.07	19.98	24.16	AEG Research
Misc. Mfg	Interior Lighting	Strategic Energy Management	employee	Existing	84.45	3	\$392.67	0%	5%	\$0.07	78.47	104.00	AEG Research
Misc. Mfg	Exterior Lighting	Strategic Energy Management	employee	Existing	17.24	3	\$392.67	0%	5%	\$0.07	15.26	22.09	AEG Research
Misc. Mfg	Motors	Strategic Energy Management	employee	Existing	256.20	3	\$392.67	0%	5%	\$0.07	267.76	285.20	AEG Research
Misc. Mfg	Process	Strategic Energy Management	employee	Existing	157.63	3	\$392.67	0%	5%	\$0.07	170.11	172.26	AEG Research

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Misc. Mfg	Miscellaneous	Strategic Energy Management	employee	Existing	84.85	3	\$392.67	0%	5%	\$0.07	116.25	91.11	AEG Research
Misc. Mfg	Interior Lighting	Commissioning	employee	Existing	97.33	3	\$313.67	0%	0%	\$0.12	0.00	0.00	AEG Research
Misc. Mfg	Exterior Lighting	Commissioning	employee	Existing	19.87	3	\$313.67	0%	0%	\$0.12	0.00	0.00	AEG Research
Misc. Mfg	Motors	Commissioning	employee	Existing	295.25	3	\$313.67	0%	0%	\$0.12	0.00	0.00	AEG Research
Misc. Mfg	Process	Commissioning	employee	Existing	181.65	3	\$313.67	0%	0%	\$0.12	0.00	0.00	AEG Research
Misc. Mfg	Miscellaneous	Commissioning	employee	Existing	97.77	3	\$313.67	0%	0%	\$0.12	0.00	0.00	AEG Research
Misc. Mfg	Interior Lighting	Retrocommissioning	employee	Existing	98.31	3	\$199.12	5%	39%	\$0.08	626.44	822.01	AEG Research
Misc. Mfg	Exterior Lighting	Retrocommissioning	employee	Existing	20.06	3	\$199.12	5%	39%	\$0.08	121.80	174.55	AEG Research
Misc. Mfg	Motors	Retrocommissioning	employee	Existing	298.51	3	\$199.12	5%	39%	\$0.08	2,137.55	2,255.27	AEG Research
Misc. Mfg	Process	Retrocommissioning	employee	Existing	183.71	3	\$199.12	5%	39%	\$0.08	1,357.95	1,362.47	AEG Research
Misc. Mfg	Miscellaneous	Retrocommissioning	employee	Existing	98.99	3	\$199.12	5%	39%	\$0.08	928.02	721.24	AEG Research
Misc. Mfg	Motors	Municipal Sewage Treatment	employee	Existing	35.95	12	\$21.05	0%	0%	\$0.05	0.00	0.00	7th Power Plan
Misc. Mfg	Motors	Municipal Water Supply Treatment	employee	Existing	0.00	12	\$0.00	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Misc. Mfg	Cooling	Insulation - Ceiling	sqft	New	0.17	45	\$1.28	15%	25%	\$0.12	79.84	80.45	Building Energy Simulation Tool
Misc. Mfg	Heating	Insulation - Ceiling	sqft	New	0.40	45	\$1.28	15%	25%	\$0.12	196.57	195.93	Building Energy Simulation Tool
Misc. Mfg	Ventilation	Insulation - Ceiling	sqft	New	0.01	45	\$1.28	15%	25%	\$0.12	24.26	26.59	Building Energy Simulation Tool
Misc. Mfg	Cooling	Insulation - Ducting	sqft	New	0.07	20	\$0.84	15%	25%	\$0.66	30.99	31.23	Building Energy Simulation Tool
Misc. Mfg	Heating	Insulation - Ducting	sqft	New	0.02	20	\$0.84	15%	25%	\$0.66	8.29	8.27	Building Energy Simulation Tool
Misc. Mfg	Ventilation	Insulation - Ducting	sqft	New	0.00	20	\$0.84	15%	25%	\$0.66	1.02	1.12	Building Energy Simulation Tool
Misc. Mfg	Cooling	Insulation - Wall Cavity	sqft	New	0.00	45	\$0.15	45%	50%	\$0.01	0.62	0.63	Building Energy Simulation Tool
Misc. Mfg	Heating	Insulation - Wall Cavity	sqft	New	0.54	45	\$0.15	45%	50%	\$0.01	133.12	133.19	Building Energy Simulation Tool
Misc. Mfg	Ventilation	Insulation - Wall Cavity	sqft	New	0.01	45	\$0.15	45%	50%	\$0.01	16.22	17.77	Building Energy Simulation Tool

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Misc. Mfg	Cooling	HVAC - Duct Repair and Sealing	sqft	New	0.02	18	\$0.00	15%	25%	\$0.00	10.00	10.12	Building Energy Simulation Tool
Misc. Mfg	Heating	HVAC - Duct Repair and Sealing	sqft	New	0.04	18	\$0.00	15%	25%	\$0.00	18.44	18.45	Building Energy Simulation Tool
Misc. Mfg	Ventilation	HVAC - Duct Repair and Sealing	sqft	New	0.00	18	\$0.00	15%	25%	\$0.00	2.25	2.46	Building Energy Simulation Tool
Misc. Mfg	Cooling	Chiller - Chilled Water Reset	sqft	New	0.05	10	\$0.01	15%	45%	\$0.02	7.34	7.58	AEG-BEST
Misc. Mfg	Cooling	Chiller - Chilled Water Variable-Flow System	sqft	New	0.30	15	\$0.50	15%	60%	\$0.13	78.21	80.12	AEG-BEST
Misc. Mfg	Cooling	Chiller - Variable Speed Fans	sqft	New	0.11	15	\$0.03	15%	75%	\$0.02	38.30	39.36	New Jersey TRM
Misc. Mfg	Cooling	HVAC - Economizer	sqft	New	0.02	10	\$0.25	18%	30%	\$1.04	34.40	35.35	AEG-BEST
Misc. Mfg	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.25	15%	35%	\$8.97	4.23	5.00	7th Power Plan
Misc. Mfg	Cooling	Destratification Fans (HVLS)	sqft	New	0.22	15	\$0.63	15%	50%	\$0.04	171.20	175.84	AEG Research
Misc. Mfg	Heating	Destratification Fans (HVLS)	sqft	New	0.99	15	\$0.63	15%	50%	\$0.04	818.20	819.93	AEG Research
Misc. Mfg	Cooling	RTU - Maintenance	sqft	New	0.12	3	\$0.07	15%	75%	\$0.16	11.50	12.26	AEG Research
Misc. Mfg	Cooling	Thermostat - WiFi/Interactive	sqft	New	0.34	5	\$0.66	5%	15%	\$0.10	20.85	21.48	7th Power Plan
Misc. Mfg	Heating	Thermostat - WiFi/Interactive	sqft	New	0.79	5	\$0.66	5%	15%	\$0.10	51.34	51.27	7th Power Plan
Misc. Mfg	Ventilation	Thermostat - WiFi/Interactive	sqft	New	0.02	5	\$0.66	5%	15%	\$0.10	6.34	7.68	7th Power Plan
Misc. Mfg	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.02	15	\$0.35	22%	41%	\$0.72	1,139.69	1,331.24	7th Power Plan
Misc. Mfg	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.03	15	\$0.58	22%	41%	\$0.85	1,543.93	1,813.05	7th Power Plan
Misc. Mfg	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	New	0.02	15	\$0.00	1%	2%	\$0.01	1.33	1.73	7th Power Plan
Misc. Mfg	Interior Lighting	Interior Lighting - Timeclocks and Timers	sqft	New	0.00	8	\$0.00	7%	7%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Misc. Mfg	Interior Lighting	Interior Lighting - Skylights	sqft	New	0.00	15	\$1.01	18%	24%	\$0.00	0.00	0.00	AEG Research
Misc. Mfg	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	sqft	New	0.03	16	\$1.81	5%	40%	\$2.85	60.28	77.40	7th Power Plan

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Misc. Mfg	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	New	0.03	11	\$0.00	15%	50%	\$0.01	46.92	60.83	Illinois TRM
Misc. Mfg	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	sqft	New	0.04	8	\$0.03	15%	25%	\$0.07	43.22	60.18	7th Power Plan
Misc. Mfg	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	New	0.02	8	\$0.02	44%	60%	\$0.07	36.95	51.17	Pacific Gas and Electric Research
Misc. Mfg	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	New	0.02	7	\$1.19	15%	30%	\$3.69	37.52	52.41	AEG Research
Misc. Mfg	Process	Process - Conductivity Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Misc. Mfg	Process	Process - Timers and Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Misc. Mfg	Motors	Process - Timers and Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Misc. Mfg	Process	Refrigeration - Floating Head Pressure	employee	New	41.94	15	\$28.83	20%	50%	\$0.06	56.92	56.89	RTF Workbook
Misc. Mfg	Process	Refrigeration - System Optimization	employee	New	67.21	15	\$10.08	20%	50%	\$0.01	91.16	91.16	AEG Research
Misc. Mfg	Motors	Pumping System - Equipment Upgrade	employee	New	290.78	10	\$41.87	9%	38%	\$0.02	294.55	293.26	7th Power Plan
Misc. Mfg	Motors	Pumping System - System Optimization	employee	New	216.27	12	\$63.82	9%	38%	\$0.03	360.99	357.69	UNIDO Study on Industrial Energy Efficiency
Misc. Mfg	Motors	Pumping System - Variable Speed Drive	employee	New	215.53	10	\$66.39	9%	38%	\$0.03	332.48	329.19	UNIDO Study on Industrial Energy Efficiency
Misc. Mfg	Motors	Fan System - Equipment Upgrade	employee	New	106.89	10	\$10.47	9%	38%	\$0.01	163.77	163.36	UNIDO Study on Industrial Energy Efficiency
Misc. Mfg	Motors	Fan System - Flow Optimization	employee	New	125.52	10	\$17.32	9%	38%	\$0.02	192.80	191.78	UNIDO Study on Industrial Energy Efficiency
Misc. Mfg	Motors	Fan System - Variable Speed Drive	employee	New	188.67	10	\$87.17	9%	38%	\$0.05	291.79	288.16	UNIDO Study on Industrial Energy Efficiency
Misc. Mfg	Motors	Compressed Air - Equipment Upgrade	employee	New	361.27	10	\$26.29	17%	50%	\$0.01	424.74	424.74	7th Power Plan
Misc. Mfg	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	New	0.00	15	\$0.00	16%	38%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Misc. Mfg	Motors	Compressed Air - Refrigerated Cycling Dryers	employee	New	0.00	10	\$0.00	16%	30%	\$0.00	0.00	0.00	Michigan Energy Measures Database

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Misc. Mfg	Motors	Compressed Air - System Controls	employee	New	80.98	10	\$18.80	9%	38%	\$0.03	82.22	81.72	UNIDO Study on Industrial Energy Efficiency
Misc. Mfg	Motors	Compressed Air - Leak Management Program	employee	New	205.10	10	\$18.89	18%	75%	\$0.01	414.44	413.52	7th Power Plan
Misc. Mfg	Motors	Compressed Air - Variable Speed Drive	employee	New	149.15	15	\$115.24	26%	45%	\$0.06	130.81	129.58	UNIDO Study on Industrial Energy Efficiency
Misc. Mfg	Motors	Compressed Air - Low Pressure-Drop Filters	employee	New	5.02	10	\$1.78	17%	50%	\$0.04	5.96	5.92	Illinois TRM
Misc. Mfg	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	New	30.45	10	\$5.76	17%	50%	\$0.02	36.04	35.83	UNIDO Study on Industrial Energy Efficiency
Misc. Mfg	Motors	Compressed Air - Outside Air Intake	employee	New	0.00	20	\$0.00	17%	50%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Misc. Mfg	Motors	Compressed Air - Receiver Capacity Addition	employee	New	29.96	15	\$15.85	17%	50%	\$0.04	45.93	45.53	UNIDO Study on Industrial Energy Efficiency
Misc. Mfg	Motors	Material Handling - Variable Speed Drive	employee	New	501.42	10	\$175.90	25%	45%	\$0.04	543.25	537.43	7th Power Plan
Misc. Mfg	Motors	Motors - Green Rewind (<100 HP)	employee	New	11.55	10	\$4.89	10%	50%	\$0.05	125.32	123.80	7th Power Plan
Misc. Mfg	Motors	Motors - Green Rewind (100 HP+)	employee	New	6.47	10	\$1.74	6%	25%	\$0.03	33.29	32.96	7th Power Plan
Misc. Mfg	Motors	Switch from Belt Drive to Direct Drive	employee	New	97.85	12	\$21.46	16%	25%	\$0.02	271.82	269.75	2015-mdu-irp-report---volume-iii.pdf
Misc. Mfg	Motors	Motors - Synchronous Belts	employee	New	26.01	10	\$6.46	16%	36%	\$0.03	92.44	91.85	7th Power Plan
Misc. Mfg	Miscellaneous	Agriculture - Engine Block Timer	employee	New	784.61	3	\$9.68	0%	0%	\$0.00	0.00	0.00	Vermont TRM
Misc. Mfg	Motors	Agriculture - Live Stock Waterer	employee	New	709.58	10	\$368.78	0%	0%	\$0.06	0.00	0.00	Ontario Power TRM
Misc. Mfg	Process	Dairy - Milk Precoolers	employee	New	279.57	15	\$129.80	0%	0%	\$0.04	0.00	0.00	Ontario Power TRM
Misc. Mfg	Process	Clean Room: Change Filter Strategy	employee	New	86.23	15	\$0.64	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Misc. Mfg	Process	Clean Room: Chiller Optimize	employee	New	83.01	15	\$7.69	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Misc. Mfg	Process	Clean Room: Clean Room HVAC	employee	New	50.32	15	\$9.28	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Misc. Mfg	Process	Elec Chip Fab: Solidstate Chiller	employee	New	50.32	15	\$29.14	0%	0%	\$0.05	0.00	0.00	7th Power Plan
Misc. Mfg	Process	Elec Chip Fab: Eliminate Exhaust	employee	New	10.76	15	\$2.29	0%	0%	\$0.02	0.00	0.00	7th Power Plan

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Misc. Mfg	Process	Elec Chip Fab: Exhaust Injector	employee	New	21.52	15	\$11.04	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Misc. Mfg	Process	Elec Chip Fab: Reduce Gas Pressure	employee	New	21.56	15	\$0.22	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Misc. Mfg	Motors	Panel: Hydraulic Press	employee	New	756.20	10	\$175.80	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Misc. Mfg	Motors	Wood: Replace Pneumatic Conveyor	employee	New	798.60	10	\$13.17	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Misc. Mfg	Process	Metal: New Arc Furnace	employee	New	959.88	10	\$100.76	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Misc. Mfg	Process	Paper: Premium Control Large Material	employee	New	138.46	10	\$69.38	0%	0%	\$0.06	0.00	0.00	7th Power Plan
Misc. Mfg	Process	Paper: Efficient Pulp Screen	employee	New	110.90	10	\$22.85	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Misc. Mfg	Process	Kraft: Effluent Treatment System	employee	New	111.08	10	\$9.37	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Misc. Mfg	Motors	Kraft: Efficient Agitator	employee	New	1,361.25	10	\$131.18	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Misc. Mfg	Process	Mech Pulp: Premium Process	employee	New	1.24	5	\$0.16	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Misc. Mfg	Motors	Mech Pulp: Refiner Plate Improvement	employee	New	11.95	1	\$0.50	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Misc. Mfg	Cooling	Transformer - High Efficiency	employee	New	86.32	10	\$61.51	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Misc. Mfg	Heating	Transformer - High Efficiency	employee	New	207.63	10	\$61.51	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Misc. Mfg	Ventilation	Transformer - High Efficiency	employee	New	4.03	10	\$61.51	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Misc. Mfg	Interior Lighting	Transformer - High Efficiency	employee	New	23.59	10	\$61.51	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Misc. Mfg	Exterior Lighting	Transformer - High Efficiency	employee	New	4.79	10	\$61.51	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Misc. Mfg	Motors	Transformer - High Efficiency	employee	New	95.76	10	\$61.51	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Misc. Mfg	Process	Transformer - High Efficiency	employee	New	55.40	10	\$61.51	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Misc. Mfg	Miscellaneous	Transformer - High Efficiency	employee	New	28.13	10	\$61.51	15%	15%	\$0.01	0.00	0.00	7th Power Plan
Misc. Mfg	Cooling	Strategic Energy Management	employee	New	246.39	3	\$377.77	0%	5%	\$0.07	1.03	1.08	AEG Research
Misc. Mfg	Heating	Strategic Energy Management	employee	New	597.11	3	\$377.77	0%	5%	\$0.07	2.65	2.66	AEG Research

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Misc. Mfg	Ventilation	Strategic Energy Management	employee	New	11.59	3	\$377.77	0%	5%	\$0.07	0.33	0.41	AEG Research
Misc. Mfg	Interior Lighting	Strategic Energy Management	employee	New	68.16	3	\$377.77	0%	5%	\$0.07	1.48	2.15	AEG Research
Misc. Mfg	Exterior Lighting	Strategic Energy Management	employee	New	13.83	3	\$377.77	0%	5%	\$0.07	0.31	0.48	AEG Research
Misc. Mfg	Motors	Strategic Energy Management	employee	New	276.64	3	\$377.77	0%	5%	\$0.07	6.12	6.15	AEG Research
Misc. Mfg	Process	Strategic Energy Management	employee	New	160.03	3	\$377.77	0%	5%	\$0.07	3.50	3.50	AEG Research
Misc. Mfg	Miscellaneous	Strategic Energy Management	employee	New	81.26	3	\$377.77	0%	5%	\$0.07	2.20	1.48	AEG Research
Misc. Mfg	Interior Lighting	Commissioning	employee	New	78.62	3	\$319.32	5%	39%	\$0.13	11.60	16.87	AEG Research
Misc. Mfg	Exterior Lighting	Commissioning	employee	New	15.96	3	\$319.32	5%	39%	\$0.13	2.46	3.74	AEG Research
Misc. Mfg	Motors	Commissioning	employee	New	319.13	3	\$319.32	5%	39%	\$0.13	48.03	48.25	AEG Research
Misc. Mfg	Process	Commissioning	employee	New	184.61	3	\$319.32	5%	39%	\$0.13	27.46	27.46	AEG Research
Misc. Mfg	Miscellaneous	Commissioning	employee	New	93.74	3	\$319.32	5%	39%	\$0.13	17.25	11.63	AEG Research
Misc. Mfg	Interior Lighting	Retrocommissioning	employee	New	78.64	3	\$202.71	0%	0%	\$0.08	0.00	0.00	AEG Research
Misc. Mfg	Exterior Lighting	Retrocommissioning	employee	New	15.96	3	\$202.71	0%	0%	\$0.08	0.00	0.00	AEG Research
Misc. Mfg	Motors	Retrocommissioning	employee	New	319.20	3	\$202.71	0%	0%	\$0.08	0.00	0.00	AEG Research
Misc. Mfg	Process	Retrocommissioning	employee	New	184.65	3	\$202.71	0%	0%	\$0.08	0.00	0.00	AEG Research
Misc. Mfg	Miscellaneous	Retrocommissioning	employee	New	93.76	3	\$202.71	0%	0%	\$0.08	0.00	0.00	AEG Research
Misc. Mfg	Motors	Municipal Sewage Treatment	employee	New	38.35	12	\$21.05	0%	0%	\$0.05	0.00	0.00	7th Power Plan
Misc. Mfg	Motors	Municipal Water Supply Treatment	employee	New	0.00	12	\$0.00	0%	0%	\$0.00	0.00	0.00	7th Power Plan

Washington Industrial Measures Assumptions

Table H-14 Comparison of 7th Plan and RTF Industrial Measures in Washington

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Agriculture	Cooling	Air-Cooled Chiller	1 kBTU/hr	Existing	17.53	20	\$26.36	3%	at stock turnover	\$0.15	13.23	15.56	Annual Energy Outlook, 2015
Agriculture	Cooling	Water-Cooled Chiller	1 kBTU/hr	Existing	26.76	25	\$12.65	3%	at stock turnover	\$0.04	20.18	23.74	Annual Energy Outlook, 2015
Agriculture	Cooling	RTU	1 kBTU/hr	Existing	2.76	15	\$6.75	12%	at stock turnover	\$0.27	11.58	14.02	Annual Energy Outlook, 2015
Agriculture	Cooling	Air-Source Heat Pump	1 kBTU/hr	Existing	5.31	15	\$21.65	2%	at stock turnover	\$0.20	2.41	2.77	Annual Energy Outlook, 2015
Agriculture	Heating	Air-Source Heat Pump	1 kBTU/hr	Existing	7.12	15	\$21.65	2%	at stock turnover	\$0.20	3.22	3.71	Annual Energy Outlook, 2015
Agriculture	Cooling	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Agriculture	Heating	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Agriculture	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Agriculture	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	13%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Agriculture	Ventilation	Ventilation	1000 CFM	Existing	1,927.40	20	\$1,219.71	100%	at stock turnover	\$0.06	93.68	106.67	AEG-BEST
Agriculture	Interior Lighting	Screw-in	lamps	Existing	26.11	8	\$4.05	100%	at stock turnover	\$0.00	19.20	40.89	7th Power Plan
Agriculture	Interior Lighting	High-Bay Fixtures	lamps	Existing	273.59	15	\$127.03	100%	at stock turnover	\$0.05	650.64	708.70	Annual Energy Outlook, 2015
Agriculture	Interior Lighting	Linear Lighting	lamps	Existing	45.74	17	\$54.19	100%	at stock turnover	\$0.09	128.20	143.77	7th Power Plan
Agriculture	Exterior Lighting	Screw-in	lamps	Existing	20.16	8	\$4.05	100%	at stock turnover	\$0.00	2.60	3.70	7th Power Plan
Agriculture	Exterior Lighting	Area Lighting	lamps	Existing	473.43	15	\$45.69	100%	at stock turnover	-\$0.05	152.39	173.73	Annual Energy Outlook, 2015
Agriculture	Exterior Lighting	Linear Lighting	lamps	Existing	45.85	17	\$54.19	100%	at stock turnover	\$0.09	36.54	40.96	7th Power Plan
Agriculture	Motors	Pumps	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Agriculture	Motors	Fans & Blowers	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Agriculture	Motors	Compressed Air	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Agriculture	Motors	Material Handling	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Agriculture	Motors	Other Motors	1 unit	Existing	0.00	10	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	N/A
Agriculture	Process	Process Heating	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Agriculture	Process	Process Cooling	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Agriculture	Process	Process Refrigeration	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Agriculture	Process	Process Electrochemical	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Agriculture	Process	Process Other	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Agriculture	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Agriculture	Cooling	Air-Cooled Chiller	1 kBTU/hr	New	15.09	20	\$26.36	3%	at stock turnover	\$0.17	6.08	6.98	Annual Energy Outlook, 2015
Agriculture	Cooling	Water-Cooled Chiller	1 kBTU/hr	New	23.28	25	\$12.65	3%	at stock turnover	\$0.05	8.52	9.87	Annual Energy Outlook, 2015
Agriculture	Cooling	RTU	1 kBTU/hr	New	2.68	15	\$6.75	12%	at stock turnover	\$0.28	4.80	5.55	Annual Energy Outlook, 2015
Agriculture	Cooling	Air-Source Heat Pump	1 kBTU/hr	New	5.17	15	\$21.65	2%	at stock turnover	\$0.20	1.04	1.17	Annual Energy Outlook, 2015
Agriculture	Heating	Air-Source Heat Pump	1 kBTU/hr	New	6.83	15	\$21.65	2%	at stock turnover	\$0.20	1.38	1.54	Annual Energy Outlook, 2015
Agriculture	Cooling	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Agriculture	Heating	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Agriculture	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Agriculture	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	13%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Agriculture	Ventilation	Ventilation	1000 CFM	New	1,668.11	20	\$1,219.71	100%	at stock turnover	\$0.07	39.89	44.74	AEG-BEST
Agriculture	Interior Lighting	Screw-in	lamps	New	26.11	8	\$4.05	100%	at stock turnover	\$0.00	5.86	7.31	7th Power Plan
Agriculture	Interior Lighting	High-Bay Fixtures	lamps	New	273.59	15	\$127.03	100%	at stock turnover	\$0.05	283.43	311.39	Annual Energy Outlook, 2015
Agriculture	Interior Lighting	Linear Lighting	lamps	New	45.74	17	\$54.19	100%	at stock turnover	\$0.09	46.55	52.13	7th Power Plan
Agriculture	Exterior Lighting	Screw-in	lamps	New	20.16	8	\$4.05	100%	at stock turnover	\$0.00	0.55	0.64	7th Power Plan
Agriculture	Exterior Lighting	Area Lighting	lamps	New	473.43	15	\$45.69	100%	at stock turnover	-\$0.05	66.71	74.94	Annual Energy Outlook, 2015
Agriculture	Exterior Lighting	Linear Lighting	lamps	New	45.85	17	\$54.19	100%	at stock turnover	\$0.09	13.22	14.80	7th Power Plan
Agriculture	Motors	Pumps	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Agriculture	Motors	Fans & Blowers	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Agriculture	Motors	Compressed Air	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Agriculture	Motors	Material Handling	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Agriculture	Motors	Other Motors	1 unit	New	0.00	10	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	N/A
Agriculture	Process	Process Heating	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Agriculture	Process	Process Cooling	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Agriculture	Process	Process Refrigeration	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Agriculture	Process	Process Electrochemical	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Agriculture	Process	Process Other	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Agriculture	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Mining and Extraction	Cooling	Air-Cooled Chiller	1 kBTU/hr	Existing	17.53	20	\$26.36	3%	at stock turnover	\$0.15	0.27	0.32	Annual Energy Outlook, 2015

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Mining and Extraction	Cooling	Water-Cooled Chiller	1 kBTU/hr	Existing	26.76	25	\$12.65	3%	at stock turnover	\$0.04	0.42	0.49	Annual Energy Outlook, 2015
Mining and Extraction	Cooling	RTU	1 kBTU/hr	Existing	2.76	15	\$6.75	12%	at stock turnover	\$0.27	0.24	0.29	Annual Energy Outlook, 2015
Mining and Extraction	Cooling	Air-Source Heat Pump	1 kBTU/hr	Existing	5.31	15	\$21.65	2%	at stock turnover	\$0.20	0.05	0.06	Annual Energy Outlook, 2015
Mining and Extraction	Heating	Air-Source Heat Pump	1 kBTU/hr	Existing	7.12	15	\$21.65	2%	at stock turnover	\$0.20	0.07	0.08	Annual Energy Outlook, 2015
Mining and Extraction	Cooling	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Mining and Extraction	Heating	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Mining and Extraction	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Mining and Extraction	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	13%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Mining and Extraction	Ventilation	Ventilation	1000 CFM	Existing	1,927.40	20	\$1,219.71	100%	at stock turnover	\$0.06	1.94	2.21	AEG-BEST
Mining and Extraction	Interior Lighting	Screw-in	lamps	Existing	25.47	8	\$4.05	100%	at stock turnover	\$0.00	0.61	1.29	7th Power Plan
Mining and Extraction	Interior Lighting	High-Bay Fixtures	lamps	Existing	138.46	15	\$127.03	100%	at stock turnover	\$0.10	20.55	22.38	Annual Energy Outlook, 2015
Mining and Extraction	Interior Lighting	Linear Lighting	lamps	Existing	23.66	17	\$54.19	100%	at stock turnover	\$0.17	4.05	4.54	7th Power Plan
Mining and Extraction	Exterior Lighting	Screw-in	lamps	Existing	112.34	8	\$4.05	100%	at stock turnover	\$0.00	0.08	0.12	7th Power Plan
Mining and Extraction	Exterior Lighting	Area Lighting	lamps	Existing	2,000.67	15	\$45.69	100%	at stock turnover	-\$0.01	4.81	5.49	Annual Energy Outlook, 2015
Mining and Extraction	Exterior Lighting	Linear Lighting	lamps	Existing	162.83	17	\$54.19	100%	at stock turnover	\$0.02	1.15	1.29	7th Power Plan
Mining and Extraction	Motors	Pumps	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Mining and Extraction	Motors	Fans & Blowers	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Mining and Extraction	Motors	Compressed Air	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Mining and Extraction	Motors	Material Handling	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Mining and Extraction	Motors	Other Motors	1 unit	Existing	0.00	10	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	N/A
Mining and Extraction	Process	Process Heating	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Mining and Extraction	Process	Process Cooling	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Mining and Extraction	Process	Process Refrigeration	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Mining and Extraction	Process	Process Electrochemical	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Mining and Extraction	Process	Process Other	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Mining and Extraction	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Mining and Extraction	Cooling	Air-Cooled Chiller	1 kBTU/hr	New	15.09	20	\$26.36	3%	at stock turnover	\$0.17	0.13	0.15	Annual Energy Outlook, 2015
Mining and Extraction	Cooling	Water-Cooled Chiller	1 kBTU/hr	New	23.28	25	\$12.65	3%	at stock turnover	\$0.05	0.18	0.21	Annual Energy Outlook, 2015
Mining and Extraction	Cooling	RTU	1 kBTU/hr	New	2.68	15	\$6.75	12%	at stock turnover	\$0.28	0.10	0.12	Annual Energy Outlook, 2015
Mining and Extraction	Cooling	Air-Source Heat Pump	1 kBTU/hr	New	5.17	15	\$21.65	2%	at stock turnover	\$0.20	0.02	0.02	Annual Energy Outlook, 2015
Mining and Extraction	Heating	Air-Source Heat Pump	1 kBTU/hr	New	6.83	15	\$21.65	2%	at stock turnover	\$0.20	0.03	0.03	Annual Energy Outlook, 2015
Mining and Extraction	Cooling	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Mining and Extraction	Heating	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Mining and Extraction	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Mining and Extraction	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	13%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Mining and Extraction	Ventilation	Ventilation	1000 CFM	New	1,668.11	20	\$1,219.71	100%	at stock turnover	\$0.07	0.85	0.95	AEG-BEST
Mining and Extraction	Interior Lighting	Screw-in	lamps	New	25.47	8	\$4.05	100%	at stock turnover	\$0.00	0.19	0.24	7th Power Plan
Mining and Extraction	Interior Lighting	High-Bay Fixtures	lamps	New	138.46	15	\$127.03	100%	at stock turnover	\$0.10	9.22	10.14	Annual Energy Outlook, 2015

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Mining and Extraction	Interior Lighting	Linear Lighting	lamps	New	23.66	17	\$54.19	100%	at stock turnover	\$0.17	1.55	1.73	7th Power Plan
Mining and Extraction	Exterior Lighting	Screw-in	lamps	New	112.34	8	\$4.05	100%	at stock turnover	\$0.00	0.02	0.02	7th Power Plan
Mining and Extraction	Exterior Lighting	Area Lighting	lamps	New	2,000.67	15	\$45.69	100%	at stock turnover	-\$0.01	2.17	2.44	Annual Energy Outlook, 2015
Mining and Extraction	Exterior Lighting	Linear Lighting	lamps	New	162.83	17	\$54.19	100%	at stock turnover	\$0.02	0.44	0.49	7th Power Plan
Mining and Extraction	Motors	Pumps	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Mining and Extraction	Motors	Fans & Blowers	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Mining and Extraction	Motors	Compressed Air	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Mining and Extraction	Motors	Material Handling	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Mining and Extraction	Motors	Other Motors	1 unit	New	0.00	10	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	N/A
Mining and Extraction	Process	Process Heating	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Mining and Extraction	Process	Process Cooling	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Mining and Extraction	Process	Process Refrigeration	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Mining and Extraction	Process	Process Electrochemical	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Mining and Extraction	Process	Process Other	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Mining and Extraction	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Food Mfg	Cooling	Air-Cooled Chiller	1 kBTU/hr	Existing	17.53	20	\$26.36	3%	at stock turnover	\$0.15	6.71	7.89	Annual Energy Outlook, 2015
Food Mfg	Cooling	Water-Cooled Chiller	1 kBTU/hr	Existing	26.76	25	\$12.65	3%	at stock turnover	\$0.04	10.24	12.05	Annual Energy Outlook, 2015
Food Mfg	Cooling	RTU	1 kBTU/hr	Existing	2.76	15	\$6.75	12%	at stock turnover	\$0.27	5.88	7.11	Annual Energy Outlook, 2015
Food Mfg	Cooling	Air-Source Heat Pump	1 kBTU/hr	Existing	5.31	15	\$21.65	2%	at stock turnover	\$0.20	1.22	1.41	Annual Energy Outlook, 2015

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Food Mfg	Heating	Air-Source Heat Pump	1 kBTU/hr	Existing	7.12	15	\$21.65	2%	at stock turnover	\$0.20	1.64	1.88	Annual Energy Outlook, 2015
Food Mfg	Cooling	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Food Mfg	Heating	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Food Mfg	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Food Mfg	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	13%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Food Mfg	Ventilation	Ventilation	1000 CFM	Existing	1,927.40	20	\$1,219.71	100%	at stock turnover	\$0.06	47.53	54.12	AEG-BEST
Food Mfg	Interior Lighting	Screw-in	lamps	Existing	25.47	8	\$4.05	100%	at stock turnover	\$0.00	24.06	51.24	7th Power Plan
Food Mfg	Interior Lighting	High-Bay Fixtures	lamps	Existing	138.46	15	\$127.03	100%	at stock turnover	\$0.10	815.32	888.07	Annual Energy Outlook, 2015
Food Mfg	Interior Lighting	Linear Lighting	lamps	Existing	23.66	17	\$54.19	100%	at stock turnover	\$0.17	160.65	180.16	7th Power Plan
Food Mfg	Exterior Lighting	Screw-in	lamps	Existing	112.34	8	\$4.05	100%	at stock turnover	\$0.00	3.25	4.63	7th Power Plan
Food Mfg	Exterior Lighting	Area Lighting	lamps	Existing	2,000.67	15	\$45.69	100%	at stock turnover	-\$0.01	190.96	217.70	Annual Energy Outlook, 2015
Food Mfg	Exterior Lighting	Linear Lighting	lamps	Existing	162.83	17	\$54.19	100%	at stock turnover	\$0.02	45.79	51.32	7th Power Plan
Food Mfg	Motors	Pumps	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Food Mfg	Motors	Fans & Blowers	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Food Mfg	Motors	Compressed Air	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Food Mfg	Motors	Material Handling	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Food Mfg	Motors	Other Motors	1 unit	Existing	0.00	10	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	N/A
Food Mfg	Process	Process Heating	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Food Mfg	Process	Process Cooling	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Food Mfg	Process	Process Refrigeration	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Food Mfg	Process	Process Electrochemical	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Food Mfg	Process	Process Other	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Food Mfg	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Food Mfg	Cooling	Air-Cooled Chiller	1 kBTU/hr	New	15.09	20	\$26.36	3%	at stock turnover	\$0.17	3.09	3.54	Annual Energy Outlook, 2015
Food Mfg	Cooling	Water-Cooled Chiller	1 kBTU/hr	New	23.28	25	\$12.65	3%	at stock turnover	\$0.05	4.32	5.01	Annual Energy Outlook, 2015
Food Mfg	Cooling	RTU	1 kBTU/hr	New	2.68	15	\$6.75	12%	at stock turnover	\$0.28	2.44	2.82	Annual Energy Outlook, 2015
Food Mfg	Cooling	Air-Source Heat Pump	1 kBTU/hr	New	5.17	15	\$21.65	2%	at stock turnover	\$0.20	0.53	0.59	Annual Energy Outlook, 2015
Food Mfg	Heating	Air-Source Heat Pump	1 kBTU/hr	New	6.83	15	\$21.65	2%	at stock turnover	\$0.20	0.70	0.78	Annual Energy Outlook, 2015
Food Mfg	Cooling	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Food Mfg	Heating	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Food Mfg	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Food Mfg	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	13%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Food Mfg	Ventilation	Ventilation	1000 CFM	New	1,668.11	20	\$1,219.71	100%	at stock turnover	\$0.07	20.25	22.71	AEG-BEST
Food Mfg	Interior Lighting	Screw-in	lamps	New	25.47	8	\$4.05	100%	at stock turnover	\$0.00	7.35	9.17	7th Power Plan
Food Mfg	Interior Lighting	High-Bay Fixtures	lamps	New	138.46	15	\$127.03	100%	at stock turnover	\$0.10	355.43	390.50	Annual Energy Outlook, 2015
Food Mfg	Interior Lighting	Linear Lighting	lamps	New	23.66	17	\$54.19	100%	at stock turnover	\$0.17	58.41	65.40	7th Power Plan
Food Mfg	Exterior Lighting	Screw-in	lamps	New	112.34	8	\$4.05	100%	at stock turnover	\$0.00	0.69	0.80	7th Power Plan
Food Mfg	Exterior Lighting	Area Lighting	lamps	New	2,000.67	15	\$45.69	100%	at stock turnover	-\$0.01	83.66	93.97	Annual Energy Outlook, 2015

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Food Mfg	Exterior Lighting	Linear Lighting	lamps	New	162.83	17	\$54.19	100%	at stock turnover	\$0.02	16.59	18.57	7th Power Plan
Food Mfg	Motors	Pumps	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Food Mfg	Motors	Fans & Blowers	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Food Mfg	Motors	Compressed Air	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Food Mfg	Motors	Material Handling	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Food Mfg	Motors	Other Motors	1 unit	New	0.00	10	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	N/A
Food Mfg	Process	Process Heating	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Food Mfg	Process	Process Cooling	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Food Mfg	Process	Process Refrigeration	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Food Mfg	Process	Process Electrochemical	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Food Mfg	Process	Process Other	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Food Mfg	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Paper Mfg	Cooling	Air-Cooled Chiller	1 kBTU/hr	Existing	17.53	20	\$26.36	3%	at stock turnover	\$0.15	10.36	12.19	Annual Energy Outlook, 2015
Paper Mfg	Cooling	Water-Cooled Chiller	1 kBTU/hr	Existing	26.76	25	\$12.65	3%	at stock turnover	\$0.04	15.81	18.60	Annual Energy Outlook, 2015
Paper Mfg	Cooling	RTU	1 kBTU/hr	Existing	2.76	15	\$6.75	12%	at stock turnover	\$0.27	9.07	10.98	Annual Energy Outlook, 2015
Paper Mfg	Cooling	Air-Source Heat Pump	1 kBTU/hr	Existing	5.31	15	\$21.65	2%	at stock turnover	\$0.20	1.89	2.17	Annual Energy Outlook, 2015
Paper Mfg	Heating	Air-Source Heat Pump	1 kBTU/hr	Existing	7.12	15	\$21.65	2%	at stock turnover	\$0.20	2.52	2.91	Annual Energy Outlook, 2015
Paper Mfg	Cooling	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Paper Mfg	Heating	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Paper Mfg	Heating	Electric Furnace	1 kBtu/hr	Existing	0.00	18	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Paper Mfg	Heating	Electric Room Heat	3.5 kBtu/hr	Existing	0.00	18	\$0.00	13%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Paper Mfg	Ventilation	Ventilation	1000 CFM	Existing	1,927.40	20	\$1,219.71	100%	at stock turnover	\$0.06	73.38	83.56	AEG-BEST
Paper Mfg	Interior Lighting	Screw-in	lamps	Existing	25.47	8	\$4.05	100%	at stock turnover	\$0.00	49.84	106.16	7th Power Plan
Paper Mfg	Interior Lighting	High-Bay Fixtures	lamps	Existing	138.46	15	\$127.03	100%	at stock turnover	\$0.10	1,689.22	1,839.95	Annual Energy Outlook, 2015
Paper Mfg	Interior Lighting	Linear Lighting	lamps	Existing	23.66	17	\$54.19	100%	at stock turnover	\$0.17	332.83	373.27	7th Power Plan
Paper Mfg	Exterior Lighting	Screw-in	lamps	Existing	112.34	8	\$4.05	100%	at stock turnover	\$0.00	6.74	9.60	7th Power Plan
Paper Mfg	Exterior Lighting	Area Lighting	lamps	Existing	2,000.67	15	\$45.69	100%	at stock turnover	-\$0.01	395.64	451.04	Annual Energy Outlook, 2015
Paper Mfg	Exterior Lighting	Linear Lighting	lamps	Existing	162.83	17	\$54.19	100%	at stock turnover	\$0.02	94.86	106.34	7th Power Plan
Paper Mfg	Motors	Pumps	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Paper Mfg	Motors	Fans & Blowers	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Paper Mfg	Motors	Compressed Air	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Paper Mfg	Motors	Material Handling	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Paper Mfg	Motors	Other Motors	1 unit	Existing	0.00	10	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	N/A
Paper Mfg	Process	Process Heating	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Paper Mfg	Process	Process Cooling	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Paper Mfg	Process	Process Refrigeration	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Paper Mfg	Process	Process Electrochemical	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Paper Mfg	Process	Process Other	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Paper Mfg	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Paper Mfg	Cooling	Air-Cooled Chiller	1 kBTU/hr	New	15.09	20	\$26.36	3%	at stock turnover	\$0.17	4.78	5.49	Annual Energy Outlook, 2015
Paper Mfg	Cooling	Water-Cooled Chiller	1 kBTU/hr	New	23.28	25	\$12.65	3%	at stock turnover	\$0.05	6.68	7.73	Annual Energy Outlook, 2015
Paper Mfg	Cooling	RTU	1 kBTU/hr	New	2.68	15	\$6.75	12%	at stock turnover	\$0.28	3.78	4.37	Annual Energy Outlook, 2015
Paper Mfg	Cooling	Air-Source Heat Pump	1 kBTU/hr	New	5.17	15	\$21.65	2%	at stock turnover	\$0.20	0.82	0.92	Annual Energy Outlook, 2015
Paper Mfg	Heating	Air-Source Heat Pump	1 kBTU/hr	New	6.83	15	\$21.65	2%	at stock turnover	\$0.20	1.09	1.21	Annual Energy Outlook, 2015
Paper Mfg	Cooling	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Paper Mfg	Heating	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Paper Mfg	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Paper Mfg	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	13%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Paper Mfg	Ventilation	Ventilation	1000 CFM	New	1,668.11	20	\$1,219.71	100%	at stock turnover	\$0.07	31.40	35.20	AEG-BEST
Paper Mfg	Interior Lighting	Screw-in	lamps	New	25.47	8	\$4.05	100%	at stock turnover	\$0.00	15.27	19.14	7th Power Plan
Paper Mfg	Interior Lighting	High-Bay Fixtures	lamps	New	138.46	15	\$127.03	100%	at stock turnover	\$0.10	739.89	812.93	Annual Energy Outlook, 2015
Paper Mfg	Interior Lighting	Linear Lighting	lamps	New	23.66	17	\$54.19	100%	at stock turnover	\$0.17	122.04	136.57	7th Power Plan
Paper Mfg	Exterior Lighting	Screw-in	lamps	New	112.34	8	\$4.05	100%	at stock turnover	\$0.00	1.43	1.68	7th Power Plan
Paper Mfg	Exterior Lighting	Area Lighting	lamps	New	2,000.67	15	\$45.69	100%	at stock turnover	-\$0.01	174.17	195.63	Annual Energy Outlook, 2015
Paper Mfg	Exterior Lighting	Linear Lighting	lamps	New	162.83	17	\$54.19	100%	at stock turnover	\$0.02	34.66	38.77	7th Power Plan
Paper Mfg	Motors	Pumps	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Paper Mfg	Motors	Fans & Blowers	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Paper Mfg	Motors	Compressed Air	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Paper Mfg	Motors	Material Handling	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Paper Mfg	Motors	Other Motors	1 unit	New	0.00	10	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	N/A
Paper Mfg	Process	Process Heating	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Paper Mfg	Process	Process Cooling	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Paper Mfg	Process	Process Refrigeration	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Paper Mfg	Process	Process Electrochemical	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Paper Mfg	Process	Process Other	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Paper Mfg	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Petroleum Refining	Cooling	Air-Cooled Chiller	1 kBTU/hr	Existing	17.53	20	\$26.36	3%	at stock turnover	\$0.15	0.04	0.05	Annual Energy Outlook, 2015
Petroleum Refining	Cooling	Water-Cooled Chiller	1 kBTU/hr	Existing	26.76	25	\$12.65	3%	at stock turnover	\$0.04	0.06	0.08	Annual Energy Outlook, 2015
Petroleum Refining	Cooling	RTU	1 kBTU/hr	Existing	2.76	15	\$6.75	12%	at stock turnover	\$0.27	0.04	0.04	Annual Energy Outlook, 2015
Petroleum Refining	Cooling	Air-Source Heat Pump	1 kBTU/hr	Existing	5.31	15	\$21.65	2%	at stock turnover	\$0.20	0.01	0.01	Annual Energy Outlook, 2015
Petroleum Refining	Heating	Air-Source Heat Pump	1 kBTU/hr	Existing	7.12	15	\$21.65	2%	at stock turnover	\$0.20	0.01	0.01	Annual Energy Outlook, 2015
Petroleum Refining	Cooling	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Petroleum Refining	Heating	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Petroleum Refining	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Petroleum Refining	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	13%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Petroleum Refining	Ventilation	Ventilation	1000 CFM	Existing	1,927.40	20	\$1,219.71	100%	at stock turnover	\$0.06	0.30	0.34	AEG-BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Petroleum Refining	Interior Lighting	Screw-in	lamps	Existing	25.47	8	\$4.05	100%	at stock turnover	\$0.00	0.05	0.10	7th Power Plan
Petroleum Refining	Interior Lighting	High-Bay Fixtures	lamps	Existing	138.46	15	\$127.03	100%	at stock turnover	\$0.10	1.63	1.77	Annual Energy Outlook, 2015
Petroleum Refining	Interior Lighting	Linear Lighting	lamps	Existing	23.66	17	\$54.19	100%	at stock turnover	\$0.17	0.32	0.36	7th Power Plan
Petroleum Refining	Exterior Lighting	Screw-in	lamps	Existing	112.34	8	\$4.05	100%	at stock turnover	\$0.00	0.01	0.01	7th Power Plan
Petroleum Refining	Exterior Lighting	Area Lighting	lamps	Existing	2,000.67	15	\$45.69	100%	at stock turnover	-\$0.01	0.38	0.43	Annual Energy Outlook, 2015
Petroleum Refining	Exterior Lighting	Linear Lighting	lamps	Existing	162.83	17	\$54.19	100%	at stock turnover	\$0.02	0.09	0.10	7th Power Plan
Petroleum Refining	Motors	Pumps	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Petroleum Refining	Motors	Fans & Blowers	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Petroleum Refining	Motors	Compressed Air	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Petroleum Refining	Motors	Material Handling	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Petroleum Refining	Motors	Other Motors	1 unit	Existing	0.00	10	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	N/A
Petroleum Refining	Process	Process Heating	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Petroleum Refining	Process	Process Cooling	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Petroleum Refining	Process	Process Refrigeration	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Petroleum Refining	Process	Process Electrochemical	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Petroleum Refining	Process	Process Other	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Petroleum Refining	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Petroleum Refining	Cooling	Air-Cooled Chiller	1 kBTU/hr	New	15.09	20	\$26.36	3%	at stock turnover	\$0.17	0.02	0.02	Annual Energy Outlook, 2015
Petroleum Refining	Cooling	Water-Cooled Chiller	1 kBTU/hr	New	23.28	25	\$12.65	3%	at stock turnover	\$0.05	0.03	0.03	Annual Energy Outlook, 2015

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Petroleum Refining	Cooling	RTU	1 kBTU/hr	New	2.68	15	\$6.75	12%	at stock turnover	\$0.28	0.02	0.02	Annual Energy Outlook, 2015
Petroleum Refining	Cooling	Air-Source Heat Pump	1 kBTU/hr	New	5.17	15	\$21.65	2%	at stock turnover	\$0.20	0.00	0.00	Annual Energy Outlook, 2015
Petroleum Refining	Heating	Air-Source Heat Pump	1 kBTU/hr	New	6.83	15	\$21.65	2%	at stock turnover	\$0.20	0.00	0.01	Annual Energy Outlook, 2015
Petroleum Refining	Cooling	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Petroleum Refining	Heating	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Petroleum Refining	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Petroleum Refining	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	13%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Petroleum Refining	Ventilation	Ventilation	1000 CFM	New	1,668.11	20	\$1,219.71	100%	at stock turnover	\$0.07	0.13	0.15	AEG-BEST
Petroleum Refining	Interior Lighting	Screw-in	lamps	New	25.47	8	\$4.05	100%	at stock turnover	\$0.00	0.01	0.02	7th Power Plan
Petroleum Refining	Interior Lighting	High-Bay Fixtures	lamps	New	138.46	15	\$127.03	100%	at stock turnover	\$0.10	0.73	0.81	Annual Energy Outlook, 2015
Petroleum Refining	Interior Lighting	Linear Lighting	lamps	New	23.66	17	\$54.19	100%	at stock turnover	\$0.17	0.12	0.14	7th Power Plan
Petroleum Refining	Exterior Lighting	Screw-in	lamps	New	112.34	8	\$4.05	100%	at stock turnover	\$0.00	0.00	0.00	7th Power Plan
Petroleum Refining	Exterior Lighting	Area Lighting	lamps	New	2,000.67	15	\$45.69	100%	at stock turnover	-\$0.01	0.17	0.19	Annual Energy Outlook, 2015
Petroleum Refining	Exterior Lighting	Linear Lighting	lamps	New	162.83	17	\$54.19	100%	at stock turnover	\$0.02	0.04	0.04	7th Power Plan
Petroleum Refining	Motors	Pumps	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Petroleum Refining	Motors	Fans & Blowers	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Petroleum Refining	Motors	Compressed Air	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Petroleum Refining	Motors	Material Handling	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Petroleum Refining	Motors	Other Motors	1 unit	New	0.00	10	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Petroleum Refining	Process	Process Heating	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Petroleum Refining	Process	Process Cooling	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Petroleum Refining	Process	Process Refrigeration	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Petroleum Refining	Process	Process Electrochemical	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Petroleum Refining	Process	Process Other	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Petroleum Refining	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Cooling	Air-Cooled Chiller	1 kBTU/hr	Existing	17.53	20	\$26.36	3%	at stock turnover	\$0.15	0.06	0.08	Annual Energy Outlook, 2015
Stone Clay Glass Products	Cooling	Water-Cooled Chiller	1 kBTU/hr	Existing	26.76	25	\$12.65	3%	at stock turnover	\$0.04	0.10	0.12	Annual Energy Outlook, 2015
Stone Clay Glass Products	Cooling	RTU	1 kBTU/hr	Existing	2.76	15	\$6.75	12%	at stock turnover	\$0.27	0.06	0.07	Annual Energy Outlook, 2015
Stone Clay Glass Products	Cooling	Air-Source Heat Pump	1 kBTU/hr	Existing	5.31	15	\$21.65	2%	at stock turnover	\$0.20	0.01	0.01	Annual Energy Outlook, 2015
Stone Clay Glass Products	Heating	Air-Source Heat Pump	1 kBTU/hr	Existing	7.12	15	\$21.65	2%	at stock turnover	\$0.20	0.02	0.02	Annual Energy Outlook, 2015
Stone Clay Glass Products	Cooling	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Stone Clay Glass Products	Heating	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Stone Clay Glass Products	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Stone Clay Glass Products	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	13%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Stone Clay Glass Products	Ventilation	Ventilation	1000 CFM	Existing	1,927.40	20	\$1,219.71	100%	at stock turnover	\$0.06	0.46	0.52	AEG-BEST
Stone Clay Glass Products	Interior Lighting	Screw-in	lamps	Existing	25.47	8	\$4.05	100%	at stock turnover	\$0.00	0.09	0.19	7th Power Plan
Stone Clay Glass Products	Interior Lighting	High-Bay Fixtures	lamps	Existing	138.46	15	\$127.03	100%	at stock turnover	\$0.10	3.07	3.34	Annual Energy Outlook, 2015
Stone Clay Glass Products	Interior Lighting	Linear Lighting	lamps	Existing	23.66	17	\$54.19	100%	at stock turnover	\$0.17	0.60	0.68	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Stone Clay Glass Products	Exterior Lighting	Screw-in	lamps	Existing	112.34	8	\$4.05	100%	at stock turnover	\$0.00	0.01	0.02	7th Power Plan
Stone Clay Glass Products	Exterior Lighting	Area Lighting	lamps	Existing	2,000.67	15	\$45.69	100%	at stock turnover	-\$0.01	0.72	0.82	Annual Energy Outlook, 2015
Stone Clay Glass Products	Exterior Lighting	Linear Lighting	lamps	Existing	162.83	17	\$54.19	100%	at stock turnover	\$0.02	0.17	0.19	7th Power Plan
Stone Clay Glass Products	Motors	Pumps	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Motors	Fans & Blowers	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Motors	Compressed Air	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Motors	Material Handling	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Motors	Other Motors	1 unit	Existing	0.00	10	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Process	Process Heating	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Process	Process Cooling	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Process	Process Refrigeration	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Process	Process Electrochemical	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Process	Process Other	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Cooling	Air-Cooled Chiller	1 kBTU/hr	New	15.09	20	\$26.36	3%	at stock turnover	\$0.17	0.03	0.04	Annual Energy Outlook, 2015
Stone Clay Glass Products	Cooling	Water-Cooled Chiller	1 kBTU/hr	New	23.28	25	\$12.65	3%	at stock turnover	\$0.05	0.04	0.05	Annual Energy Outlook, 2015
Stone Clay Glass Products	Cooling	RTU	1 kBTU/hr	New	2.68	15	\$6.75	12%	at stock turnover	\$0.28	0.02	0.03	Annual Energy Outlook, 2015
Stone Clay Glass Products	Cooling	Air-Source Heat Pump	1 kBTU/hr	New	5.17	15	\$21.65	2%	at stock turnover	\$0.20	0.01	0.01	Annual Energy Outlook, 2015
Stone Clay Glass Products	Heating	Air-Source Heat Pump	1 kBTU/hr	New	6.83	15	\$21.65	2%	at stock turnover	\$0.20	0.01	0.01	Annual Energy Outlook, 2015

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Stone Clay Glass Products	Cooling	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Stone Clay Glass Products	Heating	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Stone Clay Glass Products	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Stone Clay Glass Products	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	13%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Stone Clay Glass Products	Ventilation	Ventilation	1000 CFM	New	1,668.11	20	\$1,219.71	100%	at stock turnover	\$0.07	0.21	0.23	AEG-BEST
Stone Clay Glass Products	Interior Lighting	Screw-in	lamps	New	25.47	8	\$4.05	100%	at stock turnover	\$0.00	0.03	0.04	7th Power Plan
Stone Clay Glass Products	Interior Lighting	High-Bay Fixtures	lamps	New	138.46	15	\$127.03	100%	at stock turnover	\$0.10	1.41	1.55	Annual Energy Outlook, 2015
Stone Clay Glass Products	Interior Lighting	Linear Lighting	lamps	New	23.66	17	\$54.19	100%	at stock turnover	\$0.17	0.24	0.27	7th Power Plan
Stone Clay Glass Products	Exterior Lighting	Screw-in	lamps	New	112.34	8	\$4.05	100%	at stock turnover	\$0.00	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Exterior Lighting	Area Lighting	lamps	New	2,000.67	15	\$45.69	100%	at stock turnover	-\$0.01	0.33	0.37	Annual Energy Outlook, 2015
Stone Clay Glass Products	Exterior Lighting	Linear Lighting	lamps	New	162.83	17	\$54.19	100%	at stock turnover	\$0.02	0.07	0.08	7th Power Plan
Stone Clay Glass Products	Motors	Pumps	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Motors	Fans & Blowers	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Motors	Compressed Air	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Motors	Material Handling	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Motors	Other Motors	1 unit	New	0.00	10	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Process	Process Heating	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Process	Process Cooling	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Process	Process Refrigeration	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Stone Clay Glass Products	Process	Process Electrochemical	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Process	Process Other	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Cooling	Air-Cooled Chiller	1 kBTU/hr	Existing	17.53	20	\$26.36	3%	at stock turnover	\$0.15	1.69	1.98	Annual Energy Outlook, 2015
Transportation Equipment Mfg	Cooling	Water-Cooled Chiller	1 kBTU/hr	Existing	26.76	25	\$12.65	3%	at stock turnover	\$0.04	2.57	3.03	Annual Energy Outlook, 2015
Transportation Equipment Mfg	Cooling	RTU	1 kBTU/hr	Existing	2.76	15	\$6.75	12%	at stock turnover	\$0.27	1.48	1.79	Annual Energy Outlook, 2015
Transportation Equipment Mfg	Cooling	Air-Source Heat Pump	1 kBTU/hr	Existing	5.31	15	\$21.65	2%	at stock turnover	\$0.20	0.31	0.35	Annual Energy Outlook, 2015
Transportation Equipment Mfg	Heating	Air-Source Heat Pump	1 kBTU/hr	Existing	7.12	15	\$21.65	2%	at stock turnover	\$0.20	0.41	0.47	Annual Energy Outlook, 2015
Transportation Equipment Mfg	Cooling	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Transportation Equipment Mfg	Heating	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Transportation Equipment Mfg	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Transportation Equipment Mfg	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	13%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Transportation Equipment Mfg	Ventilation	Ventilation	1000 CFM	Existing	1,927.40	20	\$1,219.71	100%	at stock turnover	\$0.06	11.94	13.60	AEG-BEST
Transportation Equipment Mfg	Interior Lighting	Screw-in	lamps	Existing	25.47	8	\$4.05	100%	at stock turnover	\$0.00	2.09	4.44	7th Power Plan
Transportation Equipment Mfg	Interior Lighting	High-Bay Fixtures	lamps	Existing	138.46	15	\$127.03	100%	at stock turnover	\$0.10	70.69	77.00	Annual Energy Outlook, 2015
Transportation Equipment Mfg	Interior Lighting	Linear Lighting	lamps	Existing	23.66	17	\$54.19	100%	at stock turnover	\$0.17	13.93	15.62	7th Power Plan
Transportation Equipment Mfg	Exterior Lighting	Screw-in	lamps	Existing	112.34	8	\$4.05	100%	at stock turnover	\$0.00	0.28	0.40	7th Power Plan
Transportation Equipment Mfg	Exterior Lighting	Area Lighting	lamps	Existing	2,000.67	15	\$45.69	100%	at stock turnover	-\$0.01	16.56	18.88	Annual Energy Outlook, 2015
Transportation Equipment Mfg	Exterior Lighting	Linear Lighting	lamps	Existing	162.83	17	\$54.19	100%	at stock turnover	\$0.02	3.97	4.45	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Transportation Equipment Mfg	Motors	Pumps	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Motors	Fans & Blowers	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Motors	Compressed Air	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Motors	Material Handling	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Motors	Other Motors	1 unit	Existing	0.00	10	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Process	Process Heating	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Process	Process Cooling	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Process	Process Refrigeration	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Process	Process Electrochemical	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Process	Process Other	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Cooling	Air-Cooled Chiller	1 kBTU/hr	New	15.09	20	\$26.36	3%	at stock turnover	\$0.17	0.78	0.89	Annual Energy Outlook, 2015
Transportation Equipment Mfg	Cooling	Water-Cooled Chiller	1 kBTU/hr	New	23.28	25	\$12.65	3%	at stock turnover	\$0.05	1.09	1.26	Annual Energy Outlook, 2015
Transportation Equipment Mfg	Cooling	RTU	1 kBTU/hr	New	2.68	15	\$6.75	12%	at stock turnover	\$0.28	0.62	0.71	Annual Energy Outlook, 2015
Transportation Equipment Mfg	Cooling	Air-Source Heat Pump	1 kBTU/hr	New	5.17	15	\$21.65	2%	at stock turnover	\$0.20	0.13	0.15	Annual Energy Outlook, 2015
Transportation Equipment Mfg	Heating	Air-Source Heat Pump	1 kBTU/hr	New	6.83	15	\$21.65	2%	at stock turnover	\$0.20	0.18	0.20	Annual Energy Outlook, 2015
Transportation Equipment Mfg	Cooling	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Transportation Equipment Mfg	Heating	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Transportation Equipment Mfg	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Transportation Equipment Mfg	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	13%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Transportation Equipment Mfg	Ventilation	Ventilation	1000 CFM	New	1,668.11	20	\$1,219.71	100%	at stock turnover	\$0.07	5.12	5.74	AEG-BEST
Transportation Equipment Mfg	Interior Lighting	Screw-in	lamps	New	25.47	8	\$4.05	100%	at stock turnover	\$0.00	0.64	0.80	7th Power Plan
Transportation Equipment Mfg	Interior Lighting	High-Bay Fixtures	lamps	New	138.46	15	\$127.03	100%	at stock turnover	\$0.10	31.02	34.08	Annual Energy Outlook, 2015
Transportation Equipment Mfg	Interior Lighting	Linear Lighting	lamps	New	23.66	17	\$54.19	100%	at stock turnover	\$0.17	5.12	5.73	7th Power Plan
Transportation Equipment Mfg	Exterior Lighting	Screw-in	lamps	New	112.34	8	\$4.05	100%	at stock turnover	\$0.00	0.06	0.07	7th Power Plan
Transportation Equipment Mfg	Exterior Lighting	Area Lighting	lamps	New	2,000.67	15	\$45.69	100%	at stock turnover	-\$0.01	7.30	8.20	Annual Energy Outlook, 2015
Transportation Equipment Mfg	Exterior Lighting	Linear Lighting	lamps	New	162.83	17	\$54.19	100%	at stock turnover	\$0.02	1.45	1.63	7th Power Plan
Transportation Equipment Mfg	Motors	Pumps	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Motors	Fans & Blowers	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Motors	Compressed Air	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Motors	Material Handling	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Motors	Other Motors	1 unit	New	0.00	10	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Process	Process Heating	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Process	Process Cooling	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Process	Process Refrigeration	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Process	Process Electrochemical	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Process	Process Other	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Wastewater	Cooling	Air-Cooled Chiller	1 kBTU/hr	Existing	17.53	20	\$26.36	3%	at stock turnover	\$0.15	0.83	0.98	Annual Energy Outlook, 2015
Wastewater	Cooling	Water-Cooled Chiller	1 kBTU/hr	Existing	26.76	25	\$12.65	3%	at stock turnover	\$0.04	1.27	1.49	Annual Energy Outlook, 2015
Wastewater	Cooling	RTU	1 kBTU/hr	Existing	2.76	15	\$6.75	12%	at stock turnover	\$0.27	0.73	0.88	Annual Energy Outlook, 2015
Wastewater	Cooling	Air-Source Heat Pump	1 kBTU/hr	Existing	5.31	15	\$21.65	2%	at stock turnover	\$0.20	0.15	0.17	Annual Energy Outlook, 2015
Wastewater	Heating	Air-Source Heat Pump	1 kBTU/hr	Existing	7.12	15	\$21.65	2%	at stock turnover	\$0.20	0.20	0.23	Annual Energy Outlook, 2015
Wastewater	Cooling	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Wastewater	Heating	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Wastewater	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Wastewater	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	13%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Wastewater	Ventilation	Ventilation	1000 CFM	Existing	1,927.40	20	\$1,219.71	100%	at stock turnover	\$0.06	5.88	6.69	AEG-BEST
Wastewater	Interior Lighting	Screw-in	lamps	Existing	25.47	8	\$4.05	100%	at stock turnover	\$0.00	1.31	2.80	7th Power Plan
Wastewater	Interior Lighting	High-Bay Fixtures	lamps	Existing	138.46	15	\$127.03	100%	at stock turnover	\$0.10	44.53	48.50	Annual Energy Outlook, 2015
Wastewater	Interior Lighting	Linear Lighting	lamps	Existing	23.66	17	\$54.19	100%	at stock turnover	\$0.17	8.77	9.84	7th Power Plan
Wastewater	Exterior Lighting	Screw-in	lamps	Existing	112.34	8	\$4.05	100%	at stock turnover	\$0.00	0.18	0.25	7th Power Plan
Wastewater	Exterior Lighting	Area Lighting	lamps	Existing	2,000.67	15	\$45.69	100%	at stock turnover	-\$0.01	10.43	11.89	Annual Energy Outlook, 2015
Wastewater	Exterior Lighting	Linear Lighting	lamps	Existing	162.83	17	\$54.19	100%	at stock turnover	\$0.02	2.50	2.80	7th Power Plan
Wastewater	Motors	Pumps	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Wastewater	Motors	Fans & Blowers	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Wastewater	Motors	Compressed Air	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Wastewater	Motors	Material Handling	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Wastewater	Motors	Other Motors	1 unit	Existing	0.00	10	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	N/A
Wastewater	Process	Process Heating	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Wastewater	Process	Process Cooling	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Wastewater	Process	Process Refrigeration	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Wastewater	Process	Process Electrochemical	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Wastewater	Process	Process Other	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Wastewater	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Wastewater	Cooling	Air-Cooled Chiller	1 kBTU/hr	New	15.09	20	\$26.36	3%	at stock turnover	\$0.17	0.39	0.44	Annual Energy Outlook, 2015
Wastewater	Cooling	Water-Cooled Chiller	1 kBTU/hr	New	23.28	25	\$12.65	3%	at stock turnover	\$0.05	0.54	0.62	Annual Energy Outlook, 2015
Wastewater	Cooling	RTU	1 kBTU/hr	New	2.68	15	\$6.75	12%	at stock turnover	\$0.28	0.31	0.36	Annual Energy Outlook, 2015
Wastewater	Cooling	Air-Source Heat Pump	1 kBTU/hr	New	5.17	15	\$21.65	2%	at stock turnover	\$0.20	0.07	0.07	Annual Energy Outlook, 2015
Wastewater	Heating	Air-Source Heat Pump	1 kBTU/hr	New	6.83	15	\$21.65	2%	at stock turnover	\$0.20	0.09	0.10	Annual Energy Outlook, 2015
Wastewater	Cooling	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Wastewater	Heating	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Wastewater	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Wastewater	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	13%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Wastewater	Ventilation	Ventilation	1000 CFM	New	1,668.11	20	\$1,219.71	100%	at stock turnover	\$0.07	2.56	2.86	AEG-BEST
Wastewater	Interior Lighting	Screw-in	lamps	New	25.47	8	\$4.05	100%	at stock turnover	\$0.00	0.41	0.52	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Wastewater	Interior Lighting	High-Bay Fixtures	lamps	New	138.46	15	\$127.03	100%	at stock turnover	\$0.10	19.86	21.83	Annual Energy Outlook, 2015
Wastewater	Interior Lighting	Linear Lighting	lamps	New	23.66	17	\$54.19	100%	at stock turnover	\$0.17	3.32	3.71	7th Power Plan
Wastewater	Exterior Lighting	Screw-in	lamps	New	112.34	8	\$4.05	100%	at stock turnover	\$0.00	0.04	0.05	7th Power Plan
Wastewater	Exterior Lighting	Area Lighting	lamps	New	2,000.67	15	\$45.69	100%	at stock turnover	-\$0.01	4.68	5.25	Annual Energy Outlook, 2015
Wastewater	Exterior Lighting	Linear Lighting	lamps	New	162.83	17	\$54.19	100%	at stock turnover	\$0.02	0.94	1.05	7th Power Plan
Wastewater	Motors	Pumps	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Wastewater	Motors	Fans & Blowers	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Wastewater	Motors	Compressed Air	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Wastewater	Motors	Material Handling	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Wastewater	Motors	Other Motors	1 unit	New	0.00	10	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	N/A
Wastewater	Process	Process Heating	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Wastewater	Process	Process Cooling	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Wastewater	Process	Process Refrigeration	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Wastewater	Process	Process Electrochemical	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Wastewater	Process	Process Other	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Wastewater	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Water	Cooling	Air-Cooled Chiller	1 kBTU/hr	Existing	17.53	20	\$26.36	3%	at stock turnover	\$0.15	1.30	1.52	Annual Energy Outlook, 2015
Water	Cooling	Water-Cooled Chiller	1 kBTU/hr	Existing	26.76	25	\$12.65	3%	at stock turnover	\$0.04	1.98	2.33	Annual Energy Outlook, 2015
Water	Cooling	RTU	1 kBTU/hr	Existing	2.76	15	\$6.75	12%	at stock turnover	\$0.27	1.13	1.37	Annual Energy Outlook, 2015

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Water	Cooling	Air-Source Heat Pump	1 kBtu/hr	Existing	5.31	15	\$21.65	2%	at stock turnover	\$0.20	0.24	0.27	Annual Energy Outlook, 2015
Water	Heating	Air-Source Heat Pump	1 kBtu/hr	Existing	7.12	15	\$21.65	2%	at stock turnover	\$0.20	0.32	0.36	Annual Energy Outlook, 2015
Water	Cooling	Geothermal Heat Pump	1 kBtu/hr	Existing	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Water	Heating	Geothermal Heat Pump	1 kBtu/hr	Existing	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Water	Heating	Electric Furnace	1 kBtu/hr	Existing	0.00	18	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Water	Heating	Electric Room Heat	3.5 kBtu/hr	Existing	0.00	18	\$0.00	13%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Water	Ventilation	Ventilation	1000 CFM	Existing	1,927.40	20	\$1,219.71	100%	at stock turnover	\$0.06	9.18	10.45	AEG-BEST
Water	Interior Lighting	Screw-in	lamps	Existing	25.47	8	\$4.05	100%	at stock turnover	\$0.00	2.05	4.37	7th Power Plan
Water	Interior Lighting	High-Bay Fixtures	lamps	Existing	138.46	15	\$127.03	100%	at stock turnover	\$0.10	69.54	75.74	Annual Energy Outlook, 2015
Water	Interior Lighting	Linear Lighting	lamps	Existing	23.66	17	\$54.19	100%	at stock turnover	\$0.17	13.70	15.37	7th Power Plan
Water	Exterior Lighting	Screw-in	lamps	Existing	112.34	8	\$4.05	100%	at stock turnover	\$0.00	0.28	0.40	7th Power Plan
Water	Exterior Lighting	Area Lighting	lamps	Existing	2,000.67	15	\$45.69	100%	at stock turnover	-\$0.01	16.29	18.57	Annual Energy Outlook, 2015
Water	Exterior Lighting	Linear Lighting	lamps	Existing	162.83	17	\$54.19	100%	at stock turnover	\$0.02	3.91	4.38	7th Power Plan
Water	Motors	Pumps	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Water	Motors	Fans & Blowers	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Water	Motors	Compressed Air	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Water	Motors	Material Handling	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Water	Motors	Other Motors	1 unit	Existing	0.00	10	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	N/A
Water	Process	Process Heating	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Water	Process	Process Cooling	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Water	Process	Process Refrigeration	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Water	Process	Process Electrochemical	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Water	Process	Process Other	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Water	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Water	Cooling	Air-Cooled Chiller	1 kBTU/hr	New	15.09	20	\$26.36	3%	at stock turnover	\$0.17	0.60	0.69	Annual Energy Outlook, 2015
Water	Cooling	Water-Cooled Chiller	1 kBTU/hr	New	23.28	25	\$12.65	3%	at stock turnover	\$0.05	0.84	0.97	Annual Energy Outlook, 2015
Water	Cooling	RTU	1 kBTU/hr	New	2.68	15	\$6.75	12%	at stock turnover	\$0.28	0.47	0.55	Annual Energy Outlook, 2015
Water	Cooling	Air-Source Heat Pump	1 kBTU/hr	New	5.17	15	\$21.65	2%	at stock turnover	\$0.20	0.10	0.11	Annual Energy Outlook, 2015
Water	Heating	Air-Source Heat Pump	1 kBTU/hr	New	6.83	15	\$21.65	2%	at stock turnover	\$0.20	0.14	0.15	Annual Energy Outlook, 2015
Water	Cooling	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Water	Heating	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Water	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Water	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	13%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Water	Ventilation	Ventilation	1000 CFM	New	1,668.11	20	\$1,219.71	100%	at stock turnover	\$0.07	3.92	4.39	AEG-BEST
Water	Interior Lighting	Screw-in	lamps	New	25.47	8	\$4.05	100%	at stock turnover	\$0.00	0.63	0.78	7th Power Plan
Water	Interior Lighting	High-Bay Fixtures	lamps	New	138.46	15	\$127.03	100%	at stock turnover	\$0.10	30.38	33.38	Annual Energy Outlook, 2015
Water	Interior Lighting	Linear Lighting	lamps	New	23.66	17	\$54.19	100%	at stock turnover	\$0.17	5.00	5.60	7th Power Plan
Water	Exterior Lighting	Screw-in	lamps	New	112.34	8	\$4.05	100%	at stock turnover	\$0.00	0.06	0.07	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Water	Exterior Lighting	Area Lighting	lamps	New	2,000.67	15	\$45.69	100%	at stock turnover	-\$0.01	7.15	8.03	Annual Energy Outlook, 2015
Water	Exterior Lighting	Linear Lighting	lamps	New	162.83	17	\$54.19	100%	at stock turnover	\$0.02	1.42	1.59	7th Power Plan
Water	Motors	Pumps	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Water	Motors	Fans & Blowers	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Water	Motors	Compressed Air	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Water	Motors	Material Handling	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Water	Motors	Other Motors	1 unit	New	0.00	10	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	N/A
Water	Process	Process Heating	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Water	Process	Process Cooling	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Water	Process	Process Refrigeration	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Water	Process	Process Electrochemical	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Water	Process	Process Other	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Water	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Chemical Mfg	Cooling	Air-Cooled Chiller	1 kBTU/hr	Existing	17.53	20	\$26.36	3%	at stock turnover	\$0.15	0.04	0.04	Annual Energy Outlook, 2015
Chemical Mfg	Cooling	Water-Cooled Chiller	1 kBTU/hr	Existing	26.76	25	\$12.65	3%	at stock turnover	\$0.04	0.06	0.07	Annual Energy Outlook, 2015
Chemical Mfg	Cooling	RTU	1 kBTU/hr	Existing	2.76	15	\$6.75	12%	at stock turnover	\$0.27	0.03	0.04	Annual Energy Outlook, 2015
Chemical Mfg	Cooling	Air-Source Heat Pump	1 kBTU/hr	Existing	5.31	15	\$21.65	2%	at stock turnover	\$0.20	0.01	0.01	Annual Energy Outlook, 2015
Chemical Mfg	Heating	Air-Source Heat Pump	1 kBTU/hr	Existing	7.12	15	\$21.65	2%	at stock turnover	\$0.20	0.01	0.01	Annual Energy Outlook, 2015
Chemical Mfg	Cooling	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Chemical Mfg	Heating	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Chemical Mfg	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Chemical Mfg	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	13%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Chemical Mfg	Ventilation	Ventilation	1000 CFM	Existing	1,927.40	20	\$1,219.71	100%	at stock turnover	\$0.06	0.27	0.30	AEG-BEST
Chemical Mfg	Interior Lighting	Screw-in	lamps	Existing	25.47	8	\$4.05	100%	at stock turnover	\$0.00	0.04	0.09	7th Power Plan
Chemical Mfg	Interior Lighting	High-Bay Fixtures	lamps	Existing	138.46	15	\$127.03	100%	at stock turnover	\$0.10	1.38	1.50	Annual Energy Outlook, 2015
Chemical Mfg	Interior Lighting	Linear Lighting	lamps	Existing	23.66	17	\$54.19	100%	at stock turnover	\$0.17	0.27	0.30	7th Power Plan
Chemical Mfg	Exterior Lighting	Screw-in	lamps	Existing	112.34	8	\$4.05	100%	at stock turnover	\$0.00	0.01	0.01	7th Power Plan
Chemical Mfg	Exterior Lighting	Area Lighting	lamps	Existing	2,000.67	15	\$45.69	100%	at stock turnover	-\$0.01	0.32	0.37	Annual Energy Outlook, 2015
Chemical Mfg	Exterior Lighting	Linear Lighting	lamps	Existing	162.83	17	\$54.19	100%	at stock turnover	\$0.02	0.08	0.09	7th Power Plan
Chemical Mfg	Motors	Pumps	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Chemical Mfg	Motors	Fans & Blowers	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Chemical Mfg	Motors	Compressed Air	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Chemical Mfg	Motors	Material Handling	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Chemical Mfg	Motors	Other Motors	1 unit	Existing	0.00	10	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	N/A
Chemical Mfg	Process	Process Heating	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Chemical Mfg	Process	Process Cooling	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Chemical Mfg	Process	Process Refrigeration	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Chemical Mfg	Process	Process Electrochemical	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Chemical Mfg	Process	Process Other	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Chemical Mfg	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Chemical Mfg	Cooling	Air-Cooled Chiller	1 kBTU/hr	New	15.09	20	\$26.36	3%	at stock turnover	\$0.17	0.02	0.02	Annual Energy Outlook, 2015
Chemical Mfg	Cooling	Water-Cooled Chiller	1 kBTU/hr	New	23.28	25	\$12.65	3%	at stock turnover	\$0.05	0.02	0.03	Annual Energy Outlook, 2015
Chemical Mfg	Cooling	RTU	1 kBTU/hr	New	2.68	15	\$6.75	12%	at stock turnover	\$0.28	0.01	0.02	Annual Energy Outlook, 2015
Chemical Mfg	Cooling	Air-Source Heat Pump	1 kBTU/hr	New	5.17	15	\$21.65	2%	at stock turnover	\$0.20	0.00	0.00	Annual Energy Outlook, 2015
Chemical Mfg	Heating	Air-Source Heat Pump	1 kBTU/hr	New	6.83	15	\$21.65	2%	at stock turnover	\$0.20	0.00	0.00	Annual Energy Outlook, 2015
Chemical Mfg	Cooling	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Chemical Mfg	Heating	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Chemical Mfg	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Chemical Mfg	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	13%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Chemical Mfg	Ventilation	Ventilation	1000 CFM	New	1,668.11	20	\$1,219.71	100%	at stock turnover	\$0.07	0.12	0.13	AEG-BEST
Chemical Mfg	Interior Lighting	Screw-in	lamps	New	25.47	8	\$4.05	100%	at stock turnover	\$0.00	0.01	0.02	7th Power Plan
Chemical Mfg	Interior Lighting	High-Bay Fixtures	lamps	New	138.46	15	\$127.03	100%	at stock turnover	\$0.10	0.64	0.71	Annual Energy Outlook, 2015
Chemical Mfg	Interior Lighting	Linear Lighting	lamps	New	23.66	17	\$54.19	100%	at stock turnover	\$0.17	0.11	0.12	7th Power Plan
Chemical Mfg	Exterior Lighting	Screw-in	lamps	New	112.34	8	\$4.05	100%	at stock turnover	\$0.00	0.00	0.00	7th Power Plan
Chemical Mfg	Exterior Lighting	Area Lighting	lamps	New	2,000.67	15	\$45.69	100%	at stock turnover	-\$0.01	0.15	0.17	Annual Energy Outlook, 2015
Chemical Mfg	Exterior Lighting	Linear Lighting	lamps	New	162.83	17	\$54.19	100%	at stock turnover	\$0.02	0.03	0.03	7th Power Plan
Chemical Mfg	Motors	Pumps	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Chemical Mfg	Motors	Fans & Blowers	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Chemical Mfg	Motors	Compressed Air	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Chemical Mfg	Motors	Material Handling	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Chemical Mfg	Motors	Other Motors	1 unit	New	0.00	10	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	N/A
Chemical Mfg	Process	Process Heating	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Chemical Mfg	Process	Process Cooling	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Chemical Mfg	Process	Process Refrigeration	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Chemical Mfg	Process	Process Electrochemical	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Chemical Mfg	Process	Process Other	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Chemical Mfg	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Cooling	Air-Cooled Chiller	1 kBTU/hr	Existing	17.53	20	\$26.36	3%	at stock turnover	\$0.15	0.83	0.98	Annual Energy Outlook, 2015
Electronic Equipment Mfg	Cooling	Water-Cooled Chiller	1 kBTU/hr	Existing	26.76	25	\$12.65	3%	at stock turnover	\$0.04	1.27	1.49	Annual Energy Outlook, 2015
Electronic Equipment Mfg	Cooling	RTU	1 kBTU/hr	Existing	2.76	15	\$6.75	12%	at stock turnover	\$0.27	0.73	0.88	Annual Energy Outlook, 2015
Electronic Equipment Mfg	Cooling	Air-Source Heat Pump	1 kBTU/hr	Existing	5.31	15	\$21.65	2%	at stock turnover	\$0.20	0.15	0.17	Annual Energy Outlook, 2015
Electronic Equipment Mfg	Heating	Air-Source Heat Pump	1 kBTU/hr	Existing	7.12	15	\$21.65	2%	at stock turnover	\$0.20	0.20	0.23	Annual Energy Outlook, 2015
Electronic Equipment Mfg	Cooling	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Electronic Equipment Mfg	Heating	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Electronic Equipment Mfg	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Electronic Equipment Mfg	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	13%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Electronic Equipment Mfg	Ventilation	Ventilation	1000 CFM	Existing	1,927.40	20	\$1,219.71	100%	at stock turnover	\$0.06	5.89	6.71	AEG-BEST
Electronic Equipment Mfg	Interior Lighting	Screw-in	lamps	Existing	25.47	8	\$4.05	100%	at stock turnover	\$0.00	0.58	1.24	7th Power Plan
Electronic Equipment Mfg	Interior Lighting	High-Bay Fixtures	lamps	Existing	138.46	15	\$127.03	100%	at stock turnover	\$0.10	19.74	21.51	Annual Energy Outlook, 2015
Electronic Equipment Mfg	Interior Lighting	Linear Lighting	lamps	Existing	23.66	17	\$54.19	100%	at stock turnover	\$0.17	3.89	4.36	7th Power Plan
Electronic Equipment Mfg	Exterior Lighting	Screw-in	lamps	Existing	112.34	8	\$4.05	100%	at stock turnover	\$0.00	0.08	0.11	7th Power Plan
Electronic Equipment Mfg	Exterior Lighting	Area Lighting	lamps	Existing	2,000.67	15	\$45.69	100%	at stock turnover	-\$0.01	4.62	5.27	Annual Energy Outlook, 2015
Electronic Equipment Mfg	Exterior Lighting	Linear Lighting	lamps	Existing	162.83	17	\$54.19	100%	at stock turnover	\$0.02	1.11	1.24	7th Power Plan
Electronic Equipment Mfg	Motors	Pumps	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Motors	Fans & Blowers	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Motors	Compressed Air	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Motors	Material Handling	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Motors	Other Motors	1 unit	Existing	0.00	10	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Process	Process Heating	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Process	Process Cooling	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Process	Process Refrigeration	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Process	Process Electrochemical	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Process	Process Other	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Cooling	Air-Cooled Chiller	1 kBTU/hr	New	15.09	20	\$26.36	3%	at stock turnover	\$0.17	0.39	0.44	Annual Energy Outlook, 2015

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Electronic Equipment Mfg	Cooling	Water-Cooled Chiller	1 kBTU/hr	New	23.28	25	\$12.65	3%	at stock turnover	\$0.05	0.54	0.62	Annual Energy Outlook, 2015
Electronic Equipment Mfg	Cooling	RTU	1 kBTU/hr	New	2.68	15	\$6.75	12%	at stock turnover	\$0.28	0.31	0.35	Annual Energy Outlook, 2015
Electronic Equipment Mfg	Cooling	Air-Source Heat Pump	1 kBTU/hr	New	5.17	15	\$21.65	2%	at stock turnover	\$0.20	0.07	0.07	Annual Energy Outlook, 2015
Electronic Equipment Mfg	Heating	Air-Source Heat Pump	1 kBTU/hr	New	6.83	15	\$21.65	2%	at stock turnover	\$0.20	0.09	0.10	Annual Energy Outlook, 2015
Electronic Equipment Mfg	Cooling	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Electronic Equipment Mfg	Heating	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Electronic Equipment Mfg	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Electronic Equipment Mfg	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	13%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Electronic Equipment Mfg	Ventilation	Ventilation	1000 CFM	New	1,668.11	20	\$1,219.71	100%	at stock turnover	\$0.07	2.54	2.84	AEG-BEST
Electronic Equipment Mfg	Interior Lighting	Screw-in	lamps	New	25.47	8	\$4.05	100%	at stock turnover	\$0.00	0.18	0.23	7th Power Plan
Electronic Equipment Mfg	Interior Lighting	High-Bay Fixtures	lamps	New	138.46	15	\$127.03	100%	at stock turnover	\$0.10	8.71	9.58	Annual Energy Outlook, 2015
Electronic Equipment Mfg	Interior Lighting	Linear Lighting	lamps	New	23.66	17	\$54.19	100%	at stock turnover	\$0.17	1.45	1.62	7th Power Plan
Electronic Equipment Mfg	Exterior Lighting	Screw-in	lamps	New	112.34	8	\$4.05	100%	at stock turnover	\$0.00	0.02	0.02	7th Power Plan
Electronic Equipment Mfg	Exterior Lighting	Area Lighting	lamps	New	2,000.67	15	\$45.69	100%	at stock turnover	-\$0.01	2.05	2.30	Annual Energy Outlook, 2015
Electronic Equipment Mfg	Exterior Lighting	Linear Lighting	lamps	New	162.83	17	\$54.19	100%	at stock turnover	\$0.02	0.41	0.46	7th Power Plan
Electronic Equipment Mfg	Motors	Pumps	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Motors	Fans & Blowers	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Motors	Compressed Air	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Motors	Material Handling	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Electronic Equipment Mfg	Motors	Other Motors	1 unit	New	0.00	10	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Process	Process Heating	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Process	Process Cooling	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Process	Process Refrigeration	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Process	Process Electrochemical	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Process	Process Other	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Industrial Machinery	Cooling	Air-Cooled Chiller	1 kBTU/hr	Existing	17.53	20	\$26.36	3%	at stock turnover	\$0.15	5.86	6.90	Annual Energy Outlook, 2015
Industrial Machinery	Cooling	Water-Cooled Chiller	1 kBTU/hr	Existing	26.76	25	\$12.65	3%	at stock turnover	\$0.04	8.95	10.53	Annual Energy Outlook, 2015
Industrial Machinery	Cooling	RTU	1 kBTU/hr	Existing	2.76	15	\$6.75	12%	at stock turnover	\$0.27	5.13	6.22	Annual Energy Outlook, 2015
Industrial Machinery	Cooling	Air-Source Heat Pump	1 kBTU/hr	Existing	5.31	15	\$21.65	2%	at stock turnover	\$0.20	1.07	1.23	Annual Energy Outlook, 2015
Industrial Machinery	Heating	Air-Source Heat Pump	1 kBTU/hr	Existing	7.12	15	\$21.65	2%	at stock turnover	\$0.20	1.43	1.65	Annual Energy Outlook, 2015
Industrial Machinery	Cooling	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Industrial Machinery	Heating	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Industrial Machinery	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Industrial Machinery	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	13%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Industrial Machinery	Ventilation	Ventilation	1000 CFM	Existing	1,927.40	20	\$1,219.71	100%	at stock turnover	\$0.06	41.53	47.29	AEG-BEST
Industrial Machinery	Interior Lighting	Screw-in	lamps	Existing	25.47	8	\$4.05	100%	at stock turnover	\$0.00	6.13	13.05	7th Power Plan
Industrial Machinery	Interior Lighting	High-Bay Fixtures	lamps	Existing	138.46	15	\$127.03	100%	at stock turnover	\$0.10	207.64	226.17	Annual Energy Outlook, 2015

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Industrial Machinery	Interior Lighting	Linear Lighting	lamps	Existing	23.66	17	\$54.19	100%	at stock turnover	\$0.17	40.91	45.88	7th Power Plan
Industrial Machinery	Exterior Lighting	Screw-in	lamps	Existing	112.34	8	\$4.05	100%	at stock turnover	\$0.00	0.83	1.18	7th Power Plan
Industrial Machinery	Exterior Lighting	Area Lighting	lamps	Existing	2,000.67	15	\$45.69	100%	at stock turnover	-\$0.01	48.63	55.44	Annual Energy Outlook, 2015
Industrial Machinery	Exterior Lighting	Linear Lighting	lamps	Existing	162.83	17	\$54.19	100%	at stock turnover	\$0.02	11.66	13.07	7th Power Plan
Industrial Machinery	Motors	Pumps	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Industrial Machinery	Motors	Fans & Blowers	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Industrial Machinery	Motors	Compressed Air	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Industrial Machinery	Motors	Material Handling	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Industrial Machinery	Motors	Other Motors	1 unit	Existing	0.00	10	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	N/A
Industrial Machinery	Process	Process Heating	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Industrial Machinery	Process	Process Cooling	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Industrial Machinery	Process	Process Refrigeration	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Industrial Machinery	Process	Process Electrochemical	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Industrial Machinery	Process	Process Other	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Industrial Machinery	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Industrial Machinery	Cooling	Air-Cooled Chiller	1 kBTU/hr	New	15.09	20	\$26.36	3%	at stock turnover	\$0.17	2.70	3.10	Annual Energy Outlook, 2015
Industrial Machinery	Cooling	Water-Cooled Chiller	1 kBTU/hr	New	23.28	25	\$12.65	3%	at stock turnover	\$0.05	3.78	4.38	Annual Energy Outlook, 2015
Industrial Machinery	Cooling	RTU	1 kBTU/hr	New	2.68	15	\$6.75	12%	at stock turnover	\$0.28	2.13	2.47	Annual Energy Outlook, 2015
Industrial Machinery	Cooling	Air-Source Heat Pump	1 kBTU/hr	New	5.17	15	\$21.65	2%	at stock turnover	\$0.20	0.46	0.52	Annual Energy Outlook, 2015

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Industrial Machinery	Heating	Air-Source Heat Pump	1 kBTU/hr	New	6.83	15	\$21.65	2%	at stock turnover	\$0.20	0.61	0.69	Annual Energy Outlook, 2015
Industrial Machinery	Cooling	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Industrial Machinery	Heating	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Industrial Machinery	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Industrial Machinery	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	13%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Industrial Machinery	Ventilation	Ventilation	1000 CFM	New	1,668.11	20	\$1,219.71	100%	at stock turnover	\$0.07	17.74	19.89	AEG-BEST
Industrial Machinery	Interior Lighting	Screw-in	lamps	New	25.47	8	\$4.05	100%	at stock turnover	\$0.00	1.87	2.34	7th Power Plan
Industrial Machinery	Interior Lighting	High-Bay Fixtures	lamps	New	138.46	15	\$127.03	100%	at stock turnover	\$0.10	90.75	99.71	Annual Energy Outlook, 2015
Industrial Machinery	Interior Lighting	Linear Lighting	lamps	New	23.66	17	\$54.19	100%	at stock turnover	\$0.17	14.94	16.73	7th Power Plan
Industrial Machinery	Exterior Lighting	Screw-in	lamps	New	112.34	8	\$4.05	100%	at stock turnover	\$0.00	0.18	0.21	7th Power Plan
Industrial Machinery	Exterior Lighting	Area Lighting	lamps	New	2,000.67	15	\$45.69	100%	at stock turnover	-\$0.01	21.36	23.99	Annual Energy Outlook, 2015
Industrial Machinery	Exterior Lighting	Linear Lighting	lamps	New	162.83	17	\$54.19	100%	at stock turnover	\$0.02	4.24	4.75	7th Power Plan
Industrial Machinery	Motors	Pumps	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Industrial Machinery	Motors	Fans & Blowers	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Industrial Machinery	Motors	Compressed Air	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Industrial Machinery	Motors	Material Handling	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Industrial Machinery	Motors	Other Motors	1 unit	New	0.00	10	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	N/A
Industrial Machinery	Process	Process Heating	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Industrial Machinery	Process	Process Cooling	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Industrial Machinery	Process	Process Refrigeration	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Industrial Machinery	Process	Process Electrochemical	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Industrial Machinery	Process	Process Other	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Industrial Machinery	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Cooling	Air-Cooled Chiller	1 kBTU/hr	Existing	17.53	20	\$26.36	3%	at stock turnover	\$0.15	0.78	0.92	Annual Energy Outlook, 2015
Lumber Wood Products	Cooling	Water-Cooled Chiller	1 kBTU/hr	Existing	26.76	25	\$12.65	3%	at stock turnover	\$0.04	1.19	1.40	Annual Energy Outlook, 2015
Lumber Wood Products	Cooling	RTU	1 kBTU/hr	Existing	2.76	15	\$6.75	12%	at stock turnover	\$0.27	0.69	0.83	Annual Energy Outlook, 2015
Lumber Wood Products	Cooling	Air-Source Heat Pump	1 kBTU/hr	Existing	5.31	15	\$21.65	2%	at stock turnover	\$0.20	0.14	0.16	Annual Energy Outlook, 2015
Lumber Wood Products	Heating	Air-Source Heat Pump	1 kBTU/hr	Existing	7.12	15	\$21.65	2%	at stock turnover	\$0.20	0.19	0.22	Annual Energy Outlook, 2015
Lumber Wood Products	Cooling	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Lumber Wood Products	Heating	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Lumber Wood Products	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Lumber Wood Products	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	13%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Lumber Wood Products	Ventilation	Ventilation	1000 CFM	Existing	1,927.40	20	\$1,219.71	100%	at stock turnover	\$0.06	5.54	6.31	AEG-BEST
Lumber Wood Products	Interior Lighting	Screw-in	lamps	Existing	25.47	8	\$4.05	100%	at stock turnover	\$0.00	1.95	4.15	7th Power Plan
Lumber Wood Products	Interior Lighting	High-Bay Fixtures	lamps	Existing	138.46	15	\$127.03	100%	at stock turnover	\$0.10	65.99	71.88	Annual Energy Outlook, 2015
Lumber Wood Products	Interior Lighting	Linear Lighting	lamps	Existing	23.66	17	\$54.19	100%	at stock turnover	\$0.17	13.00	14.58	7th Power Plan
Lumber Wood Products	Exterior Lighting	Screw-in	lamps	Existing	112.34	8	\$4.05	100%	at stock turnover	\$0.00	0.26	0.38	7th Power Plan
Lumber Wood Products	Exterior Lighting	Area Lighting	lamps	Existing	2,000.67	15	\$45.69	100%	at stock turnover	-\$0.01	15.46	17.62	Annual Energy Outlook, 2015

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Lumber Wood Products	Exterior Lighting	Linear Lighting	lamps	Existing	162.83	17	\$54.19	100%	at stock turnover	\$0.02	3.71	4.15	7th Power Plan
Lumber Wood Products	Motors	Pumps	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Motors	Fans & Blowers	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Motors	Compressed Air	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Motors	Material Handling	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Motors	Other Motors	1 unit	Existing	0.00	10	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Process	Process Heating	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Process	Process Cooling	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Process	Process Refrigeration	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Process	Process Electrochemical	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Process	Process Other	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Cooling	Air-Cooled Chiller	1 kBTU/hr	New	15.09	20	\$26.36	3%	at stock turnover	\$0.17	0.36	0.42	Annual Energy Outlook, 2015
Lumber Wood Products	Cooling	Water-Cooled Chiller	1 kBTU/hr	New	23.28	25	\$12.65	3%	at stock turnover	\$0.05	0.50	0.58	Annual Energy Outlook, 2015
Lumber Wood Products	Cooling	RTU	1 kBTU/hr	New	2.68	15	\$6.75	12%	at stock turnover	\$0.28	0.29	0.33	Annual Energy Outlook, 2015
Lumber Wood Products	Cooling	Air-Source Heat Pump	1 kBTU/hr	New	5.17	15	\$21.65	2%	at stock turnover	\$0.20	0.06	0.07	Annual Energy Outlook, 2015
Lumber Wood Products	Heating	Air-Source Heat Pump	1 kBTU/hr	New	6.83	15	\$21.65	2%	at stock turnover	\$0.20	0.08	0.09	Annual Energy Outlook, 2015
Lumber Wood Products	Cooling	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Lumber Wood Products	Heating	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Lumber Wood Products	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Lumber Wood Products	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	13%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Lumber Wood Products	Ventilation	Ventilation	1000 CFM	New	1,668.11	20	\$1,219.71	100%	at stock turnover	\$0.07	2.38	2.67	AEG-BEST
Lumber Wood Products	Interior Lighting	Screw-in	lamps	New	25.47	8	\$4.05	100%	at stock turnover	\$0.00	0.60	0.75	7th Power Plan
Lumber Wood Products	Interior Lighting	High-Bay Fixtures	lamps	New	138.46	15	\$127.03	100%	at stock turnover	\$0.10	29.09	31.96	Annual Energy Outlook, 2015
Lumber Wood Products	Interior Lighting	Linear Lighting	lamps	New	23.66	17	\$54.19	100%	at stock turnover	\$0.17	4.82	5.39	7th Power Plan
Lumber Wood Products	Exterior Lighting	Screw-in	lamps	New	112.34	8	\$4.05	100%	at stock turnover	\$0.00	0.06	0.07	7th Power Plan
Lumber Wood Products	Exterior Lighting	Area Lighting	lamps	New	2,000.67	15	\$45.69	100%	at stock turnover	-\$0.01	6.85	7.69	Annual Energy Outlook, 2015
Lumber Wood Products	Exterior Lighting	Linear Lighting	lamps	New	162.83	17	\$54.19	100%	at stock turnover	\$0.02	1.37	1.53	7th Power Plan
Lumber Wood Products	Motors	Pumps	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Motors	Fans & Blowers	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Motors	Compressed Air	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Motors	Material Handling	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Motors	Other Motors	1 unit	New	0.00	10	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Process	Process Heating	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Process	Process Cooling	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Process	Process Refrigeration	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Process	Process Electrochemical	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Process	Process Other	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Lumber Wood Products	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Metal Mfg	Cooling	Air-Cooled Chiller	1 kBTU/hr	Existing	17.53	20	\$26.36	3%	at stock turnover	\$0.15	2.04	2.40	Annual Energy Outlook, 2015
Metal Mfg	Cooling	Water-Cooled Chiller	1 kBTU/hr	Existing	26.76	25	\$12.65	3%	at stock turnover	\$0.04	3.12	3.67	Annual Energy Outlook, 2015
Metal Mfg	Cooling	RTU	1 kBTU/hr	Existing	2.76	15	\$6.75	12%	at stock turnover	\$0.27	1.79	2.16	Annual Energy Outlook, 2015
Metal Mfg	Cooling	Air-Source Heat Pump	1 kBTU/hr	Existing	5.31	15	\$21.65	2%	at stock turnover	\$0.20	0.37	0.43	Annual Energy Outlook, 2015
Metal Mfg	Heating	Air-Source Heat Pump	1 kBTU/hr	Existing	7.12	15	\$21.65	2%	at stock turnover	\$0.20	0.50	0.57	Annual Energy Outlook, 2015
Metal Mfg	Cooling	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Metal Mfg	Heating	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Metal Mfg	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Metal Mfg	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	13%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Metal Mfg	Ventilation	Ventilation	1000 CFM	Existing	1,927.40	20	\$1,219.71	100%	at stock turnover	\$0.06	14.46	16.47	AEG-BEST
Metal Mfg	Interior Lighting	Screw-in	lamps	Existing	25.47	8	\$4.05	100%	at stock turnover	\$0.00	3.15	6.72	7th Power Plan
Metal Mfg	Interior Lighting	High-Bay Fixtures	lamps	Existing	138.46	15	\$127.03	100%	at stock turnover	\$0.10	106.92	116.46	Annual Energy Outlook, 2015
Metal Mfg	Interior Lighting	Linear Lighting	lamps	Existing	23.66	17	\$54.19	100%	at stock turnover	\$0.17	21.07	23.63	7th Power Plan
Metal Mfg	Exterior Lighting	Screw-in	lamps	Existing	112.34	8	\$4.05	100%	at stock turnover	\$0.00	0.43	0.61	7th Power Plan
Metal Mfg	Exterior Lighting	Area Lighting	lamps	Existing	2,000.67	15	\$45.69	100%	at stock turnover	-\$0.01	25.04	28.55	Annual Energy Outlook, 2015
Metal Mfg	Exterior Lighting	Linear Lighting	lamps	Existing	162.83	17	\$54.19	100%	at stock turnover	\$0.02	6.00	6.73	7th Power Plan
Metal Mfg	Motors	Pumps	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Metal Mfg	Motors	Fans & Blowers	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Metal Mfg	Motors	Compressed Air	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Metal Mfg	Motors	Material Handling	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Metal Mfg	Motors	Other Motors	1 unit	Existing	0.00	10	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	N/A
Metal Mfg	Process	Process Heating	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Metal Mfg	Process	Process Cooling	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Metal Mfg	Process	Process Refrigeration	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Metal Mfg	Process	Process Electrochemical	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Metal Mfg	Process	Process Other	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Metal Mfg	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Metal Mfg	Cooling	Air-Cooled Chiller	1 kBTU/hr	New	15.09	20	\$26.36	3%	at stock turnover	\$0.17	0.94	1.08	Annual Energy Outlook, 2015
Metal Mfg	Cooling	Water-Cooled Chiller	1 kBTU/hr	New	23.28	25	\$12.65	3%	at stock turnover	\$0.05	1.32	1.52	Annual Energy Outlook, 2015
Metal Mfg	Cooling	RTU	1 kBTU/hr	New	2.68	15	\$6.75	12%	at stock turnover	\$0.28	0.74	0.86	Annual Energy Outlook, 2015
Metal Mfg	Cooling	Air-Source Heat Pump	1 kBTU/hr	New	5.17	15	\$21.65	2%	at stock turnover	\$0.20	0.16	0.18	Annual Energy Outlook, 2015
Metal Mfg	Heating	Air-Source Heat Pump	1 kBTU/hr	New	6.83	15	\$21.65	2%	at stock turnover	\$0.20	0.21	0.24	Annual Energy Outlook, 2015
Metal Mfg	Cooling	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Metal Mfg	Heating	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Metal Mfg	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Metal Mfg	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	13%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Metal Mfg	Ventilation	Ventilation	1000 CFM	New	1,668.11	20	\$1,219.71	100%	at stock turnover	\$0.07	6.18	6.93	AEG-BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Metal Mfg	Interior Lighting	Screw-in	lamps	New	25.47	8	\$4.05	100%	at stock turnover	\$0.00	0.97	1.21	7th Power Plan
Metal Mfg	Interior Lighting	High-Bay Fixtures	lamps	New	138.46	15	\$127.03	100%	at stock turnover	\$0.10	46.74	51.35	Annual Energy Outlook, 2015
Metal Mfg	Interior Lighting	Linear Lighting	lamps	New	23.66	17	\$54.19	100%	at stock turnover	\$0.17	7.70	8.62	7th Power Plan
Metal Mfg	Exterior Lighting	Screw-in	lamps	New	112.34	8	\$4.05	100%	at stock turnover	\$0.00	0.09	0.11	7th Power Plan
Metal Mfg	Exterior Lighting	Area Lighting	lamps	New	2,000.67	15	\$45.69	100%	at stock turnover	-\$0.01	11.00	12.36	Annual Energy Outlook, 2015
Metal Mfg	Exterior Lighting	Linear Lighting	lamps	New	162.83	17	\$54.19	100%	at stock turnover	\$0.02	2.19	2.45	7th Power Plan
Metal Mfg	Motors	Pumps	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Metal Mfg	Motors	Fans & Blowers	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Metal Mfg	Motors	Compressed Air	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Metal Mfg	Motors	Material Handling	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Metal Mfg	Motors	Other Motors	1 unit	New	0.00	10	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	N/A
Metal Mfg	Process	Process Heating	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Metal Mfg	Process	Process Cooling	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Metal Mfg	Process	Process Refrigeration	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Metal Mfg	Process	Process Electrochemical	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Metal Mfg	Process	Process Other	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Metal Mfg	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Misc. Mfg	Cooling	Air-Cooled Chiller	1 kBTU/hr	Existing	17.53	20	\$26.36	3%	at stock turnover	\$0.15	46.51	54.71	Annual Energy Outlook, 2015
Misc. Mfg	Cooling	Water-Cooled Chiller	1 kBTU/hr	Existing	26.76	25	\$12.65	3%	at stock turnover	\$0.04	70.98	83.49	Annual Energy Outlook, 2015

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Misc. Mfg	Cooling	RTU	1 kBTU/hr	Existing	2.76	15	\$6.75	12%	at stock turnover	\$0.27	40.73	49.31	Annual Energy Outlook, 2015
Misc. Mfg	Cooling	Air-Source Heat Pump	1 kBTU/hr	Existing	5.31	15	\$21.65	2%	at stock turnover	\$0.20	8.46	9.75	Annual Energy Outlook, 2015
Misc. Mfg	Heating	Air-Source Heat Pump	1 kBTU/hr	Existing	7.12	15	\$21.65	2%	at stock turnover	\$0.20	11.33	13.05	Annual Energy Outlook, 2015
Misc. Mfg	Cooling	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Misc. Mfg	Heating	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Misc. Mfg	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Misc. Mfg	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	13%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Misc. Mfg	Ventilation	Ventilation	1000 CFM	Existing	1,927.40	20	\$1,219.71	100%	at stock turnover	\$0.06	329.44	375.12	AEG-BEST
Misc. Mfg	Interior Lighting	Screw-in	lamps	Existing	25.47	8	\$4.05	100%	at stock turnover	\$0.00	52.31	111.41	7th Power Plan
Misc. Mfg	Interior Lighting	High-Bay Fixtures	lamps	Existing	138.46	15	\$127.03	100%	at stock turnover	\$0.10	1,772.76	1,930.95	Annual Energy Outlook, 2015
Misc. Mfg	Interior Lighting	Linear Lighting	lamps	Existing	23.66	17	\$54.19	100%	at stock turnover	\$0.17	349.29	391.73	7th Power Plan
Misc. Mfg	Exterior Lighting	Screw-in	lamps	Existing	112.34	8	\$4.05	100%	at stock turnover	\$0.00	7.07	10.08	7th Power Plan
Misc. Mfg	Exterior Lighting	Area Lighting	lamps	Existing	2,000.67	15	\$45.69	100%	at stock turnover	-\$0.01	415.20	473.35	Annual Energy Outlook, 2015
Misc. Mfg	Exterior Lighting	Linear Lighting	lamps	Existing	162.83	17	\$54.19	100%	at stock turnover	\$0.02	99.55	111.60	7th Power Plan
Misc. Mfg	Motors	Pumps	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Misc. Mfg	Motors	Fans & Blowers	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Misc. Mfg	Motors	Compressed Air	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Misc. Mfg	Motors	Material Handling	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Misc. Mfg	Motors	Other Motors	1 unit	Existing	0.00	10	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Misc. Mfg	Process	Process Heating	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Misc. Mfg	Process	Process Cooling	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Misc. Mfg	Process	Process Refrigeration	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Misc. Mfg	Process	Process Electrochemical	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Misc. Mfg	Process	Process Other	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Misc. Mfg	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Misc. Mfg	Cooling	Air-Cooled Chiller	1 kBTU/hr	New	15.09	20	\$26.36	3%	at stock turnover	\$0.17	21.42	24.60	Annual Energy Outlook, 2015
Misc. Mfg	Cooling	Water-Cooled Chiller	1 kBTU/hr	New	23.28	25	\$12.65	3%	at stock turnover	\$0.05	29.97	34.71	Annual Energy Outlook, 2015
Misc. Mfg	Cooling	RTU	1 kBTU/hr	New	2.68	15	\$6.75	12%	at stock turnover	\$0.28	16.92	19.57	Annual Energy Outlook, 2015
Misc. Mfg	Cooling	Air-Source Heat Pump	1 kBTU/hr	New	5.17	15	\$21.65	2%	at stock turnover	\$0.20	3.68	4.12	Annual Energy Outlook, 2015
Misc. Mfg	Heating	Air-Source Heat Pump	1 kBTU/hr	New	6.83	15	\$21.65	2%	at stock turnover	\$0.20	4.86	5.44	Annual Energy Outlook, 2015
Misc. Mfg	Cooling	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Misc. Mfg	Heating	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Misc. Mfg	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	2%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Misc. Mfg	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	13%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Misc. Mfg	Ventilation	Ventilation	1000 CFM	New	1,668.11	20	\$1,219.71	100%	at stock turnover	\$0.07	140.67	157.73	AEG-BEST
Misc. Mfg	Interior Lighting	Screw-in	lamps	New	25.47	8	\$4.05	100%	at stock turnover	\$0.00	16.00	20.01	7th Power Plan
Misc. Mfg	Interior Lighting	High-Bay Fixtures	lamps	New	138.46	15	\$127.03	100%	at stock turnover	\$0.10	774.63	851.08	Annual Energy Outlook, 2015
Misc. Mfg	Interior Lighting	Linear Lighting	lamps	New	23.66	17	\$54.19	100%	at stock turnover	\$0.17	127.54	142.76	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Misc. Mfg	Exterior Lighting	Screw-in	lamps	New	112.34	8	\$4.05	100%	at stock turnover	\$0.00	1.50	1.75	7th Power Plan
Misc. Mfg	Exterior Lighting	Area Lighting	lamps	New	2,000.67	15	\$45.69	100%	at stock turnover	-\$0.01	182.34	204.81	Annual Energy Outlook, 2015
Misc. Mfg	Exterior Lighting	Linear Lighting	lamps	New	162.83	17	\$54.19	100%	at stock turnover	\$0.02	36.22	40.53	7th Power Plan
Misc. Mfg	Motors	Pumps	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Misc. Mfg	Motors	Fans & Blowers	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Misc. Mfg	Motors	Compressed Air	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Misc. Mfg	Motors	Material Handling	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Misc. Mfg	Motors	Other Motors	1 unit	New	0.00	10	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	N/A
Misc. Mfg	Process	Process Heating	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Misc. Mfg	Process	Process Cooling	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Misc. Mfg	Process	Process Refrigeration	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Misc. Mfg	Process	Process Electrochemical	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Misc. Mfg	Process	Process Other	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Misc. Mfg	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Agriculture	Cooling	Insulation - Ceiling	sqft	Existing	0.10	45	\$1.28	15%	25%	\$0.17	4.45	5.76	Building Energy Simulation Tool
Agriculture	Heating	Insulation - Ceiling	sqft	Existing	0.45	45	\$1.28	15%	25%	\$0.17	17.92	22.26	Building Energy Simulation Tool
Agriculture	Ventilation	Insulation - Ceiling	sqft	Existing	0.01	45	\$1.28	15%	25%	\$0.17	3.00	4.35	Building Energy Simulation Tool
Agriculture	Cooling	Insulation - Ducting	sqft	Existing	0.04	20	\$0.84	15%	25%	\$1.23	1.61	2.15	Building Energy Simulation Tool
Agriculture	Heating	Insulation - Ducting	sqft	Existing	0.02	20	\$0.84	15%	25%	\$1.23	0.74	0.93	Building Energy Simulation Tool

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Agriculture	Ventilation	Insulation - Ducting	sqft	Existing	0.00	20	\$0.84	15%	25%	\$1.23	0.12	0.18	Building Energy Simulation Tool
Agriculture	Cooling	Insulation - Wall Cavity	sqft	Existing	0.00	45	\$0.15	45%	50%	\$0.02	0.04	0.05	Building Energy Simulation Tool
Agriculture	Heating	Insulation - Wall Cavity	sqft	Existing	0.64	45	\$0.15	45%	50%	\$0.02	12.89	15.54	Building Energy Simulation Tool
Agriculture	Ventilation	Insulation - Wall Cavity	sqft	Existing	0.02	45	\$0.15	45%	50%	\$0.02	2.01	2.90	Building Energy Simulation Tool
Agriculture	Cooling	HVAC - Duct Repair and Sealing	sqft	Existing	0.01	18	\$0.00	15%	25%	\$0.00	0.59	0.75	Building Energy Simulation Tool
Agriculture	Heating	HVAC - Duct Repair and Sealing	sqft	Existing	0.04	18	\$0.00	15%	25%	\$0.00	1.82	2.19	Building Energy Simulation Tool
Agriculture	Ventilation	HVAC - Duct Repair and Sealing	sqft	Existing	0.00	18	\$0.00	15%	25%	\$0.00	0.28	0.41	Building Energy Simulation Tool
Agriculture	Cooling	Chiller - Chilled Water Reset	sqft	Existing	0.04	10	\$0.01	15%	45%	\$0.03	1.43	2.02	AEG-BEST
Agriculture	Cooling	Chiller - Chilled Water Variable-Flow System	sqft	Existing	0.21	15	\$0.50	15%	60%	\$0.24	11.34	16.55	AEG-BEST
Agriculture	Cooling	Chiller - Variable Speed Fans	sqft	Existing	0.08	15	\$0.03	15%	75%	\$0.04	5.83	8.22	New Jersey TRM
Agriculture	Cooling	HVAC - Economizer	sqft	Existing	0.10	10	\$0.25	18%	30%	\$0.30	5.64	8.26	AEG-BEST
Agriculture	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.25	15%	35%	\$11.12	0.99	1.68	7th Power Plan
Agriculture	Cooling	Destratification Fans (HVLS)	sqft	Existing	0.13	15	\$0.63	15%	50%	\$0.05	21.96	30.92	AEG Research
Agriculture	Heating	Destratification Fans (HVLS)	sqft	Existing	1.16	15	\$0.63	15%	50%	\$0.05	177.12	231.48	AEG Research
Agriculture	Cooling	RTU - Maintenance	sqft	Existing	0.07	3	\$0.07	15%	75%	\$0.32	11.81	18.02	AEG Research
Agriculture	Cooling	Thermostat - WiFi/Interactive	sqft	Existing	0.22	5	\$0.66	5%	15%	\$0.11	9.50	12.49	7th Power Plan
Agriculture	Heating	Thermostat - WiFi/Interactive	sqft	Existing	0.99	5	\$0.66	5%	15%	\$0.11	39.41	49.16	7th Power Plan
Agriculture	Ventilation	Thermostat - WiFi/Interactive	sqft	Existing	0.03	5	\$0.66	5%	15%	\$0.11	6.60	9.60	7th Power Plan
Agriculture	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.18	15	\$0.35	3%	17%	\$0.17	42.70	64.17	7th Power Plan
Agriculture	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.25	15	\$0.58	3%	17%	\$0.20	58.21	88.87	7th Power Plan
Agriculture	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	Existing	0.02	15	\$0.00	1%	2%	\$0.01	0.43	0.83	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Agriculture	Interior Lighting	Interior Lighting - Timeclocks and Timers	sqft	Existing	0.00	8	\$0.00	7%	7%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Agriculture	Interior Lighting	Interior Lighting - Skylights	sqft	Existing	0.00	15	\$1.01	15%	23%	\$0.00	0.00	0.00	AEG Research
Agriculture	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	sqft	Existing	0.03	16	\$1.81	5%	40%	\$5.03	13.45	27.03	7th Power Plan
Agriculture	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	Existing	0.03	11	\$0.00	15%	50%	\$0.01	14.38	26.87	Illinois TRM
Agriculture	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	sqft	Existing	0.04	8	\$0.03	15%	25%	\$0.10	16.81	33.40	7th Power Plan
Agriculture	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	Existing	0.02	8	\$0.02	33%	60%	\$0.11	23.34	47.77	Pacific Gas and Electric Research
Agriculture	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	Existing	0.03	7	\$1.19	15%	30%	\$5.85	14.55	31.61	AEG Research
Agriculture	Process	Process - Conductivity Controls	employee	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Agriculture	Process	Process - Timers and Controls	employee	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Agriculture	Motors	Process - Timers and Controls	employee	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Agriculture	Process	Refrigeration - Floating Head Pressure	employee	Existing	150.97	15	\$177.83	20%	50%	\$0.13	136.38	178.48	RTF Workbook
Agriculture	Process	Refrigeration - System Optimization	employee	Existing	244.41	15	\$125.22	20%	50%	\$0.06	221.59	287.41	AEG Research
Agriculture	Motors	Pumping System - Equipment Upgrade	employee	Existing	87.55	10	\$15.45	9%	38%	\$0.06	75.02	100.41	7th Power Plan
Agriculture	Motors	Pumping System - System Optimization	employee	Existing	65.09	12	\$23.55	9%	38%	-\$0.03	54.12	70.53	UNIDO Study on Industrial Energy Efficiency
Agriculture	Motors	Pumping System - Variable Speed Drive	employee	Existing	64.56	10	\$24.50	9%	38%	\$0.05	53.53	70.14	UNIDO Study on Industrial Energy Efficiency
Agriculture	Motors	Fan System - Equipment Upgrade	employee	Existing	305.82	10	\$36.30	9%	38%	\$0.05	257.46	327.97	UNIDO Study on Industrial Energy Efficiency
Agriculture	Motors	Fan System - Flow Optimization	employee	Existing	358.22	10	\$60.05	9%	38%	\$0.02	300.37	385.47	UNIDO Study on Industrial Energy Efficiency
Agriculture	Motors	Fan System - Variable Speed Drive	employee	Existing	525.82	10	\$302.19	9%	38%	\$0.07	432.13	575.41	UNIDO Study on Industrial Energy Efficiency
Agriculture	Motors	Compressed Air - Equipment Upgrade	employee	Existing	209.91	10	\$18.31	17%	50%	\$0.04	212.70	275.87	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Agriculture	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	Existing	0.00	15	\$0.00	16%	38%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Agriculture	Motors	Compressed Air - Refrigerated Cycling Dryers	employee	Existing	0.00	10	\$0.00	16%	30%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Agriculture	Motors	Compressed Air - System Controls	employee	Existing	45.82	10	\$13.09	9%	38%	\$0.00	39.09	52.85	UNIDO Study on Industrial Energy Efficiency
Agriculture	Motors	Compressed Air - Leak Management Program	employee	Existing	118.99	10	\$13.16	18%	75%	\$0.05	206.20	269.06	7th Power Plan
Agriculture	Motors	Compressed Air - Variable Speed Drive	employee	Existing	84.11	15	\$80.26	26%	45%	\$0.10	47.41	65.40	UNIDO Study on Industrial Energy Efficiency
Agriculture	Motors	Compressed Air - Low Pressure-Drop Filters	employee	Existing	2.80	10	\$1.24	17%	50%	\$0.06	2.77	3.82	Illinois TRM
Agriculture	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	Existing	17.23	10	\$4.01	17%	50%	\$0.03	17.17	23.15	UNIDO Study on Industrial Energy Efficiency
Agriculture	Motors	Compressed Air - Outside Air Intake	employee	Existing	0.00	20	\$0.00	17%	50%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Agriculture	Motors	Compressed Air - Receiver Capacity Addition	employee	Existing	17.09	15	\$11.04	17%	50%	\$0.07	16.98	23.05	UNIDO Study on Industrial Energy Efficiency
Agriculture	Motors	Material Handling - Variable Speed Drive	employee	Existing	615.83	10	\$265.80	25%	45%	\$0.06	358.00	469.87	7th Power Plan
Agriculture	Motors	Motors - Green Rewind (<100 HP)	employee	Existing	15.43	10	\$8.11	10%	50%	\$0.07	71.28	94.71	7th Power Plan
Agriculture	Motors	Motors - Green Rewind (100 HP+)	employee	Existing	8.73	10	\$2.88	6%	25%	\$0.04	19.31	25.28	7th Power Plan
Agriculture	Motors	Switch from Belt Drive to Direct Drive	employee	Existing	132.63	12	\$35.61	16%	25%	\$0.03	147.44	191.22	2015-mdu-irp-report---volume-iii.pdf
Agriculture	Motors	Motors - Synchronous Belts	employee	Existing	35.04	10	\$10.71	16%	36%	\$0.04	83.66	113.24	7th Power Plan
Agriculture	Miscellaneous	Agriculture - Engine Block Timer	employee	Existing	487.87	3	\$7.21	15%	33%	\$0.01	0.00	453.64	Vermont TRM
Agriculture	Motors	Agriculture - Live Stock Waterer	employee	Existing	207.70	10	\$136.06	15%	17%	\$0.08	11.89	16.05	Ontario Power TRM
Agriculture	Process	Dairy - Milk Precoolers	employee	Existing	1,007.01	15	\$565.86	15%	15%	\$0.06	11.92	15.14	Ontario Power TRM
Agriculture	Process	Clean Room: Change Filter Strategy	employee	Existing	15.59	15	\$0.14	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Agriculture	Process	Clean Room: Chiller Optimize	employee	Existing	301.91	15	\$33.51	0%	0%	\$0.01	0.00	0.00	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Agriculture	Process	Clean Room: Clean Room HVAC	employee	Existing	183.31	15	\$40.45	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Agriculture	Process	Elec Chip Fab: Solidstate Chiller	employee	Existing	181.16	15	\$127.04	0%	0%	-\$0.08	0.00	0.00	7th Power Plan
Agriculture	Process	Elec Chip Fab: Eliminate Exhaust	employee	Existing	1.95	15	\$0.50	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Agriculture	Process	Elec Chip Fab: Exhaust Injector	employee	Existing	3.85	15	\$2.39	0%	0%	-\$0.11	0.00	0.00	7th Power Plan
Agriculture	Process	Elec Chip Fab: Reduce Gas Pressure	employee	Existing	3.90	15	\$0.05	0%	0%	-\$0.02	0.00	0.00	7th Power Plan
Agriculture	Motors	Panel: Hydraulic Press	employee	Existing	928.29	10	\$265.64	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Agriculture	Motors	Wood: Replace Pneumatic Conveyor	employee	Existing	1,006.70	10	\$19.89	0%	0%	-\$0.07	0.00	0.00	7th Power Plan
Agriculture	Process	Metal: New Arc Furnace	employee	Existing	544.68	10	\$68.54	0%	0%	-\$2.50	0.00	0.00	7th Power Plan
Agriculture	Process	Paper: Premium Control Large Material	employee	Existing	201.23	10	\$122.95	0%	0%	\$0.08	0.00	0.00	7th Power Plan
Agriculture	Process	Paper: Efficient Pulp Screen	employee	Existing	164.23	10	\$40.50	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Agriculture	Process	Kraft: Effluent Treatment System	employee	Existing	164.23	10	\$16.60	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Agriculture	Motors	Kraft: Efficient Agitator	employee	Existing	1,708.38	10	\$198.23	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Agriculture	Process	Mech Pulp: Premium Process	employee	Existing	1.82	5	\$0.28	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Agriculture	Motors	Mech Pulp: Refiner Plate Improvement	employee	Existing	14.19	1	\$0.76	0%	0%	\$0.05	0.00	0.00	7th Power Plan
Agriculture	Cooling	Transformer - High Efficiency	employee	Existing	17.55	10	\$44.43	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Agriculture	Heating	Transformer - High Efficiency	employee	Existing	78.48	10	\$44.43	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Agriculture	Ventilation	Transformer - High Efficiency	employee	Existing	2.23	10	\$44.43	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Agriculture	Interior Lighting	Transformer - High Efficiency	employee	Existing	10.20	10	\$44.43	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Agriculture	Exterior Lighting	Transformer - High Efficiency	employee	Existing	2.11	10	\$44.43	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Agriculture	Motors	Transformer - High Efficiency	employee	Existing	100.94	10	\$44.43	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Agriculture	Process	Transformer - High Efficiency	employee	Existing	80.59	10	\$44.43	15%	15%	\$0.02	0.00	0.00	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Agriculture	Miscellaneous	Transformer - High Efficiency	employee	Existing	16.84	10	\$44.43	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Agriculture	Cooling	Strategic Energy Management	employee	Existing	48.21	3	\$272.87	0%	5%	\$0.10	1.16	1.56	AEG Research
Agriculture	Heating	Strategic Energy Management	employee	Existing	224.64	3	\$272.87	0%	5%	\$0.10	5.10	6.43	AEG Research
Agriculture	Ventilation	Strategic Energy Management	employee	Existing	6.40	3	\$272.87	0%	5%	\$0.10	0.85	1.26	AEG Research
Agriculture	Interior Lighting	Strategic Energy Management	employee	Existing	29.03	3	\$272.87	0%	5%	\$0.10	3.24	5.47	AEG Research
Agriculture	Exterior Lighting	Strategic Energy Management	employee	Existing	6.05	3	\$272.87	0%	5%	\$0.10	0.67	1.17	AEG Research
Agriculture	Motors	Strategic Energy Management	employee	Existing	288.94	3	\$272.87	0%	5%	\$0.10	38.84	49.77	AEG Research
Agriculture	Process	Strategic Energy Management	employee	Existing	230.63	3	\$272.87	0%	5%	\$0.10	31.98	39.19	AEG Research
Agriculture	Miscellaneous	Strategic Energy Management	employee	Existing	48.17	3	\$272.87	0%	5%	\$0.10	8.55	8.14	AEG Research
Agriculture	Interior Lighting	Commissioning	employee	Existing	33.47	3	\$386.95	0%	0%	\$0.18	0.00	0.00	AEG Research
Agriculture	Exterior Lighting	Commissioning	employee	Existing	6.98	3	\$386.95	0%	0%	\$0.18	0.00	0.00	AEG Research
Agriculture	Motors	Commissioning	employee	Existing	333.00	3	\$386.95	0%	0%	\$0.18	0.00	0.00	AEG Research
Agriculture	Process	Commissioning	employee	Existing	265.80	3	\$386.95	0%	0%	\$0.18	0.00	0.00	AEG Research
Agriculture	Miscellaneous	Commissioning	employee	Existing	55.51	3	\$386.95	0%	0%	\$0.18	0.00	0.00	AEG Research
Agriculture	Interior Lighting	Retrocommissioning	employee	Existing	33.99	3	\$245.64	5%	39%	\$0.11	26.06	43.40	AEG Research
Agriculture	Exterior Lighting	Retrocommissioning	employee	Existing	7.04	3	\$245.64	5%	39%	\$0.11	5.31	9.24	AEG Research
Agriculture	Motors	Retrocommissioning	employee	Existing	336.47	3	\$245.64	5%	39%	\$0.11	310.05	393.35	AEG Research
Agriculture	Process	Retrocommissioning	employee	Existing	268.63	3	\$245.64	5%	39%	\$0.11	255.33	309.81	AEG Research
Agriculture	Miscellaneous	Retrocommissioning	employee	Existing	56.15	3	\$245.64	5%	39%	\$0.11	68.29	64.41	AEG Research
Agriculture	Motors	Municipal Sewage Treatment	employee	Existing	11.43	12	\$7.77	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Agriculture	Motors	Municipal Water Supply Treatment	employee	Existing	0.00	12	\$0.00	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Agriculture	Cooling	Insulation - Ceiling	sqft	New	0.09	45	\$1.28	15%	25%	\$0.18	0.67	0.76	Building Energy Simulation Tool

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Agriculture	Heating	Insulation - Ceiling	sqft	New	0.44	45	\$1.28	15%	25%	\$0.18	2.81	3.14	Building Energy Simulation Tool
Agriculture	Ventilation	Insulation - Ceiling	sqft	New	0.01	45	\$1.28	15%	25%	\$0.18	0.39	0.48	Building Energy Simulation Tool
Agriculture	Cooling	Insulation - Ducting	sqft	New	0.04	20	\$0.84	15%	25%	\$1.32	0.26	0.29	Building Energy Simulation Tool
Agriculture	Heating	Insulation - Ducting	sqft	New	0.02	20	\$0.84	15%	25%	\$1.32	0.12	0.13	Building Energy Simulation Tool
Agriculture	Ventilation	Insulation - Ducting	sqft	New	0.00	20	\$0.84	15%	25%	\$1.32	0.02	0.02	Building Energy Simulation Tool
Agriculture	Cooling	Insulation - Wall Cavity	sqft	New	0.00	45	\$0.15	45%	50%	\$0.02	0.01	0.01	Building Energy Simulation Tool
Agriculture	Heating	Insulation - Wall Cavity	sqft	New	0.59	45	\$0.15	45%	50%	\$0.02	1.90	2.13	Building Energy Simulation Tool
Agriculture	Ventilation	Insulation - Wall Cavity	sqft	New	0.01	45	\$0.15	45%	50%	\$0.02	0.26	0.32	Building Energy Simulation Tool
Agriculture	Cooling	HVAC - Duct Repair and Sealing	sqft	New	0.01	18	\$0.00	15%	25%	\$0.00	0.08	0.09	Building Energy Simulation Tool
Agriculture	Heating	HVAC - Duct Repair and Sealing	sqft	New	0.04	18	\$0.00	15%	25%	\$0.00	0.26	0.29	Building Energy Simulation Tool
Agriculture	Ventilation	HVAC - Duct Repair and Sealing	sqft	New	0.00	18	\$0.00	15%	25%	\$0.00	0.04	0.04	Building Energy Simulation Tool
Agriculture	Cooling	Chiller - Chilled Water Reset	sqft	New	0.03	10	\$0.01	15%	45%	\$0.04	0.07	0.09	AEG-BEST
Agriculture	Cooling	Chiller - Chilled Water Variable-Flow System	sqft	New	0.17	15	\$0.50	15%	60%	\$0.29	0.71	0.91	AEG-BEST
Agriculture	Cooling	Chiller - Variable Speed Fans	sqft	New	0.06	15	\$0.03	15%	75%	\$0.05	0.35	0.45	New Jersey TRM
Agriculture	Cooling	HVAC - Economizer	sqft	New	0.09	10	\$0.25	18%	30%	\$0.33	0.29	0.38	AEG-BEST
Agriculture	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.25	15%	35%	\$12.99	0.06	0.09	7th Power Plan
Agriculture	Cooling	Destratification Fans (HVLS)	sqft	New	0.12	15	\$0.63	15%	50%	\$0.06	1.47	1.88	AEG Research
Agriculture	Heating	Destratification Fans (HVLS)	sqft	New	1.09	15	\$0.63	15%	50%	\$0.06	11.95	14.85	AEG Research
Agriculture	Cooling	RTU - Maintenance	sqft	New	0.06	3	\$0.07	15%	75%	\$0.33	0.13	0.19	AEG Research
Agriculture	Cooling	Thermostat - WiFi/Interactive	sqft	New	0.21	5	\$0.66	5%	15%	\$0.12	0.20	0.26	7th Power Plan
Agriculture	Heating	Thermostat - WiFi/Interactive	sqft	New	0.97	5	\$0.66	5%	15%	\$0.12	0.83	1.06	7th Power Plan

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Agriculture	Ventilation	Thermostat - WiFi/Interactive	sqft	New	0.02	5	\$0.66	5%	15%	\$0.12	0.11	0.18	7th Power Plan
Agriculture	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.15	15	\$0.35	22%	41%	\$0.17	17.57	24.00	7th Power Plan
Agriculture	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.20	15	\$0.58	22%	41%	\$0.20	23.80	32.73	7th Power Plan
Agriculture	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	New	0.02	15	\$0.00	1%	2%	\$0.01	0.02	0.04	7th Power Plan
Agriculture	Interior Lighting	Interior Lighting - Timeclocks and Timers	sqft	New	0.00	8	\$0.00	7%	7%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Agriculture	Interior Lighting	Interior Lighting - Skylights	sqft	New	0.00	15	\$1.01	18%	24%	\$0.00	0.00	0.00	AEG Research
Agriculture	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	sqft	New	0.02	16	\$1.81	5%	40%	\$5.13	0.92	1.49	7th Power Plan
Agriculture	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	New	0.02	11	\$0.00	15%	50%	\$0.01	0.77	1.28	Illinois TRM
Agriculture	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	sqft	New	0.03	8	\$0.03	15%	25%	\$0.11	0.66	1.18	7th Power Plan
Agriculture	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	New	0.02	8	\$0.02	44%	60%	\$0.11	0.56	1.01	Pacific Gas and Electric Research
Agriculture	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	New	0.02	7	\$1.19	15%	30%	\$6.12	0.57	1.03	AEG Research
Agriculture	Process	Process - Conductivity Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Agriculture	Process	Process - Timers and Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Agriculture	Motors	Process - Timers and Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Agriculture	Process	Refrigeration - Floating Head Pressure	employee	New	152.09	15	\$125.67	20%	50%	\$0.09	9.86	12.22	RTF Workbook
Agriculture	Process	Refrigeration - System Optimization	employee	New	244.41	15	\$43.95	20%	50%	\$0.02	15.83	19.63	AEG Research
Agriculture	Motors	Pumping System - Equipment Upgrade	employee	New	89.45	10	\$15.45	9%	38%	\$0.06	4.22	5.36	7th Power Plan
Agriculture	Motors	Pumping System - System Optimization	employee	New	66.85	12	\$23.55	9%	38%	-\$0.03	5.22	6.37	UNIDO Study on Industrial Energy Efficiency
Agriculture	Motors	Pumping System - Variable Speed Drive	employee	New	66.65	10	\$24.50	9%	38%	\$0.05	4.79	5.88	UNIDO Study on Industrial Energy Efficiency

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Agriculture	Motors	Fan System - Equipment Upgrade	employee	New	309.04	10	\$36.30	9%	38%	\$0.05	22.15	27.27	UNIDO Study on Industrial Energy Efficiency
Agriculture	Motors	Fan System - Flow Optimization	employee	New	363.83	10	\$60.05	9%	38%	\$0.02	26.10	32.10	UNIDO Study on Industrial Energy Efficiency
Agriculture	Motors	Fan System - Variable Speed Drive	employee	New	548.92	10	\$302.19	9%	38%	\$0.07	39.56	48.42	UNIDO Study on Industrial Energy Efficiency
Agriculture	Motors	Compressed Air - Equipment Upgrade	employee	New	209.91	10	\$18.31	17%	50%	\$0.04	11.50	14.64	7th Power Plan
Agriculture	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	New	0.00	15	\$0.00	16%	38%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Agriculture	Motors	Compressed Air - Refrigerated Cycling Dryers	employee	New	0.00	10	\$0.00	16%	30%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Agriculture	Motors	Compressed Air - System Controls	employee	New	47.12	10	\$13.09	9%	38%	\$0.00	2.22	2.82	UNIDO Study on Industrial Energy Efficiency
Agriculture	Motors	Compressed Air - Leak Management Program	employee	New	119.62	10	\$13.16	18%	75%	\$0.05	11.24	14.30	7th Power Plan
Agriculture	Motors	Compressed Air - Variable Speed Drive	employee	New	87.57	15	\$80.26	26%	45%	\$0.10	3.65	4.50	UNIDO Study on Industrial Energy Efficiency
Agriculture	Motors	Compressed Air - Low Pressure-Drop Filters	employee	New	2.92	10	\$1.24	17%	50%	\$0.06	0.16	0.20	Illinois TRM
Agriculture	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	New	17.69	10	\$4.01	17%	50%	\$0.03	0.97	1.24	UNIDO Study on Industrial Energy Efficiency
Agriculture	Motors	Compressed Air - Outside Air Intake	employee	New	0.00	20	\$0.00	17%	50%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Agriculture	Motors	Compressed Air - Receiver Capacity Addition	employee	New	17.63	15	\$11.04	17%	50%	\$0.07	1.28	1.59	UNIDO Study on Industrial Energy Efficiency
Agriculture	Motors	Material Handling - Variable Speed Drive	employee	New	636.45	10	\$265.80	25%	45%	\$0.06	32.14	39.40	7th Power Plan
Agriculture	Motors	Motors - Green Rewind (<100 HP)	employee	New	16.09	10	\$8.11	10%	50%	\$0.07	6.51	7.97	7th Power Plan
Agriculture	Motors	Motors - Green Rewind (100 HP+)	employee	New	9.01	10	\$2.88	6%	25%	\$0.04	1.73	2.12	7th Power Plan
Agriculture	Motors	Switch from Belt Drive to Direct Drive	employee	New	135.78	12	\$35.61	16%	25%	\$0.03	14.14	17.26	2015-mdu-irp-report---volume-iii.pdf
Agriculture	Motors	Motors - Synchronous Belts	employee	New	36.07	10	\$10.71	16%	36%	\$0.04	4.77	6.05	7th Power Plan
Agriculture	Miscellaneous	Agriculture - Engine Block Timer	employee	New	487.87	3	\$7.21	15%	33%	\$0.01	0.00	9.19	Vermont TRM

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Agriculture	Motors	Agriculture - Live Stock Waterer	employee	New	218.78	10	\$136.06	15%	17%	\$0.08	1.11	1.35	Ontario Power TRM
Agriculture	Process	Dairy - Milk Precoolers	employee	New	1,014.21	15	\$565.86	15%	15%	\$0.06	1.17	1.43	Ontario Power TRM
Agriculture	Process	Clean Room: Change Filter Strategy	employee	New	15.59	15	\$0.14	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Agriculture	Process	Clean Room: Chiller Optimize	employee	New	301.91	15	\$33.51	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Agriculture	Process	Clean Room: Clean Room HVAC	employee	New	182.56	15	\$40.45	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Agriculture	Process	Elec Chip Fab: Solidstate Chiller	employee	New	182.51	15	\$127.04	0%	0%	-\$0.08	0.00	0.00	7th Power Plan
Agriculture	Process	Elec Chip Fab: Eliminate Exhaust	employee	New	1.94	15	\$0.50	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Agriculture	Process	Elec Chip Fab: Exhaust Injector	employee	New	3.88	15	\$2.39	0%	0%	-\$0.11	0.00	0.00	7th Power Plan
Agriculture	Process	Elec Chip Fab: Reduce Gas Pressure	employee	New	3.90	15	\$0.05	0%	0%	-\$0.02	0.00	0.00	7th Power Plan
Agriculture	Motors	Panel: Hydraulic Press	employee	New	954.50	10	\$265.64	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Agriculture	Motors	Wood: Replace Pneumatic Conveyor	employee	New	1,006.70	10	\$19.89	0%	0%	-\$0.07	0.00	0.00	7th Power Plan
Agriculture	Process	Metal: New Arc Furnace	employee	New	542.45	10	\$68.54	0%	0%	-\$2.50	0.00	0.00	7th Power Plan
Agriculture	Process	Paper: Premium Control Large Material	employee	New	203.63	10	\$122.95	0%	0%	\$0.08	0.00	0.00	7th Power Plan
Agriculture	Process	Paper: Efficient Pulp Screen	employee	New	163.56	10	\$40.50	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Agriculture	Process	Kraft: Effluent Treatment System	employee	New	163.56	10	\$16.60	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Agriculture	Motors	Kraft: Efficient Agitator	employee	New	1,719.76	10	\$198.23	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Agriculture	Process	Mech Pulp: Premium Process	employee	New	1.83	5	\$0.28	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Agriculture	Motors	Mech Pulp: Refiner Plate Improvement	employee	New	14.95	1	\$0.76	0%	0%	\$0.05	0.00	0.00	7th Power Plan
Agriculture	Cooling	Transformer - High Efficiency	employee	New	15.87	10	\$43.31	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Agriculture	Heating	Transformer - High Efficiency	employee	New	76.21	10	\$43.31	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Agriculture	Ventilation	Transformer - High Efficiency	employee	New	1.42	10	\$43.31	15%	15%	\$0.02	0.00	0.00	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Agriculture	Interior Lighting	Transformer - High Efficiency	employee	New	7.93	10	\$43.31	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Agriculture	Exterior Lighting	Transformer - High Efficiency	employee	New	1.69	10	\$43.31	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Agriculture	Motors	Transformer - High Efficiency	employee	New	106.35	10	\$43.31	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Agriculture	Process	Transformer - High Efficiency	employee	New	81.55	10	\$43.31	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Agriculture	Miscellaneous	Transformer - High Efficiency	employee	New	16.92	10	\$43.31	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Agriculture	Cooling	Strategic Energy Management	employee	New	45.20	3	\$265.97	0%	5%	\$0.10	0.01	0.01	AEG Research
Agriculture	Heating	Strategic Energy Management	employee	New	219.54	3	\$265.97	0%	5%	\$0.10	0.04	0.05	AEG Research
Agriculture	Ventilation	Strategic Energy Management	employee	New	4.08	3	\$265.97	0%	5%	\$0.10	0.01	0.01	AEG Research
Agriculture	Interior Lighting	Strategic Energy Management	employee	New	22.91	3	\$265.97	0%	5%	\$0.10	0.02	0.04	AEG Research
Agriculture	Exterior Lighting	Strategic Energy Management	employee	New	4.89	3	\$265.97	0%	5%	\$0.10	0.00	0.01	AEG Research
Agriculture	Motors	Strategic Energy Management	employee	New	307.24	3	\$265.97	0%	5%	\$0.10	0.32	0.43	AEG Research
Agriculture	Process	Strategic Energy Management	employee	New	235.59	3	\$265.97	0%	5%	\$0.10	0.24	0.32	AEG Research
Agriculture	Miscellaneous	Strategic Energy Management	employee	New	48.88	3	\$265.97	0%	5%	\$0.10	0.06	0.06	AEG Research
Agriculture	Interior Lighting	Commissioning	employee	New	26.36	3	\$385.37	5%	39%	\$0.18	0.17	0.35	AEG Research
Agriculture	Exterior Lighting	Commissioning	employee	New	5.64	3	\$385.37	5%	39%	\$0.18	0.04	0.08	AEG Research
Agriculture	Motors	Commissioning	employee	New	354.44	3	\$385.37	5%	39%	\$0.18	2.52	3.37	AEG Research
Agriculture	Process	Commissioning	employee	New	271.77	3	\$385.37	5%	39%	\$0.18	1.92	2.55	AEG Research
Agriculture	Miscellaneous	Commissioning	employee	New	56.39	3	\$385.37	5%	39%	\$0.18	0.51	0.45	AEG Research
Agriculture	Interior Lighting	Retrocommissioning	employee	New	26.43	3	\$244.64	0%	0%	\$0.11	0.00	0.00	AEG Research
Agriculture	Exterior Lighting	Retrocommissioning	employee	New	5.64	3	\$244.64	0%	0%	\$0.11	0.00	0.00	AEG Research
Agriculture	Motors	Retrocommissioning	employee	New	354.51	3	\$244.64	0%	0%	\$0.11	0.00	0.00	AEG Research

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Agriculture	Process	Retrocommissioning	employee	New	271.83	3	\$244.64	0%	0%	\$0.11	0.00	0.00	AEG Research
Agriculture	Miscellaneous	Retrocommissioning	employee	New	56.40	3	\$244.64	0%	0%	\$0.11	0.00	0.00	AEG Research
Agriculture	Motors	Municipal Sewage Treatment	employee	New	11.92	12	\$7.77	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Agriculture	Motors	Municipal Water Supply Treatment	employee	New	0.00	12	\$0.00	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Mining and Extraction	Cooling	Insulation - Ceiling	sqft	Existing	0.10	45	\$1.28	15%	25%	\$0.17	0.09	0.12	Building Energy Simulation Tool
Mining and Extraction	Heating	Insulation - Ceiling	sqft	Existing	0.45	45	\$1.28	15%	25%	\$0.17	0.37	0.46	Building Energy Simulation Tool
Mining and Extraction	Ventilation	Insulation - Ceiling	sqft	Existing	0.01	45	\$1.28	15%	25%	\$0.17	0.06	0.09	Building Energy Simulation Tool
Mining and Extraction	Cooling	Insulation - Ducting	sqft	Existing	0.04	20	\$0.84	15%	25%	\$1.23	0.03	0.04	Building Energy Simulation Tool
Mining and Extraction	Heating	Insulation - Ducting	sqft	Existing	0.02	20	\$0.84	15%	25%	\$1.23	0.02	0.02	Building Energy Simulation Tool
Mining and Extraction	Ventilation	Insulation - Ducting	sqft	Existing	0.00	20	\$0.84	15%	25%	\$1.23	0.00	0.00	Building Energy Simulation Tool
Mining and Extraction	Cooling	Insulation - Wall Cavity	sqft	Existing	0.00	45	\$0.15	45%	50%	\$0.02	0.00	0.00	Building Energy Simulation Tool
Mining and Extraction	Heating	Insulation - Wall Cavity	sqft	Existing	0.64	45	\$0.15	45%	50%	\$0.02	0.27	0.32	Building Energy Simulation Tool
Mining and Extraction	Ventilation	Insulation - Wall Cavity	sqft	Existing	0.02	45	\$0.15	45%	50%	\$0.02	0.04	0.06	Building Energy Simulation Tool
Mining and Extraction	Cooling	HVAC - Duct Repair and Sealing	sqft	Existing	0.01	18	\$0.00	15%	25%	\$0.00	0.01	0.02	Building Energy Simulation Tool
Mining and Extraction	Heating	HVAC - Duct Repair and Sealing	sqft	Existing	0.04	18	\$0.00	15%	25%	\$0.00	0.04	0.05	Building Energy Simulation Tool
Mining and Extraction	Ventilation	HVAC - Duct Repair and Sealing	sqft	Existing	0.00	18	\$0.00	15%	25%	\$0.00	0.01	0.01	Building Energy Simulation Tool
Mining and Extraction	Cooling	Chiller - Chilled Water Reset	sqft	Existing	0.04	10	\$0.01	15%	45%	\$0.03	0.03	0.04	AEG-BEST
Mining and Extraction	Cooling	Chiller - Chilled Water Variable-Flow System	sqft	Existing	0.21	15	\$0.50	15%	60%	\$0.24	0.24	0.34	AEG-BEST
Mining and Extraction	Cooling	Chiller - Variable Speed Fans	sqft	Existing	0.08	15	\$0.03	15%	75%	\$0.04	0.12	0.17	New Jersey TRM
Mining and Extraction	Cooling	HVAC - Economizer	sqft	Existing	0.10	10	\$0.25	18%	30%	\$0.30	0.12	0.17	AEG-BEST

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Mining and Extraction	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.25	15%	35%	\$11.12	0.02	0.03	7th Power Plan
Mining and Extraction	Cooling	Destratification Fans (HVLS)	sqft	Existing	0.13	15	\$0.63	15%	50%	\$0.05	0.46	0.64	AEG Research
Mining and Extraction	Heating	Destratification Fans (HVLS)	sqft	Existing	1.16	15	\$0.63	15%	50%	\$0.05	3.67	4.80	AEG Research
Mining and Extraction	Cooling	RTU - Maintenance	sqft	Existing	0.07	3	\$0.07	15%	75%	\$0.32	0.24	0.37	AEG Research
Mining and Extraction	Cooling	Thermostat - WiFi/Interactive	sqft	Existing	0.22	5	\$0.66	5%	15%	\$0.11	0.20	0.26	7th Power Plan
Mining and Extraction	Heating	Thermostat - WiFi/Interactive	sqft	Existing	0.99	5	\$0.66	5%	15%	\$0.11	0.82	1.02	7th Power Plan
Mining and Extraction	Ventilation	Thermostat - WiFi/Interactive	sqft	Existing	0.03	5	\$0.66	5%	15%	\$0.11	0.14	0.20	7th Power Plan
Mining and Extraction	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.18	15	\$0.35	7%	33%	\$0.17	2.70	4.05	7th Power Plan
Mining and Extraction	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.25	15	\$0.58	7%	33%	\$0.20	3.58	5.55	7th Power Plan
Mining and Extraction	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	Existing	0.02	15	\$0.00	1%	2%	\$0.01	0.01	0.03	7th Power Plan
Mining and Extraction	Interior Lighting	Interior Lighting - Timeclocks and Timers	sqft	Existing	0.00	8	\$0.00	7%	7%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Mining and Extraction	Interior Lighting	Interior Lighting - Skylights	sqft	Existing	0.00	15	\$1.01	15%	23%	\$0.00	0.00	0.00	AEG Research
Mining and Extraction	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	sqft	Existing	0.03	16	\$1.81	5%	40%	\$5.03	0.40	0.85	7th Power Plan
Mining and Extraction	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	Existing	0.03	11	\$0.00	15%	50%	\$0.01	0.45	0.85	Illinois TRM
Mining and Extraction	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	sqft	Existing	0.04	8	\$0.03	15%	25%	\$0.10	0.53	1.05	7th Power Plan
Mining and Extraction	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	Existing	0.02	8	\$0.02	33%	60%	\$0.11	0.74	1.51	Pacific Gas and Electric Research
Mining and Extraction	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	Existing	0.03	7	\$1.19	15%	30%	\$5.85	0.46	1.00	AEG Research
Mining and Extraction	Process	Process - Conductivity Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Mining and Extraction	Process	Process - Timers and Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A

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Mining and Extraction	Motors	Process - Timers and Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Mining and Extraction	Process	Refrigeration - Floating Head Pressure	employee	Existing	0.00	15	\$35.46	20%	50%	\$0.00	0.00	0.00	RTF Workbook
Mining and Extraction	Process	Refrigeration - System Optimization	employee	Existing	0.00	15	\$24.97	20%	50%	\$0.00	0.00	0.00	AEG Research
Mining and Extraction	Motors	Pumping System - Equipment Upgrade	employee	Existing	2,684.19	10	\$473.21	9%	38%	\$0.06	46.01	61.32	7th Power Plan
Mining and Extraction	Motors	Pumping System - System Optimization	employee	Existing	1,965.93	12	\$721.17	9%	38%	-\$0.03	32.55	42.65	UNIDO Study on Industrial Energy Efficiency
Mining and Extraction	Motors	Pumping System - Variable Speed Drive	employee	Existing	1,928.32	10	\$750.29	9%	38%	\$0.05	31.68	42.11	UNIDO Study on Industrial Energy Efficiency
Mining and Extraction	Motors	Fan System - Equipment Upgrade	employee	Existing	412.15	10	\$49.57	9%	38%	\$0.05	6.90	8.86	UNIDO Study on Industrial Energy Efficiency
Mining and Extraction	Motors	Fan System - Flow Optimization	employee	Existing	485.96	10	\$82.02	9%	38%	\$0.02	8.12	10.45	UNIDO Study on Industrial Energy Efficiency
Mining and Extraction	Motors	Fan System - Variable Speed Drive	employee	Existing	699.82	10	\$412.74	9%	38%	\$0.07	11.39	15.40	UNIDO Study on Industrial Energy Efficiency
Mining and Extraction	Motors	Compressed Air - Equipment Upgrade	employee	Existing	2,025.42	10	\$176.67	17%	50%	\$0.04	40.96	53.13	7th Power Plan
Mining and Extraction	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	Existing	0.00	15	\$0.00	16%	38%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Mining and Extraction	Motors	Compressed Air - Refrigerated Cycling Dryers	employee	Existing	0.00	10	\$0.00	16%	30%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Mining and Extraction	Motors	Compressed Air - System Controls	employee	Existing	431.99	10	\$126.32	9%	38%	\$0.00	7.31	10.04	UNIDO Study on Industrial Energy Efficiency
Mining and Extraction	Motors	Compressed Air - Leak Management Program	employee	Existing	1,140.39	10	\$126.98	18%	75%	\$0.05	39.36	51.62	7th Power Plan
Mining and Extraction	Motors	Compressed Air - Variable Speed Drive	employee	Existing	792.13	15	\$774.43	26%	45%	\$0.10	8.85	12.42	UNIDO Study on Industrial Energy Efficiency
Mining and Extraction	Motors	Compressed Air - Low Pressure-Drop Filters	employee	Existing	26.41	10	\$11.94	17%	50%	\$0.06	0.52	0.72	Illinois TRM
Mining and Extraction	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	Existing	164.03	10	\$38.72	17%	50%	\$0.03	3.26	4.42	UNIDO Study on Industrial Energy Efficiency
Mining and Extraction	Motors	Compressed Air - Outside Air Intake	employee	Existing	0.00	20	\$0.00	17%	50%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Mining and Extraction	Motors	Compressed Air - Receiver Capacity Addition	employee	Existing	161.00	15	\$106.48	17%	50%	\$0.07	3.17	4.38	UNIDO Study on Industrial Energy Efficiency

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Mining and Extraction	Motors	Material Handling - Variable Speed Drive	employee	Existing	694.38	10	\$310.17	25%	45%	\$0.06	7.96	10.69	7th Power Plan
Mining and Extraction	Motors	Motors - Green Rewind (<100 HP)	employee	Existing	63.15	10	\$34.07	10%	50%	\$0.07	7.22	9.74	7th Power Plan
Mining and Extraction	Motors	Motors - Green Rewind (100 HP+)	employee	Existing	35.73	10	\$12.09	6%	25%	\$0.04	1.96	2.60	7th Power Plan
Mining and Extraction	Motors	Switch from Belt Drive to Direct Drive	employee	Existing	549.62	12	\$149.56	16%	25%	\$0.03	15.21	19.83	2015-mdu-irp-report---volume-iii.pdf
Mining and Extraction	Motors	Motors - Synchronous Belts	employee	Existing	143.59	10	\$44.99	16%	36%	\$0.04	8.49	11.70	7th Power Plan
Mining and Extraction	Miscellaneous	Agriculture - Engine Block Timer	employee	Existing	247.57	3	\$3.66	0%	0%	\$0.01	0.00	0.00	Vermont TRM
Mining and Extraction	Motors	Agriculture - Live Stock Waterer	employee	Existing	6,272.61	10	\$4,167.45	0%	0%	\$0.08	0.00	0.00	Ontario Power TRM
Mining and Extraction	Process	Dairy - Milk Precoolers	employee	Existing	0.00	15	\$112.82	0%	0%	\$0.00	0.00	0.00	Ontario Power TRM
Mining and Extraction	Process	Clean Room: Change Filter Strategy	employee	Existing	162.44	15	\$1.44	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Mining and Extraction	Process	Clean Room: Chiller Optimize	employee	Existing	0.00	15	\$6.68	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Mining and Extraction	Process	Clean Room: Clean Room HVAC	employee	Existing	0.00	15	\$8.06	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Mining and Extraction	Process	Elec Chip Fab: Solidstate Chiller	employee	Existing	0.00	15	\$25.33	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Mining and Extraction	Process	Elec Chip Fab: Eliminate Exhaust	employee	Existing	20.30	15	\$5.17	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Mining and Extraction	Process	Elec Chip Fab: Exhaust Injector	employee	Existing	40.61	15	\$24.92	0%	0%	-\$0.11	0.00	0.00	7th Power Plan
Mining and Extraction	Process	Elec Chip Fab: Reduce Gas Pressure	employee	Existing	40.61	15	\$0.50	0%	0%	-\$0.02	0.00	0.00	7th Power Plan
Mining and Extraction	Motors	Panel: Hydraulic Press	employee	Existing	1,058.37	10	\$309.98	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Mining and Extraction	Motors	Wood: Replace Pneumatic Conveyor	employee	Existing	1,174.74	10	\$23.21	0%	0%	-\$0.07	0.00	0.00	7th Power Plan
Mining and Extraction	Process	Metal: New Arc Furnace	employee	Existing	182.74	10	\$22.99	0%	0%	-\$2.50	0.00	0.00	7th Power Plan
Mining and Extraction	Process	Paper: Premium Control Large Material	employee	Existing	190.13	10	\$114.01	0%	0%	\$0.08	0.00	0.00	7th Power Plan

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Mining and Extraction	Process	Paper: Efficient Pulp Screen	employee	Existing	152.29	10	\$37.56	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Mining and Extraction	Process	Kraft: Effluent Treatment System	employee	Existing	152.29	10	\$15.40	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Mining and Extraction	Motors	Kraft: Efficient Agitator	employee	Existing	1,962.55	10	\$231.32	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Mining and Extraction	Process	Mech Pulp: Premium Process	employee	Existing	1.70	5	\$0.26	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Mining and Extraction	Motors	Mech Pulp: Refiner Plate Improvement	employee	Existing	16.33	1	\$0.88	0%	0%	\$0.05	0.00	0.00	7th Power Plan
Mining and Extraction	Cooling	Transformer - High Efficiency	employee	Existing	18.24	10	\$104.07	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Mining and Extraction	Heating	Transformer - High Efficiency	employee	Existing	81.55	10	\$104.07	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Mining and Extraction	Ventilation	Transformer - High Efficiency	employee	Existing	2.32	10	\$104.07	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Mining and Extraction	Interior Lighting	Transformer - High Efficiency	employee	Existing	15.71	10	\$104.07	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Mining and Extraction	Exterior Lighting	Transformer - High Efficiency	employee	Existing	3.34	10	\$104.07	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Mining and Extraction	Motors	Transformer - High Efficiency	employee	Existing	522.72	10	\$104.07	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Mining and Extraction	Process	Transformer - High Efficiency	employee	Existing	45.69	10	\$104.07	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Mining and Extraction	Miscellaneous	Transformer - High Efficiency	employee	Existing	9.22	10	\$104.07	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Mining and Extraction	Cooling	Strategic Energy Management	employee	Existing	50.10	3	\$639.18	0%	0%	\$0.10	0.00	0.00	AEG Research
Mining and Extraction	Heating	Strategic Energy Management	employee	Existing	233.45	3	\$639.18	0%	0%	\$0.10	0.00	0.00	AEG Research
Mining and Extraction	Ventilation	Strategic Energy Management	employee	Existing	6.65	3	\$639.18	0%	0%	\$0.10	0.00	0.00	AEG Research
Mining and Extraction	Interior Lighting	Strategic Energy Management	employee	Existing	44.79	3	\$639.18	0%	0%	\$0.10	0.00	0.00	AEG Research
Mining and Extraction	Exterior Lighting	Strategic Energy Management	employee	Existing	9.59	3	\$639.18	0%	0%	\$0.10	0.00	0.00	AEG Research
Mining and Extraction	Motors	Strategic Energy Management	employee	Existing	1,497.92	3	\$639.18	0%	0%	\$0.10	0.00	0.00	AEG Research

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Mining and Extraction	Process	Strategic Energy Management	employee	Existing	130.89	3	\$639.18	0%	0%	\$0.10	0.00	0.00	AEG Research
Mining and Extraction	Miscellaneous	Strategic Energy Management	employee	Existing	26.38	3	\$639.18	0%	0%	\$0.10	0.00	0.00	AEG Research
Mining and Extraction	Interior Lighting	Commissioning	employee	Existing	51.68	3	\$1,202.86	0%	0%	\$0.19	0.00	0.00	AEG Research
Mining and Extraction	Exterior Lighting	Commissioning	employee	Existing	11.06	3	\$1,202.86	0%	0%	\$0.19	0.00	0.00	AEG Research
Mining and Extraction	Motors	Commissioning	employee	Existing	1,728.37	3	\$1,202.86	0%	0%	\$0.19	0.00	0.00	AEG Research
Mining and Extraction	Process	Commissioning	employee	Existing	151.02	3	\$1,202.86	0%	0%	\$0.19	0.00	0.00	AEG Research
Mining and Extraction	Miscellaneous	Commissioning	employee	Existing	30.44	3	\$1,202.86	0%	0%	\$0.19	0.00	0.00	AEG Research
Mining and Extraction	Interior Lighting	Retrocommissioning	employee	Existing	52.38	3	\$763.60	10%	40%	\$0.12	0.68	1.18	AEG Research
Mining and Extraction	Exterior Lighting	Retrocommissioning	employee	Existing	11.14	3	\$763.60	10%	40%	\$0.12	0.15	0.26	AEG Research
Mining and Extraction	Motors	Retrocommissioning	employee	Existing	1,742.39	3	\$763.60	10%	40%	\$0.12	28.23	35.95	AEG Research
Mining and Extraction	Process	Retrocommissioning	employee	Existing	152.29	3	\$763.60	10%	40%	\$0.12	2.56	3.08	AEG Research
Mining and Extraction	Miscellaneous	Retrocommissioning	employee	Existing	30.72	3	\$763.60	10%	40%	\$0.12	0.67	0.61	AEG Research
Mining and Extraction	Motors	Municipal Sewage Treatment	employee	Existing	341.24	12	\$237.89	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Mining and Extraction	Motors	Municipal Water Supply Treatment	employee	Existing	0.00	12	\$0.00	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Mining and Extraction	Cooling	Insulation - Ceiling	sqft	New	0.09	45	\$1.28	15%	25%	\$0.18	0.02	0.02	Building Energy Simulation Tool
Mining and Extraction	Heating	Insulation - Ceiling	sqft	New	0.44	45	\$1.28	15%	25%	\$0.18	0.06	0.07	Building Energy Simulation Tool
Mining and Extraction	Ventilation	Insulation - Ceiling	sqft	New	0.01	45	\$1.28	15%	25%	\$0.18	0.01	0.01	Building Energy Simulation Tool
Mining and Extraction	Cooling	Insulation - Ducting	sqft	New	0.04	20	\$0.84	15%	25%	\$1.32	0.01	0.01	Building Energy Simulation Tool
Mining and Extraction	Heating	Insulation - Ducting	sqft	New	0.02	20	\$0.84	15%	25%	\$1.32	0.00	0.00	Building Energy Simulation Tool

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Mining and Extraction	Ventilation	Insulation - Ducting	sqft	New	0.00	20	\$0.84	15%	25%	\$1.32	0.00	0.00	Building Energy Simulation Tool
Mining and Extraction	Cooling	Insulation - Wall Cavity	sqft	New	0.00	45	\$0.15	45%	50%	\$0.02	0.00	0.00	Building Energy Simulation Tool
Mining and Extraction	Heating	Insulation - Wall Cavity	sqft	New	0.59	45	\$0.15	45%	50%	\$0.02	0.04	0.05	Building Energy Simulation Tool
Mining and Extraction	Ventilation	Insulation - Wall Cavity	sqft	New	0.01	45	\$0.15	45%	50%	\$0.02	0.01	0.01	Building Energy Simulation Tool
Mining and Extraction	Cooling	HVAC - Duct Repair and Sealing	sqft	New	0.01	18	\$0.00	15%	25%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Mining and Extraction	Heating	HVAC - Duct Repair and Sealing	sqft	New	0.04	18	\$0.00	15%	25%	\$0.00	0.01	0.01	Building Energy Simulation Tool
Mining and Extraction	Ventilation	HVAC - Duct Repair and Sealing	sqft	New	0.00	18	\$0.00	15%	25%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Mining and Extraction	Cooling	Chiller - Chilled Water Reset	sqft	New	0.03	10	\$0.01	15%	45%	\$0.04	0.00	0.00	AEG-BEST
Mining and Extraction	Cooling	Chiller - Chilled Water Variable-Flow System	sqft	New	0.17	15	\$0.50	15%	60%	\$0.29	0.02	0.02	AEG-BEST
Mining and Extraction	Cooling	Chiller - Variable Speed Fans	sqft	New	0.06	15	\$0.03	15%	75%	\$0.05	0.01	0.01	New Jersey TRM
Mining and Extraction	Cooling	HVAC - Economizer	sqft	New	0.09	10	\$0.25	18%	30%	\$0.33	0.01	0.01	AEG-BEST
Mining and Extraction	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.25	15%	35%	\$13.01	0.00	0.00	7th Power Plan
Mining and Extraction	Cooling	Destratification Fans (HVLS)	sqft	New	0.12	15	\$0.63	15%	50%	\$0.06	0.04	0.05	AEG Research
Mining and Extraction	Heating	Destratification Fans (HVLS)	sqft	New	1.09	15	\$0.63	15%	50%	\$0.06	0.29	0.36	AEG Research
Mining and Extraction	Cooling	RTU - Maintenance	sqft	New	0.06	3	\$0.07	15%	75%	\$0.33	0.00	0.01	AEG Research
Mining and Extraction	Cooling	Thermostat - WiFi/Interactive	sqft	New	0.21	5	\$0.66	5%	15%	\$0.12	0.00	0.01	7th Power Plan
Mining and Extraction	Heating	Thermostat - WiFi/Interactive	sqft	New	0.96	5	\$0.66	5%	15%	\$0.12	0.02	0.02	7th Power Plan
Mining and Extraction	Ventilation	Thermostat - WiFi/Interactive	sqft	New	0.02	5	\$0.66	5%	15%	\$0.12	0.00	0.00	7th Power Plan
Mining and Extraction	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.15	15	\$0.35	22%	41%	\$0.17	0.58	0.80	7th Power Plan

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Mining and Extraction	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.21	15	\$0.58	22%	41%	\$0.20	0.79	1.09	7th Power Plan
Mining and Extraction	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	New	0.02	15	\$0.00	1%	2%	\$0.01	0.00	0.00	7th Power Plan
Mining and Extraction	Interior Lighting	Interior Lighting - Timeclocks and Timers	sqft	New	0.00	8	\$0.00	7%	7%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Mining and Extraction	Interior Lighting	Interior Lighting - Skylights	sqft	New	0.00	15	\$1.01	18%	24%	\$0.00	0.00	0.00	AEG Research
Mining and Extraction	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	sqft	New	0.02	16	\$1.81	5%	40%	\$5.12	0.03	0.06	7th Power Plan
Mining and Extraction	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	New	0.03	11	\$0.00	15%	50%	\$0.01	0.03	0.05	Illinois TRM
Mining and Extraction	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	sqft	New	0.03	8	\$0.03	15%	25%	\$0.11	0.02	0.05	7th Power Plan
Mining and Extraction	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	New	0.02	8	\$0.02	44%	60%	\$0.11	0.02	0.04	Pacific Gas and Electric Research
Mining and Extraction	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	New	0.02	7	\$1.19	15%	30%	\$6.09	0.02	0.04	AEG Research
Mining and Extraction	Process	Process - Conductivity Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Mining and Extraction	Process	Process - Timers and Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Mining and Extraction	Motors	Process - Timers and Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Mining and Extraction	Process	Refrigeration - Floating Head Pressure	employee	New	0.00	15	\$25.06	20%	50%	\$0.00	0.00	0.00	RTF Workbook
Mining and Extraction	Process	Refrigeration - System Optimization	employee	New	0.00	15	\$8.76	20%	50%	\$0.00	0.00	0.00	AEG Research
Mining and Extraction	Motors	Pumping System - Equipment Upgrade	employee	New	2,741.33	10	\$473.21	9%	38%	\$0.06	3.00	3.83	7th Power Plan
Mining and Extraction	Motors	Pumping System - System Optimization	employee	New	2,036.77	12	\$721.17	9%	38%	-\$0.03	3.54	4.33	UNIDO Study on Industrial Energy Efficiency
Mining and Extraction	Motors	Pumping System - Variable Speed Drive	employee	New	2,019.56	10	\$750.29	9%	38%	\$0.05	3.20	3.92	UNIDO Study on Industrial Energy Efficiency
Mining and Extraction	Motors	Fan System - Equipment Upgrade	employee	New	419.78	10	\$49.57	9%	38%	\$0.05	0.66	0.82	UNIDO Study on Industrial Energy Efficiency
Mining and Extraction	Motors	Fan System - Flow Optimization	employee	New	495.58	10	\$82.02	9%	38%	\$0.02	0.78	0.96	UNIDO Study on Industrial Energy Efficiency

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Mining and Extraction	Motors	Fan System - Variable Speed Drive	employee	New	741.11	10	\$412.74	9%	38%	\$0.07	1.18	1.44	UNIDO Study on Industrial Energy Efficiency
Mining and Extraction	Motors	Compressed Air - Equipment Upgrade	employee	New	2,025.42	10	\$176.67	17%	50%	\$0.04	2.57	3.30	7th Power Plan
Mining and Extraction	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	New	0.00	15	\$0.00	16%	38%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Mining and Extraction	Motors	Compressed Air - Refrigerated Cycling Dryers	employee	New	0.00	10	\$0.00	16%	30%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Mining and Extraction	Motors	Compressed Air - System Controls	employee	New	450.21	10	\$126.32	9%	38%	\$0.00	0.49	0.63	UNIDO Study on Industrial Energy Efficiency
Mining and Extraction	Motors	Compressed Air - Leak Management Program	employee	New	1,151.03	10	\$126.98	18%	75%	\$0.05	2.51	3.22	7th Power Plan
Mining and Extraction	Motors	Compressed Air - Variable Speed Drive	employee	New	835.97	15	\$774.43	26%	45%	\$0.10	0.81	1.01	UNIDO Study on Industrial Energy Efficiency
Mining and Extraction	Motors	Compressed Air - Low Pressure-Drop Filters	employee	New	27.87	10	\$11.94	17%	50%	\$0.06	0.04	0.05	Illinois TRM
Mining and Extraction	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	New	169.81	10	\$38.72	17%	50%	\$0.03	0.22	0.28	UNIDO Study on Industrial Energy Efficiency
Mining and Extraction	Motors	Compressed Air - Outside Air Intake	employee	New	0.00	20	\$0.00	17%	50%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Mining and Extraction	Motors	Compressed Air - Receiver Capacity Addition	employee	New	168.44	15	\$106.48	17%	50%	\$0.07	0.29	0.35	UNIDO Study on Industrial Energy Efficiency
Mining and Extraction	Motors	Material Handling - Variable Speed Drive	employee	New	731.61	10	\$310.17	25%	45%	\$0.06	0.81	1.00	7th Power Plan
Mining and Extraction	Motors	Motors - Green Rewind (<100 HP)	employee	New	66.78	10	\$34.07	10%	50%	\$0.07	0.74	0.91	7th Power Plan
Mining and Extraction	Motors	Motors - Green Rewind (100 HP+)	employee	New	37.41	10	\$12.09	6%	25%	\$0.04	0.20	0.24	7th Power Plan
Mining and Extraction	Motors	Switch from Belt Drive to Direct Drive	employee	New	567.43	12	\$149.56	16%	25%	\$0.03	1.64	2.01	2015-mdu-irp-report---volume-iii.pdf
Mining and Extraction	Motors	Motors - Synchronous Belts	employee	New	149.91	10	\$44.99	16%	36%	\$0.04	0.58	0.74	7th Power Plan
Mining and Extraction	Miscellaneous	Agriculture - Engine Block Timer	employee	New	247.57	3	\$3.66	0%	0%	\$0.01	0.00	0.00	Vermont TRM
Mining and Extraction	Motors	Agriculture - Live Stock Waterer	employee	New	6,657.27	10	\$4,167.45	0%	0%	\$0.08	0.00	0.00	Ontario Power TRM
Mining and Extraction	Process	Dairy - Milk Precoolers	employee	New	0.00	15	\$112.82	0%	0%	\$0.00	0.00	0.00	Ontario Power TRM

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Mining and Extraction	Process	Clean Room: Change Filter Strategy	employee	New	162.44	15	\$1.44	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Mining and Extraction	Process	Clean Room: Chiller Optimize	employee	New	0.00	15	\$6.68	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Mining and Extraction	Process	Clean Room: Clean Room HVAC	employee	New	0.00	15	\$8.06	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Mining and Extraction	Process	Elec Chip Fab: Solidstate Chiller	employee	New	0.00	15	\$25.33	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Mining and Extraction	Process	Elec Chip Fab: Eliminate Exhaust	employee	New	20.30	15	\$5.17	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Mining and Extraction	Process	Elec Chip Fab: Exhaust Injector	employee	New	40.61	15	\$24.92	0%	0%	-\$0.11	0.00	0.00	7th Power Plan
Mining and Extraction	Process	Elec Chip Fab: Reduce Gas Pressure	employee	New	40.61	15	\$0.50	0%	0%	-\$0.02	0.00	0.00	7th Power Plan
Mining and Extraction	Motors	Panel: Hydraulic Press	employee	New	1,103.01	10	\$309.98	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Mining and Extraction	Motors	Wood: Replace Pneumatic Conveyor	employee	New	1,174.74	10	\$23.21	0%	0%	-\$0.07	0.00	0.00	7th Power Plan
Mining and Extraction	Process	Metal: New Arc Furnace	employee	New	182.74	10	\$22.99	0%	0%	-\$2.50	0.00	0.00	7th Power Plan
Mining and Extraction	Process	Paper: Premium Control Large Material	employee	New	190.13	10	\$114.01	0%	0%	\$0.08	0.00	0.00	7th Power Plan
Mining and Extraction	Process	Paper: Efficient Pulp Screen	employee	New	152.29	10	\$37.56	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Mining and Extraction	Process	Kraft: Effluent Treatment System	employee	New	152.29	10	\$15.40	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Mining and Extraction	Motors	Kraft: Efficient Agitator	employee	New	2,003.49	10	\$231.32	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Mining and Extraction	Process	Mech Pulp: Premium Process	employee	New	1.70	5	\$0.26	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Mining and Extraction	Motors	Mech Pulp: Refiner Plate Improvement	employee	New	17.33	1	\$0.88	0%	0%	\$0.05	0.00	0.00	7th Power Plan
Mining and Extraction	Cooling	Transformer - High Efficiency	employee	New	16.66	10	\$102.81	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Mining and Extraction	Heating	Transformer - High Efficiency	employee	New	79.04	10	\$102.81	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Mining and Extraction	Ventilation	Transformer - High Efficiency	employee	New	1.58	10	\$102.81	15%	15%	\$0.02	0.00	0.00	7th Power Plan

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Mining and Extraction	Interior Lighting	Transformer - High Efficiency	employee	New	13.21	10	\$102.81	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Mining and Extraction	Exterior Lighting	Transformer - High Efficiency	employee	New	2.85	10	\$102.81	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Mining and Extraction	Motors	Transformer - High Efficiency	employee	New	554.77	10	\$102.81	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Mining and Extraction	Process	Transformer - High Efficiency	employee	New	45.69	10	\$102.81	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Mining and Extraction	Miscellaneous	Transformer - High Efficiency	employee	New	8.74	10	\$102.81	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Mining and Extraction	Cooling	Strategic Energy Management	employee	New	47.41	3	\$631.43	0%	0%	\$0.10	0.00	0.00	AEG Research
Mining and Extraction	Heating	Strategic Energy Management	employee	New	227.66	3	\$631.43	0%	0%	\$0.10	0.00	0.00	AEG Research
Mining and Extraction	Ventilation	Strategic Energy Management	employee	New	4.55	3	\$631.43	0%	0%	\$0.10	0.00	0.00	AEG Research
Mining and Extraction	Interior Lighting	Strategic Energy Management	employee	New	38.17	3	\$631.43	0%	0%	\$0.10	0.00	0.00	AEG Research
Mining and Extraction	Exterior Lighting	Strategic Energy Management	employee	New	8.25	3	\$631.43	0%	0%	\$0.10	0.00	0.00	AEG Research
Mining and Extraction	Motors	Strategic Energy Management	employee	New	1,602.68	3	\$631.43	0%	0%	\$0.10	0.00	0.00	AEG Research
Mining and Extraction	Process	Strategic Energy Management	employee	New	131.98	3	\$631.43	0%	0%	\$0.10	0.00	0.00	AEG Research
Mining and Extraction	Miscellaneous	Strategic Energy Management	employee	New	25.26	3	\$631.43	0%	0%	\$0.10	0.00	0.00	AEG Research
Mining and Extraction	Interior Lighting	Commissioning	employee	New	43.92	3	\$1,200.36	10%	40%	\$0.19	0.00	0.01	AEG Research
Mining and Extraction	Exterior Lighting	Commissioning	employee	New	9.51	3	\$1,200.36	10%	40%	\$0.19	0.00	0.00	AEG Research
Mining and Extraction	Motors	Commissioning	employee	New	1,849.24	3	\$1,200.36	10%	40%	\$0.19	0.23	0.32	AEG Research
Mining and Extraction	Process	Commissioning	employee	New	152.29	3	\$1,200.36	10%	40%	\$0.19	0.02	0.03	AEG Research
Mining and Extraction	Miscellaneous	Commissioning	employee	New	29.15	3	\$1,200.36	10%	40%	\$0.19	0.00	0.00	AEG Research
Mining and Extraction	Interior Lighting	Retrocommissioning	employee	New	44.04	3	\$762.01	0%	0%	\$0.12	0.00	0.00	AEG Research

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Mining and Extraction	Exterior Lighting	Retrocommissioning	employee	New	9.51	3	\$762.01	0%	0%	\$0.12	0.00	0.00	AEG Research
Mining and Extraction	Motors	Retrocommissioning	employee	New	1,849.24	3	\$762.01	0%	0%	\$0.12	0.00	0.00	AEG Research
Mining and Extraction	Process	Retrocommissioning	employee	New	152.29	3	\$762.01	0%	0%	\$0.12	0.00	0.00	AEG Research
Mining and Extraction	Miscellaneous	Retrocommissioning	employee	New	29.15	3	\$762.01	0%	0%	\$0.12	0.00	0.00	AEG Research
Mining and Extraction	Motors	Municipal Sewage Treatment	employee	New	360.88	12	\$237.89	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Mining and Extraction	Motors	Municipal Water Supply Treatment	employee	New	0.00	12	\$0.00	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Food Mfg	Cooling	Insulation - Ceiling	sqft	Existing	0.10	45	\$1.28	15%	25%	\$0.17	2.26	2.92	Building Energy Simulation Tool
Food Mfg	Heating	Insulation - Ceiling	sqft	Existing	0.45	45	\$1.28	15%	25%	\$0.17	9.09	11.29	Building Energy Simulation Tool
Food Mfg	Ventilation	Insulation - Ceiling	sqft	Existing	0.01	45	\$1.28	15%	25%	\$0.17	1.52	2.21	Building Energy Simulation Tool
Food Mfg	Cooling	Insulation - Ducting	sqft	Existing	0.04	20	\$0.84	15%	25%	\$1.23	0.82	1.09	Building Energy Simulation Tool
Food Mfg	Heating	Insulation - Ducting	sqft	Existing	0.02	20	\$0.84	15%	25%	\$1.23	0.38	0.47	Building Energy Simulation Tool
Food Mfg	Ventilation	Insulation - Ducting	sqft	Existing	0.00	20	\$0.84	15%	25%	\$1.23	0.06	0.09	Building Energy Simulation Tool
Food Mfg	Cooling	Insulation - Wall Cavity	sqft	Existing	0.00	45	\$0.15	45%	50%	\$0.02	0.02	0.02	Building Energy Simulation Tool
Food Mfg	Heating	Insulation - Wall Cavity	sqft	Existing	0.64	45	\$0.15	45%	50%	\$0.02	6.54	7.89	Building Energy Simulation Tool
Food Mfg	Ventilation	Insulation - Wall Cavity	sqft	Existing	0.02	45	\$0.15	45%	50%	\$0.02	1.02	1.47	Building Energy Simulation Tool
Food Mfg	Cooling	HVAC - Duct Repair and Sealing	sqft	Existing	0.01	18	\$0.00	15%	25%	\$0.00	0.30	0.38	Building Energy Simulation Tool
Food Mfg	Heating	HVAC - Duct Repair and Sealing	sqft	Existing	0.04	18	\$0.00	15%	25%	\$0.00	0.92	1.11	Building Energy Simulation Tool
Food Mfg	Ventilation	HVAC - Duct Repair and Sealing	sqft	Existing	0.00	18	\$0.00	15%	25%	\$0.00	0.14	0.21	Building Energy Simulation Tool
Food Mfg	Cooling	Chiller - Chilled Water Reset	sqft	Existing	0.04	10	\$0.01	15%	45%	\$0.03	0.72	1.03	AEG-BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Food Mfg	Cooling	Chiller - Chilled Water Variable-Flow System	sqft	Existing	0.21	15	\$0.50	15%	60%	\$0.24	5.76	8.40	AEG-BEST
Food Mfg	Cooling	Chiller - Variable Speed Fans	sqft	Existing	0.08	15	\$0.03	15%	75%	\$0.04	2.96	4.17	New Jersey TRM
Food Mfg	Cooling	HVAC - Economizer	sqft	Existing	0.10	10	\$0.25	18%	30%	\$0.30	2.86	4.19	AEG-BEST
Food Mfg	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.25	15%	35%	\$11.12	0.50	0.85	7th Power Plan
Food Mfg	Cooling	Destratification Fans (HVLS)	sqft	Existing	0.13	15	\$0.63	15%	50%	\$0.05	11.14	15.69	AEG Research
Food Mfg	Heating	Destratification Fans (HVLS)	sqft	Existing	1.16	15	\$0.63	15%	50%	\$0.05	89.87	117.45	AEG Research
Food Mfg	Cooling	RTU - Maintenance	sqft	Existing	0.07	3	\$0.07	15%	75%	\$0.32	5.99	9.14	AEG Research
Food Mfg	Cooling	Thermostat - WiFi/Interactive	sqft	Existing	0.22	5	\$0.66	5%	15%	\$0.11	4.82	6.34	7th Power Plan
Food Mfg	Heating	Thermostat - WiFi/Interactive	sqft	Existing	0.99	5	\$0.66	5%	15%	\$0.11	19.99	24.94	7th Power Plan
Food Mfg	Ventilation	Thermostat - WiFi/Interactive	sqft	Existing	0.03	5	\$0.66	5%	15%	\$0.11	3.35	4.87	7th Power Plan
Food Mfg	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.18	15	\$0.35	7%	33%	\$0.17	107.02	160.82	7th Power Plan
Food Mfg	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.25	15	\$0.58	7%	33%	\$0.20	141.93	220.31	7th Power Plan
Food Mfg	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	Existing	0.02	15	\$0.00	1%	2%	\$0.01	0.54	1.04	7th Power Plan
Food Mfg	Interior Lighting	Interior Lighting - Timers and Timers	sqft	Existing	0.00	8	\$0.00	7%	7%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Food Mfg	Interior Lighting	Interior Lighting - Skylights	sqft	Existing	0.00	15	\$1.01	15%	23%	\$0.00	0.00	0.00	AEG Research
Food Mfg	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	sqft	Existing	0.03	16	\$1.81	5%	40%	\$5.03	15.83	33.55	7th Power Plan
Food Mfg	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	Existing	0.03	11	\$0.00	15%	50%	\$0.01	18.02	33.67	Illinois TRM
Food Mfg	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	sqft	Existing	0.04	8	\$0.03	15%	25%	\$0.10	21.07	41.86	7th Power Plan
Food Mfg	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	Existing	0.02	8	\$0.02	33%	60%	\$0.11	29.25	59.86	Pacific Gas and Electric Research
Food Mfg	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	Existing	0.03	7	\$1.19	15%	30%	\$5.85	18.20	39.59	AEG Research

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Food Mfg	Process	Process - Conductivity Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Food Mfg	Process	Process - Timers and Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Food Mfg	Motors	Process - Timers and Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Food Mfg	Process	Refrigeration - Floating Head Pressure	employee	Existing	284.36	15	\$334.46	20%	50%	\$0.13	115.22	150.61	RTF Workbook
Food Mfg	Process	Refrigeration - System Optimization	employee	Existing	459.69	15	\$235.52	20%	50%	\$0.06	186.84	242.33	AEG Research
Food Mfg	Motors	Pumping System - Equipment Upgrade	employee	Existing	1,303.50	10	\$229.00	9%	38%	\$0.06	501.92	668.38	7th Power Plan
Food Mfg	Motors	Pumping System - System Optimization	employee	Existing	964.93	12	\$349.00	9%	38%	-\$0.03	360.12	468.47	UNIDO Study on Industrial Energy Efficiency
Food Mfg	Motors	Pumping System - Variable Speed Drive	employee	Existing	954.17	10	\$363.09	9%	38%	\$0.05	354.58	464.99	UNIDO Study on Industrial Energy Efficiency
Food Mfg	Motors	Fan System - Equipment Upgrade	employee	Existing	1,206.83	10	\$143.60	9%	38%	\$0.05	455.12	580.67	UNIDO Study on Industrial Energy Efficiency
Food Mfg	Motors	Fan System - Flow Optimization	employee	Existing	1,418.18	10	\$237.59	9%	38%	\$0.02	533.46	683.82	UNIDO Study on Industrial Energy Efficiency
Food Mfg	Motors	Fan System - Variable Speed Drive	employee	Existing	2,068.69	10	\$1,195.53	9%	38%	\$0.07	761.01	1,016.40	UNIDO Study on Industrial Energy Efficiency
Food Mfg	Motors	Compressed Air - Equipment Upgrade	employee	Existing	1,504.26	10	\$131.21	17%	50%	\$0.04	683.34	886.29	7th Power Plan
Food Mfg	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	Existing	0.00	15	\$0.00	16%	38%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Food Mfg	Motors	Compressed Air - Refrigerated Cycling Dryers	employee	Existing	0.00	10	\$0.00	16%	30%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Food Mfg	Motors	Compressed Air - System Controls	employee	Existing	327.56	10	\$93.81	9%	38%	\$0.00	125.26	169.48	UNIDO Study on Industrial Energy Efficiency
Food Mfg	Motors	Compressed Air - Leak Management Program	employee	Existing	851.62	10	\$94.31	18%	75%	\$0.05	661.35	863.79	7th Power Plan
Food Mfg	Motors	Compressed Air - Variable Speed Drive	employee	Existing	599.61	15	\$575.17	26%	45%	\$0.10	151.28	209.48	UNIDO Study on Industrial Energy Efficiency
Food Mfg	Motors	Compressed Air - Low Pressure-Drop Filters	employee	Existing	19.99	10	\$8.86	17%	50%	\$0.06	8.83	12.22	Illinois TRM
Food Mfg	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	Existing	123.50	10	\$28.76	17%	50%	\$0.03	55.23	74.33	UNIDO Study on Industrial Energy Efficiency

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Food Mfg	Motors	Compressed Air - Outside Air Intake	employee	Existing	0.00	20	\$0.00	17%	50%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Food Mfg	Motors	Compressed Air - Receiver Capacity Addition	employee	Existing	122.12	15	\$79.09	17%	50%	\$0.07	54.38	73.92	UNIDO Study on Industrial Energy Efficiency
Food Mfg	Motors	Material Handling - Variable Speed Drive	employee	Existing	3,719.33	10	\$1,614.20	25%	45%	\$0.06	967.85	1,274.14	7th Power Plan
Food Mfg	Motors	Motors - Green Rewind (<100 HP)	employee	Existing	75.89	10	\$40.12	10%	50%	\$0.07	196.16	261.41	7th Power Plan
Food Mfg	Motors	Motors - Green Rewind (100 HP+)	employee	Existing	43.06	10	\$14.24	6%	25%	\$0.04	53.37	69.92	7th Power Plan
Food Mfg	Motors	Switch from Belt Drive to Direct Drive	employee	Existing	656.17	12	\$176.12	16%	25%	\$0.03	409.23	529.78	2015-mdu-irp-report---volume-iii.pdf
Food Mfg	Motors	Motors - Synchronous Belts	employee	Existing	172.82	10	\$52.98	16%	36%	\$0.04	231.17	313.22	7th Power Plan
Food Mfg	Miscellaneous	Agriculture - Engine Block Timer	employee	Existing	747.24	3	\$11.05	0%	0%	\$0.01	0.00	0.00	Vermont TRM
Food Mfg	Motors	Agriculture - Live Stock Waterer	employee	Existing	3,079.12	10	\$2,016.79	0%	0%	\$0.08	0.00	0.00	Ontario Power TRM
Food Mfg	Process	Dairy - Milk Precoolers	employee	Existing	1,895.74	15	\$1,064.27	0%	0%	\$0.06	0.00	0.00	Ontario Power TRM
Food Mfg	Process	Clean Room: Change Filter Strategy	employee	Existing	60.51	15	\$0.53	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Food Mfg	Process	Clean Room: Chiller Optimize	employee	Existing	567.83	15	\$63.02	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Food Mfg	Process	Clean Room: Clean Room HVAC	employee	Existing	344.77	15	\$76.07	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Food Mfg	Process	Elec Chip Fab: Solidstate Chiller	employee	Existing	341.23	15	\$238.94	0%	0%	-\$0.08	0.00	0.00	7th Power Plan
Food Mfg	Process	Elec Chip Fab: Eliminate Exhaust	employee	Existing	7.56	15	\$1.92	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Food Mfg	Process	Elec Chip Fab: Exhaust Injector	employee	Existing	14.97	15	\$9.28	0%	0%	-\$0.11	0.00	0.00	7th Power Plan
Food Mfg	Process	Elec Chip Fab: Reduce Gas Pressure	employee	Existing	15.13	15	\$0.19	0%	0%	-\$0.02	0.00	0.00	7th Power Plan
Food Mfg	Motors	Panel: Hydraulic Press	employee	Existing	5,613.47	10	\$1,613.23	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Food Mfg	Motors	Wood: Replace Pneumatic Conveyor	employee	Existing	6,113.67	10	\$120.82	0%	0%	-\$0.07	0.00	0.00	7th Power Plan
Food Mfg	Process	Metal: New Arc Furnace	employee	Existing	1,267.68	10	\$159.51	0%	0%	-\$2.50	0.00	0.00	7th Power Plan
Food Mfg	Process	Paper: Premium Control Large Material	employee	Existing	413.18	10	\$251.95	0%	0%	\$0.08	0.00	0.00	7th Power Plan

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Food Mfg	Process	Paper: Efficient Pulp Screen	employee	Existing	336.52	10	\$82.99	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Food Mfg	Process	Kraft: Effluent Treatment System	employee	Existing	336.52	10	\$34.02	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Food Mfg	Motors	Kraft: Efficient Agitator	employee	Existing	10,290.06	10	\$1,203.84	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Food Mfg	Process	Mech Pulp: Premium Process	employee	Existing	3.73	5	\$0.58	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Food Mfg	Motors	Mech Pulp: Refiner Plate Improvement	employee	Existing	86.21	1	\$4.59	0%	0%	\$0.05	0.00	0.00	7th Power Plan
Food Mfg	Cooling	Transformer - High Efficiency	employee	Existing	19.86	10	\$140.44	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Food Mfg	Heating	Transformer - High Efficiency	employee	Existing	88.82	10	\$140.44	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Food Mfg	Ventilation	Transformer - High Efficiency	employee	Existing	2.53	10	\$140.44	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Food Mfg	Interior Lighting	Transformer - High Efficiency	employee	Existing	27.75	10	\$140.44	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Food Mfg	Exterior Lighting	Transformer - High Efficiency	employee	Existing	5.90	10	\$140.44	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Food Mfg	Motors	Transformer - High Efficiency	employee	Existing	624.40	10	\$140.44	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Food Mfg	Process	Transformer - High Efficiency	employee	Existing	165.47	10	\$140.44	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Food Mfg	Miscellaneous	Transformer - High Efficiency	employee	Existing	27.82	10	\$140.44	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Food Mfg	Cooling	Strategic Energy Management	employee	Existing	54.56	3	\$862.54	0%	18%	\$0.10	2.12	2.85	AEG Research
Food Mfg	Heating	Strategic Energy Management	employee	Existing	254.25	3	\$862.54	0%	18%	\$0.10	9.32	11.74	AEG Research
Food Mfg	Ventilation	Strategic Energy Management	employee	Existing	7.24	3	\$862.54	0%	18%	\$0.10	1.56	2.29	AEG Research
Food Mfg	Interior Lighting	Strategic Energy Management	employee	Existing	79.17	3	\$862.54	0%	18%	\$0.10	13.71	24.16	AEG Research
Food Mfg	Exterior Lighting	Strategic Energy Management	employee	Existing	16.95	3	\$862.54	0%	18%	\$0.10	3.01	5.29	AEG Research
Food Mfg	Motors	Strategic Energy Management	employee	Existing	1,790.73	3	\$862.54	0%	18%	\$0.10	389.72	497.48	AEG Research
Food Mfg	Process	Strategic Energy Management	employee	Existing	474.47	3	\$862.54	0%	18%	\$0.10	106.45	130.02	AEG Research

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Food Mfg	Miscellaneous	Strategic Energy Management	employee	Existing	79.69	3	\$862.54	0%	18%	\$0.10	23.15	21.42	AEG Research
Food Mfg	Interior Lighting	Commissioning	employee	Existing	91.02	3	\$1,657.54	0%	0%	\$0.19	0.00	0.00	AEG Research
Food Mfg	Exterior Lighting	Commissioning	employee	Existing	19.48	3	\$1,657.54	0%	0%	\$0.19	0.00	0.00	AEG Research
Food Mfg	Motors	Commissioning	employee	Existing	2,057.58	3	\$1,657.54	0%	0%	\$0.19	0.00	0.00	AEG Research
Food Mfg	Process	Commissioning	employee	Existing	545.12	3	\$1,657.54	0%	0%	\$0.19	0.00	0.00	AEG Research
Food Mfg	Miscellaneous	Commissioning	employee	Existing	91.52	3	\$1,657.54	0%	0%	\$0.19	0.00	0.00	AEG Research
Food Mfg	Interior Lighting	Retrocommissioning	employee	Existing	92.52	3	\$1,052.24	10%	37%	\$0.12	24.27	42.26	AEG Research
Food Mfg	Exterior Lighting	Retrocommissioning	employee	Existing	19.68	3	\$1,052.24	10%	37%	\$0.12	5.29	9.20	AEG Research
Food Mfg	Motors	Retrocommissioning	employee	Existing	2,081.34	3	\$1,052.24	10%	37%	\$0.12	683.81	866.05	AEG Research
Food Mfg	Process	Retrocommissioning	employee	Existing	551.57	3	\$1,052.24	10%	37%	\$0.12	186.77	226.38	AEG Research
Food Mfg	Miscellaneous	Retrocommissioning	employee	Existing	92.72	3	\$1,052.24	10%	37%	\$0.12	40.62	37.32	AEG Research
Food Mfg	Motors	Municipal Sewage Treatment	employee	Existing	168.53	12	\$115.12	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Food Mfg	Motors	Municipal Water Supply Treatment	employee	Existing	0.00	12	\$0.00	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Food Mfg	Cooling	Insulation - Ceiling	sqft	New	0.09	45	\$1.28	15%	25%	\$0.18	0.34	0.39	Building Energy Simulation Tool
Food Mfg	Heating	Insulation - Ceiling	sqft	New	0.44	45	\$1.28	15%	25%	\$0.18	1.43	1.60	Building Energy Simulation Tool
Food Mfg	Ventilation	Insulation - Ceiling	sqft	New	0.01	45	\$1.28	15%	25%	\$0.18	0.20	0.24	Building Energy Simulation Tool
Food Mfg	Cooling	Insulation - Ducting	sqft	New	0.04	20	\$0.84	15%	25%	\$1.32	0.13	0.15	Building Energy Simulation Tool
Food Mfg	Heating	Insulation - Ducting	sqft	New	0.02	20	\$0.84	15%	25%	\$1.32	0.06	0.07	Building Energy Simulation Tool
Food Mfg	Ventilation	Insulation - Ducting	sqft	New	0.00	20	\$0.84	15%	25%	\$1.32	0.01	0.01	Building Energy Simulation Tool
Food Mfg	Cooling	Insulation - Wall Cavity	sqft	New	0.00	45	\$0.15	45%	50%	\$0.02	0.00	0.00	Building Energy Simulation Tool
Food Mfg	Heating	Insulation - Wall Cavity	sqft	New	0.59	45	\$0.15	45%	50%	\$0.02	0.97	1.08	Building Energy Simulation Tool
Food Mfg	Ventilation	Insulation - Wall Cavity	sqft	New	0.01	45	\$0.15	45%	50%	\$0.02	0.13	0.16	Building Energy Simulation Tool

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Food Mfg	Cooling	HVAC - Duct Repair and Sealing	sqft	New	0.01	18	\$0.00	15%	25%	\$0.00	0.04	0.05	Building Energy Simulation Tool
Food Mfg	Heating	HVAC - Duct Repair and Sealing	sqft	New	0.04	18	\$0.00	15%	25%	\$0.00	0.13	0.15	Building Energy Simulation Tool
Food Mfg	Ventilation	HVAC - Duct Repair and Sealing	sqft	New	0.00	18	\$0.00	15%	25%	\$0.00	0.02	0.02	Building Energy Simulation Tool
Food Mfg	Cooling	Chiller - Chilled Water Reset	sqft	New	0.03	10	\$0.01	15%	45%	\$0.04	0.03	0.04	AEG-BEST
Food Mfg	Cooling	Chiller - Chilled Water Variable-Flow System	sqft	New	0.17	15	\$0.50	15%	60%	\$0.29	0.36	0.46	AEG-BEST
Food Mfg	Cooling	Chiller - Variable Speed Fans	sqft	New	0.06	15	\$0.03	15%	75%	\$0.05	0.18	0.23	New Jersey TRM
Food Mfg	Cooling	HVAC - Economizer	sqft	New	0.09	10	\$0.25	18%	30%	\$0.33	0.15	0.20	AEG-BEST
Food Mfg	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.25	15%	35%	\$12.99	0.03	0.04	7th Power Plan
Food Mfg	Cooling	Destratification Fans (HVLS)	sqft	New	0.12	15	\$0.63	15%	50%	\$0.06	0.75	0.96	AEG Research
Food Mfg	Heating	Destratification Fans (HVLS)	sqft	New	1.09	15	\$0.63	15%	50%	\$0.06	6.09	7.57	AEG Research
Food Mfg	Cooling	RTU - Maintenance	sqft	New	0.06	3	\$0.07	15%	75%	\$0.33	0.06	0.10	AEG Research
Food Mfg	Cooling	Thermostat - WiFi/Interactive	sqft	New	0.21	5	\$0.66	5%	15%	\$0.12	0.10	0.13	7th Power Plan
Food Mfg	Heating	Thermostat - WiFi/Interactive	sqft	New	0.96	5	\$0.66	5%	15%	\$0.12	0.42	0.54	7th Power Plan
Food Mfg	Ventilation	Thermostat - WiFi/Interactive	sqft	New	0.02	5	\$0.66	5%	15%	\$0.12	0.06	0.09	7th Power Plan
Food Mfg	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.15	15	\$0.35	22%	41%	\$0.17	22.04	30.11	7th Power Plan
Food Mfg	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.20	15	\$0.58	22%	41%	\$0.20	29.85	41.07	7th Power Plan
Food Mfg	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	New	0.02	15	\$0.00	1%	2%	\$0.01	0.03	0.05	7th Power Plan
Food Mfg	Interior Lighting	Interior Lighting - Timeclocks and Timers	sqft	New	0.00	8	\$0.00	7%	7%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Food Mfg	Interior Lighting	Interior Lighting - Skylights	sqft	New	0.00	15	\$1.01	18%	24%	\$0.00	0.00	0.00	AEG Research
Food Mfg	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	sqft	New	0.02	16	\$1.81	5%	40%	\$5.13	1.16	1.87	7th Power Plan

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Food Mfg	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	New	0.02	11	\$0.00	15%	50%	\$0.01	0.97	1.61	Illinois TRM
Food Mfg	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	sqft	New	0.03	8	\$0.03	15%	25%	\$0.11	0.83	1.49	7th Power Plan
Food Mfg	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	New	0.02	8	\$0.02	44%	60%	\$0.11	0.71	1.27	Pacific Gas and Electric Research
Food Mfg	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	New	0.02	7	\$1.19	15%	30%	\$6.12	0.71	1.30	AEG Research
Food Mfg	Process	Process - Conductivity Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Food Mfg	Process	Process - Timers and Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Food Mfg	Motors	Process - Timers and Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Food Mfg	Process	Refrigeration - Floating Head Pressure	employee	New	286.22	15	\$236.37	20%	50%	\$0.09	8.36	10.35	RTF Workbook
Food Mfg	Process	Refrigeration - System Optimization	employee	New	459.69	15	\$82.65	20%	50%	\$0.02	13.40	16.62	AEG Research
Food Mfg	Motors	Pumping System - Equipment Upgrade	employee	New	1,328.71	10	\$229.00	9%	38%	\$0.06	28.18	35.80	7th Power Plan
Food Mfg	Motors	Pumping System - System Optimization	employee	New	991.55	12	\$349.00	9%	38%	-\$0.03	34.83	42.50	UNIDO Study on Industrial Energy Efficiency
Food Mfg	Motors	Pumping System - Variable Speed Drive	employee	New	987.18	10	\$363.09	9%	38%	\$0.05	31.93	39.14	UNIDO Study on Industrial Energy Efficiency
Food Mfg	Motors	Fan System - Equipment Upgrade	employee	New	1,221.56	10	\$143.60	9%	38%	\$0.05	39.36	48.44	UNIDO Study on Industrial Energy Efficiency
Food Mfg	Motors	Fan System - Flow Optimization	employee	New	1,440.13	10	\$237.59	9%	38%	\$0.02	46.42	57.10	UNIDO Study on Industrial Energy Efficiency
Food Mfg	Motors	Fan System - Variable Speed Drive	employee	New	2,167.64	10	\$1,195.53	9%	38%	\$0.07	70.27	85.93	UNIDO Study on Industrial Energy Efficiency
Food Mfg	Motors	Compressed Air - Equipment Upgrade	employee	New	1,504.26	10	\$131.21	17%	50%	\$0.04	37.07	47.22	7th Power Plan
Food Mfg	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	New	0.00	15	\$0.00	16%	38%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Food Mfg	Motors	Compressed Air - Refrigerated Cycling Dryers	employee	New	0.00	10	\$0.00	16%	30%	\$0.00	0.00	0.00	Michigan Energy Measures Database

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Food Mfg	Motors	Compressed Air - System Controls	employee	New	337.46	10	\$93.81	9%	38%	\$0.00	7.17	9.10	UNIDO Study on Industrial Energy Efficiency
Food Mfg	Motors	Compressed Air - Leak Management Program	employee	New	856.86	10	\$94.31	18%	75%	\$0.05	36.25	46.11	7th Power Plan
Food Mfg	Motors	Compressed Air - Variable Speed Drive	employee	New	626.49	15	\$575.17	26%	45%	\$0.10	11.77	14.50	UNIDO Study on Industrial Energy Efficiency
Food Mfg	Motors	Compressed Air - Low Pressure-Drop Filters	employee	New	20.88	10	\$8.86	17%	50%	\$0.06	0.52	0.66	Illinois TRM
Food Mfg	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	New	126.84	10	\$28.76	17%	50%	\$0.03	3.14	3.99	UNIDO Study on Industrial Energy Efficiency
Food Mfg	Motors	Compressed Air - Outside Air Intake	employee	New	0.00	20	\$0.00	17%	50%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Food Mfg	Motors	Compressed Air - Receiver Capacity Addition	employee	New	126.29	15	\$79.09	17%	50%	\$0.07	4.14	5.11	UNIDO Study on Industrial Energy Efficiency
Food Mfg	Motors	Material Handling - Variable Speed Drive	employee	New	3,858.04	10	\$1,614.20	25%	45%	\$0.06	87.62	107.33	7th Power Plan
Food Mfg	Motors	Motors - Green Rewind (<100 HP)	employee	New	79.40	10	\$40.12	10%	50%	\$0.07	18.06	22.09	7th Power Plan
Food Mfg	Motors	Motors - Green Rewind (100 HP+)	employee	New	44.51	10	\$14.24	6%	25%	\$0.04	4.80	5.88	7th Power Plan
Food Mfg	Motors	Switch from Belt Drive to Direct Drive	employee	New	671.98	12	\$176.12	16%	25%	\$0.03	39.32	48.00	2015-mdu-irp-report---volume-iii.pdf
Food Mfg	Motors	Motors - Synchronous Belts	employee	New	178.25	10	\$52.98	16%	36%	\$0.04	13.26	16.83	7th Power Plan
Food Mfg	Miscellaneous	Agriculture - Engine Block Timer	employee	New	747.24	3	\$11.05	0%	0%	\$0.01	0.00	0.00	Vermont TRM
Food Mfg	Motors	Agriculture - Live Stock Waterer	employee	New	3,244.88	10	\$2,016.79	0%	0%	\$0.08	0.00	0.00	Ontario Power TRM
Food Mfg	Process	Dairy - Milk Precoolers	employee	New	1,908.16	15	\$1,064.27	0%	0%	\$0.06	0.00	0.00	Ontario Power TRM
Food Mfg	Process	Clean Room: Change Filter Strategy	employee	New	60.51	15	\$0.53	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Food Mfg	Process	Clean Room: Chiller Optimize	employee	New	567.83	15	\$63.02	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Food Mfg	Process	Clean Room: Clean Room HVAC	employee	New	343.47	15	\$76.07	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Food Mfg	Process	Elec Chip Fab: Solidstate Chiller	employee	New	343.47	15	\$238.94	0%	0%	-\$0.08	0.00	0.00	7th Power Plan
Food Mfg	Process	Elec Chip Fab: Eliminate Exhaust	employee	New	7.54	15	\$1.92	0%	0%	\$0.03	0.00	0.00	7th Power Plan

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Food Mfg	Process	Elec Chip Fab: Exhaust Injector	employee	New	15.07	15	\$9.28	0%	0%	-\$0.11	0.00	0.00	7th Power Plan
Food Mfg	Process	Elec Chip Fab: Reduce Gas Pressure	employee	New	15.13	15	\$0.19	0%	0%	-\$0.02	0.00	0.00	7th Power Plan
Food Mfg	Motors	Panel: Hydraulic Press	employee	New	5,789.95	10	\$1,613.23	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Food Mfg	Motors	Wood: Replace Pneumatic Conveyor	employee	New	6,113.67	10	\$120.82	0%	0%	-\$0.07	0.00	0.00	7th Power Plan
Food Mfg	Process	Metal: New Arc Furnace	employee	New	1,262.90	10	\$159.51	0%	0%	-\$2.50	0.00	0.00	7th Power Plan
Food Mfg	Process	Paper: Premium Control Large Material	employee	New	417.57	10	\$251.95	0%	0%	\$0.08	0.00	0.00	7th Power Plan
Food Mfg	Process	Paper: Efficient Pulp Screen	employee	New	335.25	10	\$82.99	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Food Mfg	Process	Kraft: Effluent Treatment System	employee	New	335.25	10	\$34.02	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Food Mfg	Motors	Kraft: Efficient Agitator	employee	New	10,474.97	10	\$1,203.84	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Food Mfg	Process	Mech Pulp: Premium Process	employee	New	3.74	5	\$0.58	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Food Mfg	Motors	Mech Pulp: Refiner Plate Improvement	employee	New	90.85	1	\$4.59	0%	0%	\$0.05	0.00	0.00	7th Power Plan
Food Mfg	Cooling	Transformer - High Efficiency	employee	New	17.97	10	\$139.00	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Food Mfg	Heating	Transformer - High Efficiency	employee	New	86.25	10	\$139.00	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Food Mfg	Ventilation	Transformer - High Efficiency	employee	New	1.61	10	\$139.00	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Food Mfg	Interior Lighting	Transformer - High Efficiency	employee	New	22.20	10	\$139.00	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Food Mfg	Exterior Lighting	Transformer - High Efficiency	employee	New	4.74	10	\$139.00	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Food Mfg	Motors	Transformer - High Efficiency	employee	New	658.02	10	\$139.00	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Food Mfg	Process	Transformer - High Efficiency	employee	New	167.23	10	\$139.00	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Food Mfg	Miscellaneous	Transformer - High Efficiency	employee	New	26.39	10	\$139.00	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Food Mfg	Cooling	Strategic Energy Management	employee	New	51.17	3	\$853.69	0%	18%	\$0.10	0.02	0.02	AEG Research
Food Mfg	Heating	Strategic Energy Management	employee	New	248.46	3	\$853.69	0%	18%	\$0.10	0.07	0.09	AEG Research

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Food Mfg	Ventilation	Strategic Energy Management	employee	New	4.63	3	\$853.69	0%	18%	\$0.10	0.01	0.02	AEG Research
Food Mfg	Interior Lighting	Strategic Energy Management	employee	New	64.14	3	\$853.69	0%	18%	\$0.10	0.10	0.20	AEG Research
Food Mfg	Exterior Lighting	Strategic Energy Management	employee	New	13.70	3	\$853.69	0%	18%	\$0.10	0.02	0.04	AEG Research
Food Mfg	Motors	Strategic Energy Management	employee	New	1,900.94	3	\$853.69	0%	18%	\$0.10	3.21	4.29	AEG Research
Food Mfg	Process	Strategic Energy Management	employee	New	483.11	3	\$853.69	0%	18%	\$0.10	0.81	1.08	AEG Research
Food Mfg	Miscellaneous	Strategic Energy Management	employee	New	76.24	3	\$853.69	0%	18%	\$0.10	0.16	0.14	AEG Research
Food Mfg	Interior Lighting	Commissioning	employee	New	73.77	3	\$1,653.13	10%	37%	\$0.19	0.17	0.35	AEG Research
Food Mfg	Exterior Lighting	Commissioning	employee	New	15.80	3	\$1,653.13	10%	37%	\$0.19	0.04	0.08	AEG Research
Food Mfg	Motors	Commissioning	employee	New	2,191.66	3	\$1,653.13	10%	37%	\$0.19	5.55	7.42	AEG Research
Food Mfg	Process	Commissioning	employee	New	557.00	3	\$1,653.13	10%	37%	\$0.19	1.40	1.86	AEG Research
Food Mfg	Miscellaneous	Commissioning	employee	New	87.91	3	\$1,653.13	10%	37%	\$0.19	0.28	0.25	AEG Research
Food Mfg	Interior Lighting	Retrocommissioning	employee	New	74.01	3	\$1,049.44	0%	0%	\$0.12	0.00	0.00	AEG Research
Food Mfg	Exterior Lighting	Retrocommissioning	employee	New	15.81	3	\$1,049.44	0%	0%	\$0.12	0.00	0.00	AEG Research
Food Mfg	Motors	Retrocommissioning	employee	New	2,193.39	3	\$1,049.44	0%	0%	\$0.12	0.00	0.00	AEG Research
Food Mfg	Process	Retrocommissioning	employee	New	557.44	3	\$1,049.44	0%	0%	\$0.12	0.00	0.00	AEG Research
Food Mfg	Miscellaneous	Retrocommissioning	employee	New	87.97	3	\$1,049.44	0%	0%	\$0.12	0.00	0.00	AEG Research
Food Mfg	Motors	Municipal Sewage Treatment	employee	New	176.33	12	\$115.12	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Food Mfg	Motors	Municipal Water Supply Treatment	employee	New	0.00	12	\$0.00	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Paper Mfg	Cooling	Insulation - Ceiling	sqft	Existing	0.10	45	\$1.28	15%	25%	\$0.17	3.49	4.51	Building Energy Simulation Tool
Paper Mfg	Heating	Insulation - Ceiling	sqft	Existing	0.45	45	\$1.28	15%	25%	\$0.17	14.04	17.44	Building Energy Simulation Tool
Paper Mfg	Ventilation	Insulation - Ceiling	sqft	Existing	0.01	45	\$1.28	15%	25%	\$0.17	2.35	3.41	Building Energy Simulation Tool
Paper Mfg	Cooling	Insulation - Ducting	sqft	Existing	0.04	20	\$0.84	15%	25%	\$1.23	1.26	1.69	Building Energy Simulation Tool

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Paper Mfg	Heating	Insulation - Ducting	sqft	Existing	0.02	20	\$0.84	15%	25%	\$1.23	0.58	0.73	Building Energy Simulation Tool
Paper Mfg	Ventilation	Insulation - Ducting	sqft	Existing	0.00	20	\$0.84	15%	25%	\$1.23	0.10	0.14	Building Energy Simulation Tool
Paper Mfg	Cooling	Insulation - Wall Cavity	sqft	Existing	0.00	45	\$0.15	45%	50%	\$0.02	0.03	0.04	Building Energy Simulation Tool
Paper Mfg	Heating	Insulation - Wall Cavity	sqft	Existing	0.64	45	\$0.15	45%	50%	\$0.02	10.10	12.17	Building Energy Simulation Tool
Paper Mfg	Ventilation	Insulation - Wall Cavity	sqft	Existing	0.02	45	\$0.15	45%	50%	\$0.02	1.57	2.28	Building Energy Simulation Tool
Paper Mfg	Cooling	HVAC - Duct Repair and Sealing	sqft	Existing	0.01	18	\$0.00	15%	25%	\$0.00	0.46	0.59	Building Energy Simulation Tool
Paper Mfg	Heating	HVAC - Duct Repair and Sealing	sqft	Existing	0.04	18	\$0.00	15%	25%	\$0.00	1.42	1.72	Building Energy Simulation Tool
Paper Mfg	Ventilation	HVAC - Duct Repair and Sealing	sqft	Existing	0.00	18	\$0.00	15%	25%	\$0.00	0.22	0.32	Building Energy Simulation Tool
Paper Mfg	Cooling	Chiller - Chilled Water Reset	sqft	Existing	0.04	10	\$0.01	15%	45%	\$0.03	1.12	1.58	AEG-BEST
Paper Mfg	Cooling	Chiller - Chilled Water Variable-Flow System	sqft	Existing	0.21	15	\$0.50	15%	60%	\$0.24	8.89	12.97	AEG-BEST
Paper Mfg	Cooling	Chiller - Variable Speed Fans	sqft	Existing	0.08	15	\$0.03	15%	75%	\$0.04	4.57	6.44	New Jersey TRM
Paper Mfg	Cooling	HVAC - Economizer	sqft	Existing	0.10	10	\$0.25	18%	30%	\$0.30	4.41	6.47	AEG-BEST
Paper Mfg	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.25	15%	35%	\$11.12	0.77	1.31	7th Power Plan
Paper Mfg	Cooling	Destratification Fans (HVLS)	sqft	Existing	0.13	15	\$0.63	15%	50%	\$0.05	17.20	24.22	AEG Research
Paper Mfg	Heating	Destratification Fans (HVLS)	sqft	Existing	1.16	15	\$0.63	15%	50%	\$0.05	138.74	181.33	AEG Research
Paper Mfg	Cooling	RTU - Maintenance	sqft	Existing	0.07	3	\$0.07	15%	75%	\$0.32	9.25	14.11	AEG Research
Paper Mfg	Cooling	Thermostat - WiFi/Interactive	sqft	Existing	0.22	5	\$0.66	5%	15%	\$0.11	7.44	9.78	7th Power Plan
Paper Mfg	Heating	Thermostat - WiFi/Interactive	sqft	Existing	0.99	5	\$0.66	5%	15%	\$0.11	30.87	38.51	7th Power Plan
Paper Mfg	Ventilation	Thermostat - WiFi/Interactive	sqft	Existing	0.03	5	\$0.66	5%	15%	\$0.11	5.17	7.52	7th Power Plan
Paper Mfg	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.18	15	\$0.35	7%	33%	\$0.17	221.72	333.20	7th Power Plan
Paper Mfg	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.25	15	\$0.58	7%	33%	\$0.20	294.07	456.45	7th Power Plan

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Paper Mfg	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	Existing	0.02	15	\$0.00	1%	2%	\$0.01	1.11	2.16	7th Power Plan
Paper Mfg	Interior Lighting	Interior Lighting - Timeclocks and Timers	sqft	Existing	0.00	8	\$0.00	7%	7%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Paper Mfg	Interior Lighting	Interior Lighting - Skylights	sqft	Existing	0.00	15	\$1.01	15%	23%	\$0.00	0.00	0.00	AEG Research
Paper Mfg	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	sqft	Existing	0.03	16	\$1.81	5%	40%	\$5.03	32.83	69.53	7th Power Plan
Paper Mfg	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	Existing	0.03	11	\$0.00	15%	50%	\$0.01	37.33	69.77	Illinois TRM
Paper Mfg	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	sqft	Existing	0.04	8	\$0.03	15%	25%	\$0.10	43.65	86.72	7th Power Plan
Paper Mfg	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	Existing	0.02	8	\$0.02	33%	60%	\$0.11	60.60	124.02	Pacific Gas and Electric Research
Paper Mfg	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	Existing	0.03	7	\$1.19	15%	30%	\$5.85	37.64	81.99	AEG Research
Paper Mfg	Process	Process - Conductivity Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Paper Mfg	Process	Process - Timers and Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Paper Mfg	Motors	Process - Timers and Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Paper Mfg	Process	Refrigeration - Floating Head Pressure	employee	Existing	267.71	15	\$318.76	20%	50%	\$0.13	24.02	32.10	RTF Workbook
Paper Mfg	Process	Refrigeration - System Optimization	employee	Existing	429.53	15	\$224.46	20%	50%	\$0.06	38.57	51.44	AEG Research
Paper Mfg	Motors	Pumping System - Equipment Upgrade	employee	Existing	24,528.76	10	\$4,394.19	9%	38%	\$0.06	2,088.15	2,855.77	7th Power Plan
Paper Mfg	Motors	Pumping System - System Optimization	employee	Existing	18,107.03	12	\$6,696.75	9%	38%	-\$0.03	1,492.58	1,992.55	UNIDO Study on Industrial Energy Efficiency
Paper Mfg	Motors	Pumping System - Variable Speed Drive	employee	Existing	17,866.51	10	\$6,967.12	9%	38%	\$0.05	1,464.86	1,974.96	UNIDO Study on Industrial Energy Efficiency
Paper Mfg	Motors	Fan System - Equipment Upgrade	employee	Existing	13,171.26	10	\$1,602.04	9%	38%	\$0.05	1,097.05	1,436.65	UNIDO Study on Industrial Energy Efficiency
Paper Mfg	Motors	Fan System - Flow Optimization	employee	Existing	15,495.49	10	\$2,650.65	9%	38%	\$0.02	1,287.94	1,693.06	UNIDO Study on Industrial Energy Efficiency
Paper Mfg	Motors	Fan System - Variable Speed Drive	employee	Existing	22,471.47	10	\$13,337.91	9%	38%	\$0.07	1,821.52	2,506.26	UNIDO Study on Industrial Energy Efficiency

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Paper Mfg	Motors	Compressed Air - Equipment Upgrade	employee	Existing	24,519.58	10	\$2,138.70	17%	50%	\$0.04	2,501.81	3,244.84	7th Power Plan
Paper Mfg	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	Existing	0.00	15	\$0.00	16%	38%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Paper Mfg	Motors	Compressed Air - Refrigerated Cycling Dryers	employee	Existing	0.00	10	\$0.00	16%	30%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Paper Mfg	Motors	Compressed Air - System Controls	employee	Existing	5,212.49	10	\$1,529.17	9%	38%	\$0.00	439.85	613.72	UNIDO Study on Industrial Energy Efficiency
Paper Mfg	Motors	Compressed Air - Leak Management Program	employee	Existing	13,858.43	10	\$1,537.19	18%	75%	\$0.05	2,416.05	3,159.60	7th Power Plan
Paper Mfg	Motors	Compressed Air - Variable Speed Drive	employee	Existing	9,519.64	15	\$9,375.23	26%	45%	\$0.10	529.33	757.71	UNIDO Study on Industrial Energy Efficiency
Paper Mfg	Motors	Compressed Air - Low Pressure-Drop Filters	employee	Existing	317.37	10	\$144.50	17%	50%	\$0.06	30.88	44.20	Illinois TRM
Paper Mfg	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	Existing	1,968.97	10	\$468.76	17%	50%	\$0.03	194.48	269.40	UNIDO Study on Industrial Energy Efficiency
Paper Mfg	Motors	Compressed Air - Outside Air Intake	employee	Existing	0.00	20	\$0.00	17%	50%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Paper Mfg	Motors	Compressed Air - Receiver Capacity Addition	employee	Existing	1,944.14	15	\$1,289.09	17%	50%	\$0.07	191.06	267.70	UNIDO Study on Industrial Energy Efficiency
Paper Mfg	Motors	Material Handling - Variable Speed Drive	employee	Existing	51,097.88	10	\$22,764.94	25%	45%	\$0.06	2,931.08	3,973.15	7th Power Plan
Paper Mfg	Motors	Motors - Green Rewind (<100 HP)	employee	Existing	1,022.80	10	\$555.39	10%	50%	\$0.07	582.54	799.75	7th Power Plan
Paper Mfg	Motors	Motors - Green Rewind (100 HP+)	employee	Existing	581.21	10	\$197.13	6%	25%	\$0.04	158.89	214.10	7th Power Plan
Paper Mfg	Motors	Switch from Belt Drive to Direct Drive	employee	Existing	8,883.45	12	\$2,437.94	16%	25%	\$0.03	1,223.78	1,625.67	2015-mdu-irp-report---volume-iii.pdf
Paper Mfg	Motors	Motors - Synchronous Belts	employee	Existing	2,334.67	10	\$733.43	16%	36%	\$0.04	689.06	963.00	7th Power Plan
Paper Mfg	Miscellaneous	Agriculture - Engine Block Timer	employee	Existing	6,819.35	3	\$100.84	0%	0%	\$0.01	0.00	0.00	Vermont TRM
Paper Mfg	Motors	Agriculture - Live Stock Waterer	employee	Existing	57,645.21	10	\$38,698.63	0%	0%	\$0.08	0.00	0.00	Ontario Power TRM
Paper Mfg	Process	Dairy - Milk Precoolers	employee	Existing	1,785.12	15	\$1,014.31	0%	0%	\$0.06	0.00	0.00	Ontario Power TRM
Paper Mfg	Process	Clean Room: Change Filter Strategy	employee	Existing	2,433.82	15	\$21.52	0%	0%	\$0.00	0.00	0.00	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Paper Mfg	Process	Clean Room: Chiller Optimize	employee	Existing	541.17	15	\$60.06	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Paper Mfg	Process	Clean Room: Clean Room HVAC	employee	Existing	325.99	15	\$72.50	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Paper Mfg	Process	Elec Chip Fab: Solidstate Chiller	employee	Existing	321.32	15	\$227.73	0%	0%	-\$0.08	0.00	0.00	7th Power Plan
Paper Mfg	Process	Elec Chip Fab: Eliminate Exhaust	employee	Existing	301.83	15	\$77.41	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Paper Mfg	Process	Elec Chip Fab: Exhaust Injector	employee	Existing	595.01	15	\$373.43	0%	0%	-\$0.11	0.00	0.00	7th Power Plan
Paper Mfg	Process	Elec Chip Fab: Reduce Gas Pressure	employee	Existing	608.45	15	\$7.49	0%	0%	-\$0.02	0.00	0.00	7th Power Plan
Paper Mfg	Motors	Panel: Hydraulic Press	employee	Existing	77,425.01	10	\$22,751.28	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Paper Mfg	Motors	Wood: Replace Pneumatic Conveyor	employee	Existing	86,220.62	10	\$1,703.87	0%	0%	-\$0.07	0.00	0.00	7th Power Plan
Paper Mfg	Process	Metal: New Arc Furnace	employee	Existing	8,244.04	10	\$1,045.60	0%	0%	-\$2.50	0.00	0.00	7th Power Plan
Paper Mfg	Process	Paper: Premium Control Large Material	employee	Existing	1,550.19	10	\$952.34	15%	40%	\$0.08	538.86	662.73	7th Power Plan
Paper Mfg	Process	Paper: Efficient Pulp Screen	employee	Existing	1,262.00	10	\$313.70	15%	29%	\$0.03	252.91	306.54	7th Power Plan
Paper Mfg	Process	Kraft: Effluent Treatment System	employee	Existing	1,272.03	10	\$128.61	15%	25%	\$0.01	171.07	205.65	7th Power Plan
Paper Mfg	Motors	Kraft: Efficient Agitator	employee	Existing	145,468.46	10	\$16,977.65	15%	29%	\$0.02	5,830.55	7,084.15	7th Power Plan
Paper Mfg	Process	Mech Pulp: Premium Process	employee	Existing	13.92	5	\$2.20	15%	38%	\$0.03	4.51	5.54	7th Power Plan
Paper Mfg	Motors	Mech Pulp: Refiner Plate Improvement	employee	Existing	1,186.23	1	\$64.76	15%	52%	\$0.05	116.99	151.63	7th Power Plan
Paper Mfg	Cooling	Transformer - High Efficiency	employee	Existing	136.54	10	\$1,559.05	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Paper Mfg	Heating	Transformer - High Efficiency	employee	Existing	610.51	10	\$1,559.05	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Paper Mfg	Ventilation	Transformer - High Efficiency	employee	Existing	17.38	10	\$1,559.05	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Paper Mfg	Interior Lighting	Transformer - High Efficiency	employee	Existing	256.02	10	\$1,559.05	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Paper Mfg	Exterior Lighting	Transformer - High Efficiency	employee	Existing	54.45	10	\$1,559.05	15%	15%	\$0.02	0.00	0.00	7th Power Plan

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Paper Mfg	Motors	Transformer - High Efficiency	employee	Existing	8,432.77	10	\$1,559.05	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Paper Mfg	Process	Transformer - High Efficiency	employee	Existing	604.89	10	\$1,559.05	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Paper Mfg	Miscellaneous	Transformer - High Efficiency	employee	Existing	253.84	10	\$1,559.05	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Paper Mfg	Cooling	Strategic Energy Management	employee	Existing	375.06	3	\$9,575.21	0%	24%	\$0.10	4.37	5.86	AEG Research
Paper Mfg	Heating	Strategic Energy Management	employee	Existing	1,747.64	3	\$9,575.21	0%	24%	\$0.10	19.19	24.18	AEG Research
Paper Mfg	Ventilation	Strategic Energy Management	employee	Existing	49.79	3	\$9,575.21	0%	24%	\$0.10	3.21	4.72	AEG Research
Paper Mfg	Interior Lighting	Strategic Energy Management	employee	Existing	730.67	3	\$9,575.21	0%	24%	\$0.10	37.90	66.77	AEG Research
Paper Mfg	Exterior Lighting	Strategic Energy Management	employee	Existing	156.40	3	\$9,575.21	0%	24%	\$0.10	8.33	14.61	AEG Research
Paper Mfg	Motors	Strategic Energy Management	employee	Existing	24,189.00	3	\$9,575.21	0%	24%	\$0.10	1,548.06	2,022.14	AEG Research
Paper Mfg	Process	Strategic Energy Management	employee	Existing	1,735.61	3	\$9,575.21	0%	24%	\$0.10	112.62	143.41	AEG Research
Paper Mfg	Miscellaneous	Strategic Energy Management	employee	Existing	727.74	3	\$9,575.21	0%	24%	\$0.10	63.33	58.57	AEG Research
Paper Mfg	Interior Lighting	Commissioning	employee	Existing	838.95	3	\$19,406.78	0%	0%	\$0.19	0.00	0.00	AEG Research
Paper Mfg	Exterior Lighting	Commissioning	employee	Existing	179.59	3	\$19,406.78	0%	0%	\$0.19	0.00	0.00	AEG Research
Paper Mfg	Motors	Commissioning	employee	Existing	27,756.12	3	\$19,406.78	0%	0%	\$0.19	0.00	0.00	AEG Research
Paper Mfg	Process	Commissioning	employee	Existing	1,991.35	3	\$19,406.78	0%	0%	\$0.19	0.00	0.00	AEG Research
Paper Mfg	Miscellaneous	Commissioning	employee	Existing	834.40	3	\$19,406.78	0%	0%	\$0.19	0.00	0.00	AEG Research
Paper Mfg	Interior Lighting	Retrocommissioning	employee	Existing	853.38	3	\$12,319.81	10%	35%	\$0.12	46.55	81.07	AEG Research
Paper Mfg	Exterior Lighting	Retrocommissioning	employee	Existing	181.51	3	\$12,319.81	10%	35%	\$0.12	10.15	17.64	AEG Research
Paper Mfg	Motors	Retrocommissioning	employee	Existing	28,097.61	3	\$12,319.81	10%	35%	\$0.12	1,884.38	2,443.50	AEG Research
Paper Mfg	Process	Retrocommissioning	employee	Existing	2,016.30	3	\$12,319.81	10%	35%	\$0.12	137.08	173.31	AEG Research
Paper Mfg	Miscellaneous	Retrocommissioning	employee	Existing	846.15	3	\$12,319.81	10%	35%	\$0.12	77.09	70.83	AEG Research
Paper Mfg	Motors	Municipal Sewage Treatment	employee	Existing	3,148.59	12	\$2,209.05	0%	0%	\$0.04	0.00	0.00	7th Power Plan

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Paper Mfg	Motors	Municipal Water Supply Treatment	employee	Existing	0.00	12	\$0.00	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Paper Mfg	Cooling	Insulation - Ceiling	sqft	New	0.09	45	\$1.28	15%	25%	\$0.18	0.54	0.61	Building Energy Simulation Tool
Paper Mfg	Heating	Insulation - Ceiling	sqft	New	0.44	45	\$1.28	15%	25%	\$0.18	2.23	2.50	Building Energy Simulation Tool
Paper Mfg	Ventilation	Insulation - Ceiling	sqft	New	0.01	45	\$1.28	15%	25%	\$0.18	0.31	0.38	Building Energy Simulation Tool
Paper Mfg	Cooling	Insulation - Ducting	sqft	New	0.04	20	\$0.84	15%	25%	\$1.32	0.21	0.23	Building Energy Simulation Tool
Paper Mfg	Heating	Insulation - Ducting	sqft	New	0.02	20	\$0.84	15%	25%	\$1.32	0.09	0.11	Building Energy Simulation Tool
Paper Mfg	Ventilation	Insulation - Ducting	sqft	New	0.00	20	\$0.84	15%	25%	\$1.32	0.01	0.02	Building Energy Simulation Tool
Paper Mfg	Cooling	Insulation - Wall Cavity	sqft	New	0.00	45	\$0.15	45%	50%	\$0.02	0.00	0.00	Building Energy Simulation Tool
Paper Mfg	Heating	Insulation - Wall Cavity	sqft	New	0.59	45	\$0.15	45%	50%	\$0.02	1.51	1.70	Building Energy Simulation Tool
Paper Mfg	Ventilation	Insulation - Wall Cavity	sqft	New	0.01	45	\$0.15	45%	50%	\$0.02	0.21	0.26	Building Energy Simulation Tool
Paper Mfg	Cooling	HVAC - Duct Repair and Sealing	sqft	New	0.01	18	\$0.00	15%	25%	\$0.00	0.07	0.08	Building Energy Simulation Tool
Paper Mfg	Heating	HVAC - Duct Repair and Sealing	sqft	New	0.04	18	\$0.00	15%	25%	\$0.00	0.21	0.23	Building Energy Simulation Tool
Paper Mfg	Ventilation	HVAC - Duct Repair and Sealing	sqft	New	0.00	18	\$0.00	15%	25%	\$0.00	0.03	0.04	Building Energy Simulation Tool
Paper Mfg	Cooling	Chiller - Chilled Water Reset	sqft	New	0.03	10	\$0.01	15%	45%	\$0.04	0.05	0.07	AEG-BEST
Paper Mfg	Cooling	Chiller - Chilled Water Variable-Flow System	sqft	New	0.17	15	\$0.50	15%	60%	\$0.29	0.57	0.74	AEG-BEST
Paper Mfg	Cooling	Chiller - Variable Speed Fans	sqft	New	0.06	15	\$0.03	15%	75%	\$0.05	0.28	0.36	New Jersey TRM
Paper Mfg	Cooling	HVAC - Economizer	sqft	New	0.09	10	\$0.25	18%	30%	\$0.33	0.23	0.31	AEG-BEST
Paper Mfg	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.25	15%	35%	\$12.99	0.05	0.07	7th Power Plan
Paper Mfg	Cooling	Destratification Fans (HVLS)	sqft	New	0.12	15	\$0.63	15%	50%	\$0.06	1.19	1.52	AEG Research
Paper Mfg	Heating	Destratification Fans (HVLS)	sqft	New	1.09	15	\$0.63	15%	50%	\$0.06	9.64	12.00	AEG Research
Paper Mfg	Cooling	RTU - Maintenance	sqft	New	0.06	3	\$0.07	15%	75%	\$0.33	0.11	0.16	AEG Research

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Paper Mfg	Cooling	Thermostat - WiFi/Interactive	sqft	New	0.21	5	\$0.66	5%	15%	\$0.12	0.15	0.21	7th Power Plan
Paper Mfg	Heating	Thermostat - WiFi/Interactive	sqft	New	0.96	5	\$0.66	5%	15%	\$0.12	0.65	0.83	7th Power Plan
Paper Mfg	Ventilation	Thermostat - WiFi/Interactive	sqft	New	0.02	5	\$0.66	5%	15%	\$0.12	0.09	0.14	7th Power Plan
Paper Mfg	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.15	15	\$0.35	22%	41%	\$0.17	45.99	62.95	7th Power Plan
Paper Mfg	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.20	15	\$0.58	22%	41%	\$0.20	62.30	85.88	7th Power Plan
Paper Mfg	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	New	0.02	15	\$0.00	1%	2%	\$0.01	0.06	0.10	7th Power Plan
Paper Mfg	Interior Lighting	Interior Lighting - Timeclocks and Timers	sqft	New	0.00	8	\$0.00	7%	7%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Paper Mfg	Interior Lighting	Interior Lighting - Skylights	sqft	New	0.00	15	\$1.01	18%	24%	\$0.00	0.00	0.00	AEG Research
Paper Mfg	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	sqft	New	0.02	16	\$1.81	5%	40%	\$5.13	2.46	4.01	7th Power Plan
Paper Mfg	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	New	0.02	11	\$0.00	15%	50%	\$0.01	2.06	3.45	Illinois TRM
Paper Mfg	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	sqft	New	0.03	8	\$0.03	15%	25%	\$0.11	1.75	3.19	7th Power Plan
Paper Mfg	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	New	0.02	8	\$0.02	44%	60%	\$0.11	1.50	2.71	Pacific Gas and Electric Research
Paper Mfg	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	New	0.02	7	\$1.19	15%	30%	\$6.12	1.51	2.78	AEG Research
Paper Mfg	Process	Process - Conductivity Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Paper Mfg	Process	Process - Timers and Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Paper Mfg	Motors	Process - Timers and Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Paper Mfg	Process	Refrigeration - Floating Head Pressure	employee	New	271.22	15	\$225.27	20%	50%	\$0.09	1.82	2.27	RTF Workbook
Paper Mfg	Process	Refrigeration - System Optimization	employee	New	438.11	15	\$78.77	20%	50%	\$0.02	2.94	3.65	AEG Research
Paper Mfg	Motors	Pumping System - Equipment Upgrade	employee	New	25,283.48	10	\$4,394.19	9%	38%	\$0.06	123.41	157.31	7th Power Plan

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Paper Mfg	Motors	Pumping System - System Optimization	employee	New	18,847.64	12	\$6,696.75	9%	38%	-\$0.03	151.39	184.92	UNIDO Study on Industrial Energy Efficiency
Paper Mfg	Motors	Pumping System - Variable Speed Drive	employee	New	18,745.39	10	\$6,967.12	9%	38%	\$0.05	138.43	169.87	UNIDO Study on Industrial Energy Efficiency
Paper Mfg	Motors	Fan System - Equipment Upgrade	employee	New	13,611.51	10	\$1,602.04	9%	38%	\$0.05	100.00	123.12	UNIDO Study on Industrial Energy Efficiency
Paper Mfg	Motors	Fan System - Flow Optimization	employee	New	15,924.36	10	\$2,650.65	9%	38%	\$0.02	117.12	144.32	UNIDO Study on Industrial Energy Efficiency
Paper Mfg	Motors	Fan System - Variable Speed Drive	employee	New	23,904.56	10	\$13,337.91	9%	38%	\$0.07	176.96	216.63	UNIDO Study on Industrial Energy Efficiency
Paper Mfg	Motors	Compressed Air - Equipment Upgrade	employee	New	24,519.58	10	\$2,138.70	17%	50%	\$0.04	138.95	177.24	7th Power Plan
Paper Mfg	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	New	0.00	15	\$0.00	16%	38%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Paper Mfg	Motors	Compressed Air - Refrigerated Cycling Dryers	employee	New	0.00	10	\$0.00	16%	30%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Paper Mfg	Motors	Compressed Air - System Controls	employee	New	5,444.59	10	\$1,529.17	9%	38%	\$0.00	26.64	33.92	UNIDO Study on Industrial Energy Efficiency
Paper Mfg	Motors	Compressed Air - Leak Management Program	employee	New	13,958.19	10	\$1,537.19	18%	75%	\$0.05	135.82	172.98	7th Power Plan
Paper Mfg	Motors	Compressed Air - Variable Speed Drive	employee	New	10,095.97	15	\$9,375.23	26%	45%	\$0.10	43.77	54.06	UNIDO Study on Industrial Energy Efficiency
Paper Mfg	Motors	Compressed Air - Low Pressure-Drop Filters	employee	New	336.55	10	\$144.50	17%	50%	\$0.06	1.93	2.45	Illinois TRM
Paper Mfg	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	New	2,048.28	10	\$468.76	17%	50%	\$0.03	11.69	14.88	UNIDO Study on Industrial Energy Efficiency
Paper Mfg	Motors	Compressed Air - Outside Air Intake	employee	New	0.00	20	\$0.00	17%	50%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Paper Mfg	Motors	Compressed Air - Receiver Capacity Addition	employee	New	2,037.22	15	\$1,289.09	17%	50%	\$0.07	15.42	19.07	UNIDO Study on Industrial Energy Efficiency
Paper Mfg	Motors	Material Handling - Variable Speed Drive	employee	New	53,800.93	10	\$22,764.94	25%	45%	\$0.06	278.98	342.13	7th Power Plan
Paper Mfg	Motors	Motors - Green Rewind (<100 HP)	employee	New	1,086.48	10	\$555.39	10%	50%	\$0.07	56.43	69.09	7th Power Plan
Paper Mfg	Motors	Motors - Green Rewind (100 HP+)	employee	New	609.78	10	\$197.13	6%	25%	\$0.04	15.01	18.42	7th Power Plan
Paper Mfg	Motors	Switch from Belt Drive to Direct Drive	employee	New	9,215.14	12	\$2,437.94	16%	25%	\$0.03	123.30	150.69	2015-mdu-irp-report---volume-iii.pdf

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Paper Mfg	Motors	Motors - Synchronous Belts	employee	New	2,441.95	10	\$733.43	16%	36%	\$0.04	41.84	53.25	7th Power Plan
Paper Mfg	Miscellaneous	Agriculture - Engine Block Timer	employee	New	6,819.35	3	\$100.84	0%	0%	\$0.01	0.00	0.00	Vermont TRM
Paper Mfg	Motors	Agriculture - Live Stock Waterer	employee	New	61,597.54	10	\$38,698.63	0%	0%	\$0.08	0.00	0.00	Ontario Power TRM
Paper Mfg	Process	Dairy - Milk Precoolers	employee	New	1,808.12	15	\$1,014.31	0%	0%	\$0.06	0.00	0.00	Ontario Power TRM
Paper Mfg	Process	Clean Room: Change Filter Strategy	employee	New	2,433.82	15	\$21.52	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Paper Mfg	Process	Clean Room: Chiller Optimize	employee	New	541.17	15	\$60.06	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Paper Mfg	Process	Clean Room: Clean Room HVAC	employee	New	327.14	15	\$72.50	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Paper Mfg	Process	Elec Chip Fab: Solidstate Chiller	employee	New	325.46	15	\$227.73	0%	0%	-\$0.08	0.00	0.00	7th Power Plan
Paper Mfg	Process	Elec Chip Fab: Eliminate Exhaust	employee	New	302.89	15	\$77.41	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Paper Mfg	Process	Elec Chip Fab: Exhaust Injector	employee	New	602.68	15	\$373.43	0%	0%	-\$0.11	0.00	0.00	7th Power Plan
Paper Mfg	Process	Elec Chip Fab: Reduce Gas Pressure	employee	New	608.45	15	\$7.49	0%	0%	-\$0.02	0.00	0.00	7th Power Plan
Paper Mfg	Motors	Panel: Hydraulic Press	employee	New	80,812.76	10	\$22,751.28	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Paper Mfg	Motors	Wood: Replace Pneumatic Conveyor	employee	New	86,220.62	10	\$1,703.87	0%	0%	-\$0.07	0.00	0.00	7th Power Plan
Paper Mfg	Process	Metal: New Arc Furnace	employee	New	8,273.08	10	\$1,045.60	0%	0%	-\$2.50	0.00	0.00	7th Power Plan
Paper Mfg	Process	Paper: Premium Control Large Material	employee	New	1,571.98	10	\$952.34	15%	40%	\$0.08	44.81	53.09	7th Power Plan
Paper Mfg	Process	Paper: Efficient Pulp Screen	employee	New	1,266.45	10	\$313.70	15%	29%	\$0.03	20.57	24.36	7th Power Plan
Paper Mfg	Process	Kraft: Effluent Treatment System	employee	New	1,270.80	10	\$128.61	15%	25%	\$0.01	13.75	16.29	7th Power Plan
Paper Mfg	Motors	Kraft: Efficient Agitator	employee	New	147,251.01	10	\$16,977.65	15%	29%	\$0.02	479.76	566.38	7th Power Plan
Paper Mfg	Process	Mech Pulp: Premium Process	employee	New	14.10	5	\$2.20	15%	38%	\$0.03	0.10	0.13	7th Power Plan
Paper Mfg	Motors	Mech Pulp: Refiner Plate Improvement	employee	New	1,267.56	1	\$64.76	15%	52%	\$0.05	21.26	23.62	7th Power Plan
Paper Mfg	Cooling	Transformer - High Efficiency	employee	New	123.74	10	\$1,548.59	15%	15%	\$0.02	0.00	0.00	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Paper Mfg	Heating	Transformer - High Efficiency	employee	New	592.68	10	\$1,548.59	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Paper Mfg	Ventilation	Transformer - High Efficiency	employee	New	11.20	10	\$1,548.59	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Paper Mfg	Interior Lighting	Transformer - High Efficiency	employee	New	207.06	10	\$1,548.59	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Paper Mfg	Exterior Lighting	Transformer - High Efficiency	employee	New	44.30	10	\$1,548.59	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Paper Mfg	Motors	Transformer - High Efficiency	employee	New	9,010.94	10	\$1,548.59	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Paper Mfg	Process	Transformer - High Efficiency	employee	New	622.48	10	\$1,548.59	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Paper Mfg	Miscellaneous	Transformer - High Efficiency	employee	New	240.86	10	\$1,548.59	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Paper Mfg	Cooling	Strategic Energy Management	employee	New	352.35	3	\$9,510.98	0%	24%	\$0.10	0.03	0.05	AEG Research
Paper Mfg	Heating	Strategic Energy Management	employee	New	1,707.24	3	\$9,510.98	0%	24%	\$0.10	0.14	0.19	AEG Research
Paper Mfg	Ventilation	Strategic Energy Management	employee	New	32.26	3	\$9,510.98	0%	24%	\$0.10	0.02	0.03	AEG Research
Paper Mfg	Interior Lighting	Strategic Energy Management	employee	New	598.17	3	\$9,510.98	0%	24%	\$0.10	0.28	0.56	AEG Research
Paper Mfg	Exterior Lighting	Strategic Energy Management	employee	New	127.98	3	\$9,510.98	0%	24%	\$0.10	0.06	0.12	AEG Research
Paper Mfg	Motors	Strategic Energy Management	employee	New	26,026.27	3	\$9,510.98	0%	24%	\$0.10	13.17	17.73	AEG Research
Paper Mfg	Process	Strategic Energy Management	employee	New	1,798.28	3	\$9,510.98	0%	24%	\$0.10	0.90	1.21	AEG Research
Paper Mfg	Miscellaneous	Strategic Energy Management	employee	New	695.82	3	\$9,510.98	0%	24%	\$0.10	0.44	0.39	AEG Research
Paper Mfg	Interior Lighting	Commissioning	employee	New	687.74	3	\$19,366.08	10%	35%	\$0.19	0.33	0.67	AEG Research
Paper Mfg	Exterior Lighting	Commissioning	employee	New	147.51	3	\$19,366.08	10%	35%	\$0.19	0.07	0.15	AEG Research
Paper Mfg	Motors	Commissioning	employee	New	29,998.79	3	\$19,366.08	10%	35%	\$0.19	15.82	21.29	AEG Research
Paper Mfg	Process	Commissioning	employee	New	2,072.76	3	\$19,366.08	10%	35%	\$0.19	1.08	1.46	AEG Research
Paper Mfg	Miscellaneous	Commissioning	employee	New	802.03	3	\$19,366.08	10%	35%	\$0.19	0.53	0.47	AEG Research

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Paper Mfg	Interior Lighting	Retrocommissioning	employee	New	690.20	3	\$12,293.97	0%	0%	\$0.12	0.00	0.00	AEG Research
Paper Mfg	Exterior Lighting	Retrocommissioning	employee	New	147.67	3	\$12,293.97	0%	0%	\$0.12	0.00	0.00	AEG Research
Paper Mfg	Motors	Retrocommissioning	employee	New	30,030.33	3	\$12,293.97	0%	0%	\$0.12	0.00	0.00	AEG Research
Paper Mfg	Process	Retrocommissioning	employee	New	2,074.94	3	\$12,293.97	0%	0%	\$0.12	0.00	0.00	AEG Research
Paper Mfg	Miscellaneous	Retrocommissioning	employee	New	802.87	3	\$12,293.97	0%	0%	\$0.12	0.00	0.00	AEG Research
Paper Mfg	Motors	Municipal Sewage Treatment	employee	New	3,344.61	12	\$2,209.05	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Paper Mfg	Motors	Municipal Water Supply Treatment	employee	New	0.00	12	\$0.00	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Petroleum Refining	Cooling	Insulation - Ceiling	sqft	Existing	0.10	45	\$1.28	15%	25%	\$0.17	0.01	0.02	Building Energy Simulation Tool
Petroleum Refining	Heating	Insulation - Ceiling	sqft	Existing	0.45	45	\$1.28	15%	25%	\$0.17	0.06	0.07	Building Energy Simulation Tool
Petroleum Refining	Ventilation	Insulation - Ceiling	sqft	Existing	0.01	45	\$1.28	15%	25%	\$0.17	0.01	0.01	Building Energy Simulation Tool
Petroleum Refining	Cooling	Insulation - Ducting	sqft	Existing	0.04	20	\$0.84	15%	25%	\$1.23	0.01	0.01	Building Energy Simulation Tool
Petroleum Refining	Heating	Insulation - Ducting	sqft	Existing	0.02	20	\$0.84	15%	25%	\$1.23	0.00	0.00	Building Energy Simulation Tool
Petroleum Refining	Ventilation	Insulation - Ducting	sqft	Existing	0.00	20	\$0.84	15%	25%	\$1.23	0.00	0.00	Building Energy Simulation Tool
Petroleum Refining	Cooling	Insulation - Wall Cavity	sqft	Existing	0.00	45	\$0.15	45%	50%	\$0.02	0.00	0.00	Building Energy Simulation Tool
Petroleum Refining	Heating	Insulation - Wall Cavity	sqft	Existing	0.64	45	\$0.15	45%	50%	\$0.02	0.04	0.05	Building Energy Simulation Tool
Petroleum Refining	Ventilation	Insulation - Wall Cavity	sqft	Existing	0.02	45	\$0.15	45%	50%	\$0.02	0.01	0.01	Building Energy Simulation Tool
Petroleum Refining	Cooling	HVAC - Duct Repair and Sealing	sqft	Existing	0.01	18	\$0.00	15%	25%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Petroleum Refining	Heating	HVAC - Duct Repair and Sealing	sqft	Existing	0.04	18	\$0.00	15%	25%	\$0.00	0.01	0.01	Building Energy Simulation Tool
Petroleum Refining	Ventilation	HVAC - Duct Repair and Sealing	sqft	Existing	0.00	18	\$0.00	15%	25%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Petroleum Refining	Cooling	Chiller - Chilled Water Reset	sqft	Existing	0.04	10	\$0.01	15%	45%	\$0.03	0.00	0.01	AEG-BEST

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Petroleum Refining	Cooling	Chiller - Chilled Water Variable-Flow System	sqft	Existing	0.21	15	\$0.50	15%	60%	\$0.24	0.04	0.05	AEG-BEST
Petroleum Refining	Cooling	Chiller - Variable Speed Fans	sqft	Existing	0.08	15	\$0.03	15%	75%	\$0.04	0.02	0.03	New Jersey TRM
Petroleum Refining	Cooling	HVAC - Economizer	sqft	Existing	0.10	10	\$0.25	18%	30%	\$0.30	0.02	0.03	AEG-BEST
Petroleum Refining	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.25	15%	35%	\$11.12	0.00	0.01	7th Power Plan
Petroleum Refining	Cooling	Destratification Fans (HVLS)	sqft	Existing	0.13	15	\$0.63	15%	50%	\$0.05	0.07	0.10	AEG Research
Petroleum Refining	Heating	Destratification Fans (HVLS)	sqft	Existing	1.16	15	\$0.63	15%	50%	\$0.05	0.56	0.74	AEG Research
Petroleum Refining	Cooling	RTU - Maintenance	sqft	Existing	0.07	3	\$0.07	15%	75%	\$0.32	0.04	0.06	AEG Research
Petroleum Refining	Cooling	Thermostat - WiFi/Interactive	sqft	Existing	0.22	5	\$0.66	5%	15%	\$0.11	0.03	0.04	7th Power Plan
Petroleum Refining	Heating	Thermostat - WiFi/Interactive	sqft	Existing	0.99	5	\$0.66	5%	15%	\$0.11	0.13	0.16	7th Power Plan
Petroleum Refining	Ventilation	Thermostat - WiFi/Interactive	sqft	Existing	0.03	5	\$0.66	5%	15%	\$0.11	0.02	0.03	7th Power Plan
Petroleum Refining	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.18	15	\$0.35	7%	33%	\$0.17	0.21	0.32	7th Power Plan
Petroleum Refining	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.25	15	\$0.58	7%	33%	\$0.20	0.28	0.44	7th Power Plan
Petroleum Refining	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	Existing	0.02	15	\$0.00	1%	2%	\$0.01	0.00	0.00	7th Power Plan
Petroleum Refining	Interior Lighting	Interior Lighting - Timeclocks and Timers	sqft	Existing	0.00	8	\$0.00	7%	7%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Petroleum Refining	Interior Lighting	Interior Lighting - Skylights	sqft	Existing	0.00	15	\$1.01	15%	23%	\$0.00	0.00	0.00	AEG Research
Petroleum Refining	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	sqft	Existing	0.03	16	\$1.81	5%	40%	\$5.03	0.03	0.07	7th Power Plan
Petroleum Refining	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	Existing	0.03	11	\$0.00	15%	50%	\$0.01	0.04	0.07	Illinois TRM
Petroleum Refining	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	sqft	Existing	0.04	8	\$0.03	15%	25%	\$0.10	0.04	0.08	7th Power Plan
Petroleum Refining	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	Existing	0.02	8	\$0.02	33%	60%	\$0.11	0.06	0.12	Pacific Gas and Electric Research

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Petroleum Refining	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	Existing	0.03	7	\$1.19	15%	30%	\$5.85	0.04	0.08	AEG Research
Petroleum Refining	Process	Process - Conductivity Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Petroleum Refining	Process	Process - Timers and Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Petroleum Refining	Motors	Process - Timers and Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Petroleum Refining	Process	Refrigeration - Floating Head Pressure	employee	Existing	13.67	15	\$16.04	20%	50%	\$0.13	0.21	0.27	RTF Workbook
Petroleum Refining	Process	Refrigeration - System Optimization	employee	Existing	22.04	15	\$11.29	20%	50%	\$0.06	0.33	0.43	AEG Research
Petroleum Refining	Motors	Pumping System - Equipment Upgrade	employee	Existing	663.50	10	\$116.93	9%	38%	\$0.06	9.46	12.60	7th Power Plan
Petroleum Refining	Motors	Pumping System - System Optimization	employee	Existing	481.01	12	\$178.19	9%	38%	-\$0.03	6.60	8.70	UNIDO Study on Industrial Energy Efficiency
Petroleum Refining	Motors	Pumping System - Variable Speed Drive	employee	Existing	468.73	10	\$185.39	9%	38%	\$0.05	6.36	8.56	UNIDO Study on Industrial Energy Efficiency
Petroleum Refining	Motors	Fan System - Equipment Upgrade	employee	Existing	60.11	10	\$7.23	9%	38%	\$0.05	0.84	1.07	UNIDO Study on Industrial Energy Efficiency
Petroleum Refining	Motors	Fan System - Flow Optimization	employee	Existing	70.88	10	\$11.96	9%	38%	\$0.02	0.99	1.27	UNIDO Study on Industrial Energy Efficiency
Petroleum Refining	Motors	Fan System - Variable Speed Drive	employee	Existing	99.67	10	\$60.19	9%	38%	\$0.07	1.34	1.84	UNIDO Study on Industrial Energy Efficiency
Petroleum Refining	Motors	Compressed Air - Equipment Upgrade	employee	Existing	315.04	10	\$27.48	17%	50%	\$0.04	5.30	6.87	7th Power Plan
Petroleum Refining	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	Existing	0.00	15	\$0.00	16%	38%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Petroleum Refining	Motors	Compressed Air - Refrigerated Cycling Dryers	employee	Existing	0.00	10	\$0.00	16%	30%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Petroleum Refining	Motors	Compressed Air - System Controls	employee	Existing	66.10	10	\$19.65	9%	38%	\$0.00	0.92	1.29	UNIDO Study on Industrial Energy Efficiency
Petroleum Refining	Motors	Compressed Air - Leak Management Program	employee	Existing	177.39	10	\$19.75	18%	75%	\$0.05	5.09	6.68	7th Power Plan
Petroleum Refining	Motors	Compressed Air - Variable Speed Drive	employee	Existing	120.33	15	\$120.46	26%	45%	\$0.10	1.11	1.59	UNIDO Study on Industrial Energy Efficiency
Petroleum Refining	Motors	Compressed Air - Low Pressure-Drop Filters	employee	Existing	4.01	10	\$1.86	17%	50%	\$0.06	0.06	0.09	Illinois TRM

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Petroleum Refining	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	Existing	25.26	10	\$6.02	17%	50%	\$0.03	0.42	0.57	UNIDO Study on Industrial Energy Efficiency
Petroleum Refining	Motors	Compressed Air - Outside Air Intake	employee	Existing	0.00	20	\$0.00	17%	50%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Petroleum Refining	Motors	Compressed Air - Receiver Capacity Addition	employee	Existing	24.64	15	\$16.56	17%	50%	\$0.07	0.40	0.56	UNIDO Study on Industrial Energy Efficiency
Petroleum Refining	Motors	Material Handling - Variable Speed Drive	employee	Existing	135.10	10	\$61.74	25%	45%	\$0.06	1.28	1.74	7th Power Plan
Petroleum Refining	Motors	Motors - Green Rewind (<100 HP)	employee	Existing	9.62	10	\$5.31	10%	50%	\$0.07	0.91	1.24	7th Power Plan
Petroleum Refining	Motors	Motors - Green Rewind (100 HP+)	employee	Existing	5.48	10	\$1.89	6%	25%	\$0.04	0.25	0.33	7th Power Plan
Petroleum Refining	Motors	Switch from Belt Drive to Direct Drive	employee	Existing	84.87	12	\$23.32	16%	25%	\$0.03	1.95	2.55	2015-mdu-irp-report---volume-iii.pdf
Petroleum Refining	Motors	Motors - Synchronous Belts	employee	Existing	22.03	10	\$7.02	16%	36%	\$0.04	1.08	1.50	7th Power Plan
Petroleum Refining	Miscellaneous	Agriculture - Engine Block Timer	employee	Existing	47.83	3	\$0.71	0%	0%	\$0.01	0.00	0.00	Vermont TRM
Petroleum Refining	Motors	Agriculture - Live Stock Waterer	employee	Existing	1,514.22	10	\$1,029.74	0%	0%	\$0.08	0.00	0.00	Ontario Power TRM
Petroleum Refining	Process	Dairy - Milk Precoolers	employee	Existing	91.14	15	\$51.03	0%	0%	\$0.06	0.00	0.00	Ontario Power TRM
Petroleum Refining	Process	Clean Room: Change Filter Strategy	employee	Existing	2.96	15	\$0.03	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Petroleum Refining	Process	Clean Room: Chiller Optimize	employee	Existing	27.22	15	\$3.02	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Petroleum Refining	Process	Clean Room: Clean Room HVAC	employee	Existing	16.53	15	\$3.65	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Petroleum Refining	Process	Elec Chip Fab: Solidstate Chiller	employee	Existing	16.40	15	\$11.46	0%	0%	-\$0.08	0.00	0.00	7th Power Plan
Petroleum Refining	Process	Elec Chip Fab: Eliminate Exhaust	employee	Existing	0.37	15	\$0.09	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Petroleum Refining	Process	Elec Chip Fab: Exhaust Injector	employee	Existing	0.73	15	\$0.45	0%	0%	-\$0.11	0.00	0.00	7th Power Plan
Petroleum Refining	Process	Elec Chip Fab: Reduce Gas Pressure	employee	Existing	0.74	15	\$0.01	0%	0%	-\$0.02	0.00	0.00	7th Power Plan
Petroleum Refining	Motors	Panel: Hydraulic Press	employee	Existing	206.67	10	\$61.71	0%	0%	\$0.04	0.00	0.00	7th Power Plan

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Petroleum Refining	Motors	Wood: Replace Pneumatic Conveyor	employee	Existing	233.85	10	\$4.62	0%	0%	-\$0.07	0.00	0.00	7th Power Plan
Petroleum Refining	Process	Metal: New Arc Furnace	employee	Existing	135.56	10	\$17.06	0%	0%	-\$2.50	0.00	0.00	7th Power Plan
Petroleum Refining	Process	Paper: Premium Control Large Material	employee	Existing	27.08	10	\$16.44	0%	0%	\$0.08	0.00	0.00	7th Power Plan
Petroleum Refining	Process	Paper: Efficient Pulp Screen	employee	Existing	21.96	10	\$5.42	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Petroleum Refining	Process	Kraft: Effluent Treatment System	employee	Existing	21.96	10	\$2.22	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Petroleum Refining	Motors	Kraft: Efficient Agitator	employee	Existing	390.75	10	\$46.05	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Petroleum Refining	Process	Mech Pulp: Premium Process	employee	Existing	0.24	5	\$0.04	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Petroleum Refining	Motors	Mech Pulp: Refiner Plate Improvement	employee	Existing	3.18	1	\$0.18	0%	0%	\$0.05	0.00	0.00	7th Power Plan
Petroleum Refining	Cooling	Transformer - High Efficiency	employee	Existing	3.36	10	\$16.98	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Petroleum Refining	Heating	Transformer - High Efficiency	employee	Existing	15.03	10	\$16.98	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Petroleum Refining	Ventilation	Transformer - High Efficiency	employee	Existing	0.43	10	\$16.98	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Petroleum Refining	Interior Lighting	Transformer - High Efficiency	employee	Existing	1.49	10	\$16.98	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Petroleum Refining	Exterior Lighting	Transformer - High Efficiency	employee	Existing	0.32	10	\$16.98	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Petroleum Refining	Motors	Transformer - High Efficiency	employee	Existing	79.64	10	\$16.98	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Petroleum Refining	Process	Transformer - High Efficiency	employee	Existing	10.85	10	\$16.98	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Petroleum Refining	Miscellaneous	Transformer - High Efficiency	employee	Existing	1.78	10	\$16.98	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Petroleum Refining	Cooling	Strategic Energy Management	employee	Existing	9.24	3	\$104.29	0%	5%	\$0.10	0.00	0.00	AEG Research
Petroleum Refining	Heating	Strategic Energy Management	employee	Existing	43.03	3	\$104.29	0%	5%	\$0.10	0.02	0.02	AEG Research
Petroleum Refining	Ventilation	Strategic Energy Management	employee	Existing	1.23	3	\$104.29	0%	5%	\$0.10	0.00	0.00	AEG Research

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Petroleum Refining	Interior Lighting	Strategic Energy Management	employee	Existing	4.26	3	\$104.29	0%	5%	\$0.10	0.01	0.01	AEG Research
Petroleum Refining	Exterior Lighting	Strategic Energy Management	employee	Existing	0.91	3	\$104.29	0%	5%	\$0.10	0.00	0.00	AEG Research
Petroleum Refining	Motors	Strategic Energy Management	employee	Existing	227.98	3	\$104.29	0%	5%	\$0.10	0.50	0.66	AEG Research
Petroleum Refining	Process	Strategic Energy Management	employee	Existing	31.04	3	\$104.29	0%	5%	\$0.10	0.07	0.09	AEG Research
Petroleum Refining	Miscellaneous	Strategic Energy Management	employee	Existing	5.09	3	\$104.29	0%	5%	\$0.10	0.02	0.01	AEG Research
Petroleum Refining	Interior Lighting	Commissioning	employee	Existing	4.91	3	\$191.61	0%	0%	\$0.19	0.00	0.00	AEG Research
Petroleum Refining	Exterior Lighting	Commissioning	employee	Existing	1.05	3	\$191.61	0%	0%	\$0.19	0.00	0.00	AEG Research
Petroleum Refining	Motors	Commissioning	employee	Existing	262.75	3	\$191.61	0%	0%	\$0.19	0.00	0.00	AEG Research
Petroleum Refining	Process	Commissioning	employee	Existing	35.77	3	\$191.61	0%	0%	\$0.19	0.00	0.00	AEG Research
Petroleum Refining	Miscellaneous	Commissioning	employee	Existing	5.87	3	\$191.61	0%	0%	\$0.19	0.00	0.00	AEG Research
Petroleum Refining	Interior Lighting	Retrocommissioning	employee	Existing	4.98	3	\$121.64	5%	39%	\$0.12	0.06	0.11	AEG Research
Petroleum Refining	Exterior Lighting	Retrocommissioning	employee	Existing	1.06	3	\$121.64	5%	39%	\$0.12	0.01	0.02	AEG Research
Petroleum Refining	Motors	Retrocommissioning	employee	Existing	265.45	3	\$121.64	5%	39%	\$0.12	4.01	5.18	AEG Research
Petroleum Refining	Process	Retrocommissioning	employee	Existing	36.15	3	\$121.64	5%	39%	\$0.12	0.57	0.69	AEG Research
Petroleum Refining	Miscellaneous	Retrocommissioning	employee	Existing	5.93	3	\$121.64	5%	39%	\$0.12	0.12	0.11	AEG Research
Petroleum Refining	Motors	Municipal Sewage Treatment	employee	Existing	82.35	12	\$58.78	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Petroleum Refining	Motors	Municipal Water Supply Treatment	employee	Existing	0.00	12	\$0.00	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Petroleum Refining	Cooling	Insulation - Ceiling	sqft	New	0.09	45	\$1.28	15%	25%	\$0.18	0.00	0.00	Building Energy Simulation Tool
Petroleum Refining	Heating	Insulation - Ceiling	sqft	New	0.44	45	\$1.28	15%	25%	\$0.18	0.01	0.01	Building Energy Simulation Tool

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Petroleum Refining	Ventilation	Insulation - Ceiling	sqft	New	0.01	45	\$1.28	15%	25%	\$0.18	0.00	0.00	Building Energy Simulation Tool
Petroleum Refining	Cooling	Insulation - Ducting	sqft	New	0.04	20	\$0.84	15%	25%	\$1.32	0.00	0.00	Building Energy Simulation Tool
Petroleum Refining	Heating	Insulation - Ducting	sqft	New	0.02	20	\$0.84	15%	25%	\$1.32	0.00	0.00	Building Energy Simulation Tool
Petroleum Refining	Ventilation	Insulation - Ducting	sqft	New	0.00	20	\$0.84	15%	25%	\$1.32	0.00	0.00	Building Energy Simulation Tool
Petroleum Refining	Cooling	Insulation - Wall Cavity	sqft	New	0.00	45	\$0.15	45%	50%	\$0.02	0.00	0.00	Building Energy Simulation Tool
Petroleum Refining	Heating	Insulation - Wall Cavity	sqft	New	0.59	45	\$0.15	45%	50%	\$0.02	0.01	0.01	Building Energy Simulation Tool
Petroleum Refining	Ventilation	Insulation - Wall Cavity	sqft	New	0.01	45	\$0.15	45%	50%	\$0.02	0.00	0.00	Building Energy Simulation Tool
Petroleum Refining	Cooling	HVAC - Duct Repair and Sealing	sqft	New	0.01	18	\$0.00	15%	25%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Petroleum Refining	Heating	HVAC - Duct Repair and Sealing	sqft	New	0.04	18	\$0.00	15%	25%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Petroleum Refining	Ventilation	HVAC - Duct Repair and Sealing	sqft	New	0.00	18	\$0.00	15%	25%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Petroleum Refining	Cooling	Chiller - Chilled Water Reset	sqft	New	0.03	10	\$0.01	15%	45%	\$0.04	0.00	0.00	AEG-BEST
Petroleum Refining	Cooling	Chiller - Chilled Water Variable-Flow System	sqft	New	0.17	15	\$0.50	15%	60%	\$0.29	0.00	0.00	AEG-BEST
Petroleum Refining	Cooling	Chiller - Variable Speed Fans	sqft	New	0.06	15	\$0.03	15%	75%	\$0.05	0.00	0.00	New Jersey TRM
Petroleum Refining	Cooling	HVAC - Economizer	sqft	New	0.10	10	\$0.25	18%	30%	\$0.33	0.00	0.00	AEG-BEST
Petroleum Refining	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.25	15%	35%	\$13.01	0.00	0.00	7th Power Plan
Petroleum Refining	Cooling	Destratification Fans (HVLS)	sqft	New	0.12	15	\$0.63	15%	50%	\$0.06	0.01	0.01	AEG Research
Petroleum Refining	Heating	Destratification Fans (HVLS)	sqft	New	1.09	15	\$0.63	15%	50%	\$0.06	0.05	0.06	AEG Research
Petroleum Refining	Cooling	RTU - Maintenance	sqft	New	0.06	3	\$0.07	15%	75%	\$0.33	0.00	0.00	AEG Research
Petroleum Refining	Cooling	Thermostat - WiFi/Interactive	sqft	New	0.21	5	\$0.66	5%	15%	\$0.12	0.00	0.00	7th Power Plan

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Petroleum Refining	Heating	Thermostat - WiFi/Interactive	sqft	New	0.96	5	\$0.66	5%	15%	\$0.12	0.00	0.00	7th Power Plan
Petroleum Refining	Ventilation	Thermostat - WiFi/Interactive	sqft	New	0.02	5	\$0.66	5%	15%	\$0.12	0.00	0.00	7th Power Plan
Petroleum Refining	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.15	15	\$0.35	22%	41%	\$0.17	0.05	0.06	7th Power Plan
Petroleum Refining	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.21	15	\$0.58	22%	41%	\$0.20	0.06	0.09	7th Power Plan
Petroleum Refining	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	New	0.02	15	\$0.00	1%	2%	\$0.01	0.00	0.00	7th Power Plan
Petroleum Refining	Interior Lighting	Interior Lighting - Timeclocks and Timers	sqft	New	0.00	8	\$0.00	7%	7%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Petroleum Refining	Interior Lighting	Interior Lighting - Skylights	sqft	New	0.00	15	\$1.01	18%	24%	\$0.00	0.00	0.00	AEG Research
Petroleum Refining	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	sqft	New	0.02	16	\$1.81	5%	40%	\$5.12	0.00	0.00	7th Power Plan
Petroleum Refining	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	New	0.03	11	\$0.00	15%	50%	\$0.01	0.00	0.00	Illinois TRM
Petroleum Refining	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	sqft	New	0.03	8	\$0.03	15%	25%	\$0.11	0.00	0.00	7th Power Plan
Petroleum Refining	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	New	0.02	8	\$0.02	44%	60%	\$0.11	0.00	0.00	Pacific Gas and Electric Research
Petroleum Refining	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	New	0.02	7	\$1.19	15%	30%	\$6.09	0.00	0.00	AEG Research
Petroleum Refining	Process	Process - Conductivity Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Petroleum Refining	Process	Process - Timers and Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Petroleum Refining	Motors	Process - Timers and Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Petroleum Refining	Process	Refrigeration - Floating Head Pressure	employee	New	13.73	15	\$11.33	20%	50%	\$0.09	0.02	0.02	RTF Workbook
Petroleum Refining	Process	Refrigeration - System Optimization	employee	New	22.04	15	\$3.96	20%	50%	\$0.02	0.03	0.04	AEG Research
Petroleum Refining	Motors	Pumping System - Equipment Upgrade	employee	New	677.34	10	\$116.93	9%	38%	\$0.06	0.64	0.82	7th Power Plan
Petroleum Refining	Motors	Pumping System - System Optimization	employee	New	501.25	12	\$178.19	9%	38%	-\$0.03	0.74	0.91	UNIDO Study on Industrial Energy Efficiency

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Petroleum Refining	Motors	Pumping System - Variable Speed Drive	employee	New	495.39	10	\$185.39	9%	38%	\$0.05	0.67	0.82	UNIDO Study on Industrial Energy Efficiency
Petroleum Refining	Motors	Fan System - Equipment Upgrade	employee	New	61.20	10	\$7.23	9%	38%	\$0.05	0.08	0.10	UNIDO Study on Industrial Energy Efficiency
Petroleum Refining	Motors	Fan System - Flow Optimization	employee	New	72.26	10	\$11.96	9%	38%	\$0.02	0.10	0.12	UNIDO Study on Industrial Energy Efficiency
Petroleum Refining	Motors	Fan System - Variable Speed Drive	employee	New	106.91	10	\$60.19	9%	38%	\$0.07	0.14	0.18	UNIDO Study on Industrial Energy Efficiency
Petroleum Refining	Motors	Compressed Air - Equipment Upgrade	employee	New	315.04	10	\$27.48	17%	50%	\$0.04	0.34	0.44	7th Power Plan
Petroleum Refining	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	New	0.00	15	\$0.00	16%	38%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Petroleum Refining	Motors	Compressed Air - Refrigerated Cycling Dryers	employee	New	0.00	10	\$0.00	16%	30%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Petroleum Refining	Motors	Compressed Air - System Controls	employee	New	69.52	10	\$19.65	9%	38%	\$0.00	0.07	0.08	UNIDO Study on Industrial Energy Efficiency
Petroleum Refining	Motors	Compressed Air - Leak Management Program	employee	New	179.02	10	\$19.75	18%	75%	\$0.05	0.34	0.43	7th Power Plan
Petroleum Refining	Motors	Compressed Air - Variable Speed Drive	employee	New	128.64	15	\$120.46	26%	45%	\$0.10	0.11	0.13	UNIDO Study on Industrial Energy Efficiency
Petroleum Refining	Motors	Compressed Air - Low Pressure-Drop Filters	employee	New	4.29	10	\$1.86	17%	50%	\$0.06	0.00	0.01	Illinois TRM
Petroleum Refining	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	New	26.31	10	\$6.02	17%	50%	\$0.03	0.03	0.04	UNIDO Study on Industrial Energy Efficiency
Petroleum Refining	Motors	Compressed Air - Outside Air Intake	employee	New	0.00	20	\$0.00	17%	50%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Petroleum Refining	Motors	Compressed Air - Receiver Capacity Addition	employee	New	26.00	15	\$16.56	17%	50%	\$0.07	0.04	0.05	UNIDO Study on Industrial Energy Efficiency
Petroleum Refining	Motors	Material Handling - Variable Speed Drive	employee	New	144.13	10	\$61.74	25%	45%	\$0.06	0.14	0.17	7th Power Plan
Petroleum Refining	Motors	Motors - Green Rewind (<100 HP)	employee	New	10.30	10	\$5.31	10%	50%	\$0.07	0.10	0.12	7th Power Plan
Petroleum Refining	Motors	Motors - Green Rewind (100 HP+)	employee	New	5.79	10	\$1.89	6%	25%	\$0.04	0.03	0.03	7th Power Plan
Petroleum Refining	Motors	Switch from Belt Drive to Direct Drive	employee	New	88.13	12	\$23.32	16%	25%	\$0.03	0.22	0.27	2015-mdu-irp-report---volume-iii.pdf
Petroleum Refining	Motors	Motors - Synchronous Belts	employee	New	23.21	10	\$7.02	16%	36%	\$0.04	0.08	0.10	7th Power Plan

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Petroleum Refining	Miscellaneous	Agriculture - Engine Block Timer	employee	New	47.83	3	\$0.71	0%	0%	\$0.01	0.00	0.00	Vermont TRM
Petroleum Refining	Motors	Agriculture - Live Stock Waterer	employee	New	1,627.44	10	\$1,029.74	0%	0%	\$0.08	0.00	0.00	Ontario Power TRM
Petroleum Refining	Process	Dairy - Milk Precoolers	employee	New	91.55	15	\$51.03	0%	0%	\$0.06	0.00	0.00	Ontario Power TRM
Petroleum Refining	Process	Clean Room: Change Filter Strategy	employee	New	2.96	15	\$0.03	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Petroleum Refining	Process	Clean Room: Chiller Optimize	employee	New	27.22	15	\$3.02	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Petroleum Refining	Process	Clean Room: Clean Room HVAC	employee	New	16.48	15	\$3.65	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Petroleum Refining	Process	Elec Chip Fab: Solidstate Chiller	employee	New	16.48	15	\$11.46	0%	0%	-\$0.08	0.00	0.00	7th Power Plan
Petroleum Refining	Process	Elec Chip Fab: Eliminate Exhaust	employee	New	0.37	15	\$0.09	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Petroleum Refining	Process	Elec Chip Fab: Exhaust Injector	employee	New	0.74	15	\$0.45	0%	0%	-\$0.11	0.00	0.00	7th Power Plan
Petroleum Refining	Process	Elec Chip Fab: Reduce Gas Pressure	employee	New	0.74	15	\$0.01	0%	0%	-\$0.02	0.00	0.00	7th Power Plan
Petroleum Refining	Motors	Panel: Hydraulic Press	employee	New	217.75	10	\$61.71	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Petroleum Refining	Motors	Wood: Replace Pneumatic Conveyor	employee	New	233.85	10	\$4.62	0%	0%	-\$0.07	0.00	0.00	7th Power Plan
Petroleum Refining	Process	Metal: New Arc Furnace	employee	New	135.14	10	\$17.06	0%	0%	-\$2.50	0.00	0.00	7th Power Plan
Petroleum Refining	Process	Paper: Premium Control Large Material	employee	New	27.28	10	\$16.44	0%	0%	\$0.08	0.00	0.00	7th Power Plan
Petroleum Refining	Process	Paper: Efficient Pulp Screen	employee	New	21.89	10	\$5.42	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Petroleum Refining	Process	Kraft: Effluent Treatment System	employee	New	21.89	10	\$2.22	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Petroleum Refining	Motors	Kraft: Efficient Agitator	employee	New	398.76	10	\$46.05	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Petroleum Refining	Process	Mech Pulp: Premium Process	employee	New	0.24	5	\$0.04	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Petroleum Refining	Motors	Mech Pulp: Refiner Plate Improvement	employee	New	3.41	1	\$0.18	0%	0%	\$0.05	0.00	0.00	7th Power Plan

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Petroleum Refining	Cooling	Transformer - High Efficiency	employee	New	3.08	10	\$16.76	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Petroleum Refining	Heating	Transformer - High Efficiency	employee	New	14.56	10	\$16.76	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Petroleum Refining	Ventilation	Transformer - High Efficiency	employee	New	0.29	10	\$16.76	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Petroleum Refining	Interior Lighting	Transformer - High Efficiency	employee	New	1.27	10	\$16.76	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Petroleum Refining	Exterior Lighting	Transformer - High Efficiency	employee	New	0.27	10	\$16.76	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Petroleum Refining	Motors	Transformer - High Efficiency	employee	New	85.59	10	\$16.76	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Petroleum Refining	Process	Transformer - High Efficiency	employee	New	10.92	10	\$16.76	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Petroleum Refining	Miscellaneous	Transformer - High Efficiency	employee	New	1.69	10	\$16.76	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Petroleum Refining	Cooling	Strategic Energy Management	employee	New	8.75	3	\$102.97	0%	5%	\$0.10	0.00	0.00	AEG Research
Petroleum Refining	Heating	Strategic Energy Management	employee	New	41.95	3	\$102.97	0%	5%	\$0.10	0.00	0.00	AEG Research
Petroleum Refining	Ventilation	Strategic Energy Management	employee	New	0.85	3	\$102.97	0%	5%	\$0.10	0.00	0.00	AEG Research
Petroleum Refining	Interior Lighting	Strategic Energy Management	employee	New	3.66	3	\$102.97	0%	5%	\$0.10	0.00	0.00	AEG Research
Petroleum Refining	Exterior Lighting	Strategic Energy Management	employee	New	0.79	3	\$102.97	0%	5%	\$0.10	0.00	0.00	AEG Research
Petroleum Refining	Motors	Strategic Energy Management	employee	New	247.26	3	\$102.97	0%	5%	\$0.10	0.00	0.01	AEG Research
Petroleum Refining	Process	Strategic Energy Management	employee	New	31.56	3	\$102.97	0%	5%	\$0.10	0.00	0.00	AEG Research
Petroleum Refining	Miscellaneous	Strategic Energy Management	employee	New	4.88	3	\$102.97	0%	5%	\$0.10	0.00	0.00	AEG Research
Petroleum Refining	Interior Lighting	Commissioning	employee	New	4.21	3	\$191.37	5%	39%	\$0.19	0.00	0.00	AEG Research
Petroleum Refining	Exterior Lighting	Commissioning	employee	New	0.91	3	\$191.37	5%	39%	\$0.19	0.00	0.00	AEG Research
Petroleum Refining	Motors	Commissioning	employee	New	285.24	3	\$191.37	5%	39%	\$0.19	0.03	0.05	AEG Research

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Petroleum Refining	Process	Commissioning	employee	New	36.41	3	\$191.37	5%	39%	\$0.19	0.00	0.01	AEG Research
Petroleum Refining	Miscellaneous	Commissioning	employee	New	5.63	3	\$191.37	5%	39%	\$0.19	0.00	0.00	AEG Research
Petroleum Refining	Interior Lighting	Retrocommissioning	employee	New	4.23	3	\$121.49	0%	0%	\$0.12	0.00	0.00	AEG Research
Petroleum Refining	Exterior Lighting	Retrocommissioning	employee	New	0.91	3	\$121.49	0%	0%	\$0.12	0.00	0.00	AEG Research
Petroleum Refining	Motors	Retrocommissioning	employee	New	285.30	3	\$121.49	0%	0%	\$0.12	0.00	0.00	AEG Research
Petroleum Refining	Process	Retrocommissioning	employee	New	36.41	3	\$121.49	0%	0%	\$0.12	0.00	0.00	AEG Research
Petroleum Refining	Miscellaneous	Retrocommissioning	employee	New	5.63	3	\$121.49	0%	0%	\$0.12	0.00	0.00	AEG Research
Petroleum Refining	Motors	Municipal Sewage Treatment	employee	New	88.21	12	\$58.78	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Petroleum Refining	Motors	Municipal Water Supply Treatment	employee	New	0.00	12	\$0.00	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Cooling	Insulation - Ceiling	sqft	Existing	0.10	45	\$1.28	15%	25%	\$0.17	0.02	0.03	Building Energy Simulation Tool
Stone Clay Glass Products	Heating	Insulation - Ceiling	sqft	Existing	0.45	45	\$1.28	15%	25%	\$0.17	0.09	0.11	Building Energy Simulation Tool
Stone Clay Glass Products	Ventilation	Insulation - Ceiling	sqft	Existing	0.01	45	\$1.28	15%	25%	\$0.17	0.01	0.02	Building Energy Simulation Tool
Stone Clay Glass Products	Cooling	Insulation - Ducting	sqft	Existing	0.04	20	\$0.84	15%	25%	\$1.23	0.01	0.01	Building Energy Simulation Tool
Stone Clay Glass Products	Heating	Insulation - Ducting	sqft	Existing	0.02	20	\$0.84	15%	25%	\$1.23	0.00	0.00	Building Energy Simulation Tool
Stone Clay Glass Products	Ventilation	Insulation - Ducting	sqft	Existing	0.00	20	\$0.84	15%	25%	\$1.23	0.00	0.00	Building Energy Simulation Tool
Stone Clay Glass Products	Cooling	Insulation - Wall Cavity	sqft	Existing	0.00	45	\$0.15	45%	50%	\$0.02	0.00	0.00	Building Energy Simulation Tool
Stone Clay Glass Products	Heating	Insulation - Wall Cavity	sqft	Existing	0.64	45	\$0.15	45%	50%	\$0.02	0.06	0.08	Building Energy Simulation Tool
Stone Clay Glass Products	Ventilation	Insulation - Wall Cavity	sqft	Existing	0.02	45	\$0.15	45%	50%	\$0.02	0.01	0.01	Building Energy Simulation Tool
Stone Clay Glass Products	Cooling	HVAC - Duct Repair and Sealing	sqft	Existing	0.01	18	\$0.00	15%	25%	\$0.00	0.00	0.00	Building Energy Simulation Tool

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Stone Clay Glass Products	Heating	HVAC - Duct Repair and Sealing	sqft	Existing	0.04	18	\$0.00	15%	25%	\$0.00	0.01	0.01	Building Energy Simulation Tool
Stone Clay Glass Products	Ventilation	HVAC - Duct Repair and Sealing	sqft	Existing	0.00	18	\$0.00	15%	25%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Stone Clay Glass Products	Cooling	Chiller - Chilled Water Reset	sqft	Existing	0.04	10	\$0.01	15%	45%	\$0.03	0.01	0.01	AEG-BEST
Stone Clay Glass Products	Cooling	Chiller - Chilled Water Variable-Flow System	sqft	Existing	0.21	15	\$0.50	15%	60%	\$0.24	0.06	0.08	AEG-BEST
Stone Clay Glass Products	Cooling	Chiller - Variable Speed Fans	sqft	Existing	0.08	15	\$0.03	15%	75%	\$0.04	0.03	0.04	New Jersey TRM
Stone Clay Glass Products	Cooling	HVAC - Economizer	sqft	Existing	0.10	10	\$0.25	18%	30%	\$0.30	0.03	0.04	AEG-BEST
Stone Clay Glass Products	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.25	15%	35%	\$11.12	0.00	0.01	7th Power Plan
Stone Clay Glass Products	Cooling	Destratification Fans (HVLS)	sqft	Existing	0.13	15	\$0.63	15%	50%	\$0.05	0.11	0.15	AEG Research
Stone Clay Glass Products	Heating	Destratification Fans (HVLS)	sqft	Existing	1.16	15	\$0.63	15%	50%	\$0.05	0.87	1.13	AEG Research
Stone Clay Glass Products	Cooling	RTU - Maintenance	sqft	Existing	0.07	3	\$0.07	15%	75%	\$0.32	0.06	0.09	AEG Research
Stone Clay Glass Products	Cooling	Thermostat - WiFi/Interactive	sqft	Existing	0.22	5	\$0.66	5%	15%	\$0.11	0.05	0.06	7th Power Plan
Stone Clay Glass Products	Heating	Thermostat - WiFi/Interactive	sqft	Existing	0.99	5	\$0.66	5%	15%	\$0.11	0.19	0.24	7th Power Plan
Stone Clay Glass Products	Ventilation	Thermostat - WiFi/Interactive	sqft	Existing	0.03	5	\$0.66	5%	15%	\$0.11	0.03	0.05	7th Power Plan
Stone Clay Glass Products	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.18	15	\$0.35	7%	33%	\$0.17	0.40	0.60	7th Power Plan
Stone Clay Glass Products	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.25	15	\$0.58	7%	33%	\$0.20	0.53	0.83	7th Power Plan
Stone Clay Glass Products	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	Existing	0.02	15	\$0.00	1%	2%	\$0.01	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Interior Lighting	Interior Lighting - Timeclocks and Timers	sqft	Existing	0.00	8	\$0.00	7%	7%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Stone Clay Glass Products	Interior Lighting	Interior Lighting - Skylights	sqft	Existing	0.00	15	\$1.01	15%	23%	\$0.00	0.00	0.00	AEG Research
Stone Clay Glass Products	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	sqft	Existing	0.03	16	\$1.81	5%	40%	\$5.03	0.06	0.13	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Stone Clay Glass Products	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	Existing	0.03	11	\$0.00	15%	50%	\$0.01	0.07	0.13	Illinois TRM
Stone Clay Glass Products	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	sqft	Existing	0.04	8	\$0.03	15%	25%	\$0.10	0.08	0.16	7th Power Plan
Stone Clay Glass Products	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	Existing	0.02	8	\$0.02	33%	60%	\$0.11	0.11	0.23	Pacific Gas and Electric Research
Stone Clay Glass Products	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	Existing	0.03	7	\$1.19	15%	30%	\$5.85	0.07	0.15	AEG Research
Stone Clay Glass Products	Process	Process - Conductivity Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Process	Process - Timers and Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Motors	Process - Timers and Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Process	Refrigeration - Floating Head Pressure	employee	Existing	9.08	15	\$10.58	20%	50%	\$0.13	0.09	0.12	RTF Workbook
Stone Clay Glass Products	Process	Refrigeration - System Optimization	employee	Existing	14.54	15	\$7.45	20%	50%	\$0.06	0.14	0.19	AEG Research
Stone Clay Glass Products	Motors	Pumping System - Equipment Upgrade	employee	Existing	126.94	10	\$21.93	9%	38%	\$0.06	1.20	1.58	7th Power Plan
Stone Clay Glass Products	Motors	Pumping System - System Optimization	employee	Existing	94.16	12	\$33.42	9%	38%	-\$0.03	0.87	1.11	UNIDO Study on Industrial Energy Efficiency
Stone Clay Glass Products	Motors	Pumping System - Variable Speed Drive	employee	Existing	93.36	10	\$34.77	9%	38%	\$0.05	0.86	1.11	UNIDO Study on Industrial Energy Efficiency
Stone Clay Glass Products	Motors	Fan System - Equipment Upgrade	employee	Existing	99.07	10	\$11.64	9%	38%	\$0.05	0.92	1.16	UNIDO Study on Industrial Energy Efficiency
Stone Clay Glass Products	Motors	Fan System - Flow Optimization	employee	Existing	116.64	10	\$19.26	9%	38%	\$0.02	1.08	1.37	UNIDO Study on Industrial Energy Efficiency
Stone Clay Glass Products	Motors	Fan System - Variable Speed Drive	employee	Existing	170.72	10	\$96.90	9%	38%	\$0.07	1.55	2.04	UNIDO Study on Industrial Energy Efficiency
Stone Clay Glass Products	Motors	Compressed Air - Equipment Upgrade	employee	Existing	57.06	10	\$4.98	17%	50%	\$0.04	0.64	0.82	7th Power Plan
Stone Clay Glass Products	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	Existing	0.00	15	\$0.00	16%	38%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Stone Clay Glass Products	Motors	Compressed Air - Refrigerated Cycling Dryers	employee	Existing	0.00	10	\$0.00	16%	30%	\$0.00	0.00	0.00	Michigan Energy Measures Database

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Stone Clay Glass Products	Motors	Compressed Air - System Controls	employee	Existing	12.67	10	\$3.56	9%	38%	\$0.00	0.12	0.16	UNIDO Study on Industrial Energy Efficiency
Stone Clay Glass Products	Motors	Compressed Air - Leak Management Program	employee	Existing	32.51	10	\$3.58	18%	75%	\$0.05	0.62	0.81	7th Power Plan
Stone Clay Glass Products	Motors	Compressed Air - Variable Speed Drive	employee	Existing	23.12	15	\$21.82	26%	45%	\$0.10	0.14	0.20	UNIDO Study on Industrial Energy Efficiency
Stone Clay Glass Products	Motors	Compressed Air - Low Pressure-Drop Filters	employee	Existing	0.77	10	\$0.34	17%	50%	\$0.06	0.01	0.01	Illinois TRM
Stone Clay Glass Products	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	Existing	4.77	10	\$1.09	17%	50%	\$0.03	0.05	0.07	UNIDO Study on Industrial Energy Efficiency
Stone Clay Glass Products	Motors	Compressed Air - Outside Air Intake	employee	Existing	0.00	20	\$0.00	17%	50%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Stone Clay Glass Products	Motors	Compressed Air - Receiver Capacity Addition	employee	Existing	4.73	15	\$3.00	17%	50%	\$0.07	0.05	0.07	UNIDO Study on Industrial Energy Efficiency
Stone Clay Glass Products	Motors	Material Handling - Variable Speed Drive	employee	Existing	676.60	10	\$287.13	25%	45%	\$0.06	4.35	5.64	7th Power Plan
Stone Clay Glass Products	Motors	Motors - Green Rewind (<100 HP)	employee	Existing	9.39	10	\$4.88	10%	50%	\$0.07	0.60	0.79	7th Power Plan
Stone Clay Glass Products	Motors	Motors - Green Rewind (100 HP+)	employee	Existing	5.34	10	\$1.73	6%	25%	\$0.04	0.16	0.21	7th Power Plan
Stone Clay Glass Products	Motors	Switch from Belt Drive to Direct Drive	employee	Existing	81.21	12	\$21.40	16%	25%	\$0.03	1.25	1.60	2015-mdu-irp-report---volume-iii.pdf
Stone Clay Glass Products	Motors	Motors - Synchronous Belts	employee	Existing	21.45	10	\$6.44	16%	36%	\$0.04	0.71	0.94	7th Power Plan
Stone Clay Glass Products	Miscellaneous	Agriculture - Engine Block Timer	employee	Existing	191.65	3	\$2.83	0%	0%	\$0.01	0.00	0.00	Vermont TRM
Stone Clay Glass Products	Motors	Agriculture - Live Stock Waterer	employee	Existing	301.23	10	\$193.14	0%	0%	\$0.08	0.00	0.00	Ontario Power TRM
Stone Clay Glass Products	Process	Dairy - Milk Precoolers	employee	Existing	60.51	15	\$33.67	0%	0%	\$0.06	0.00	0.00	Ontario Power TRM
Stone Clay Glass Products	Process	Clean Room: Change Filter Strategy	employee	Existing	13.59	15	\$0.12	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Process	Clean Room: Chiller Optimize	employee	Existing	17.96	15	\$1.99	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Process	Clean Room: Clean Room HVAC	employee	Existing	10.91	15	\$2.41	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Process	Elec Chip Fab: Solidstate Chiller	employee	Existing	10.89	15	\$7.56	0%	0%	-\$0.08	0.00	0.00	7th Power Plan

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Stone Clay Glass Products	Process	Elec Chip Fab: Eliminate Exhaust	employee	Existing	1.70	15	\$0.43	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Process	Elec Chip Fab: Exhaust Injector	employee	Existing	3.39	15	\$2.09	0%	0%	-\$0.11	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Process	Elec Chip Fab: Reduce Gas Pressure	employee	Existing	3.40	15	\$0.04	0%	0%	-\$0.02	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Motors	Panel: Hydraulic Press	employee	Existing	1,020.24	10	\$286.96	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Motors	Wood: Replace Pneumatic Conveyor	employee	Existing	1,087.48	10	\$21.49	0%	0%	-\$0.07	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Process	Metal: New Arc Furnace	employee	Existing	888.66	10	\$111.82	0%	0%	-\$2.50	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Process	Paper: Premium Control Large Material	employee	Existing	99.18	10	\$59.61	0%	0%	\$0.08	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Process	Paper: Efficient Pulp Screen	employee	Existing	79.62	10	\$19.64	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Process	Kraft: Effluent Treatment System	employee	Existing	79.62	10	\$8.05	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Motors	Kraft: Efficient Agitator	employee	Existing	1,864.26	10	\$214.14	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Process	Mech Pulp: Premium Process	employee	Existing	0.89	5	\$0.14	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Motors	Mech Pulp: Refiner Plate Improvement	employee	Existing	15.67	1	\$0.82	0%	0%	\$0.05	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Cooling	Transformer - High Efficiency	employee	Existing	7.83	10	\$24.68	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Heating	Transformer - High Efficiency	employee	Existing	35.00	10	\$24.68	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Ventilation	Transformer - High Efficiency	employee	Existing	1.00	10	\$24.68	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Interior Lighting	Transformer - High Efficiency	employee	Existing	4.26	10	\$24.68	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Exterior Lighting	Transformer - High Efficiency	employee	Existing	0.91	10	\$24.68	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Motors	Transformer - High Efficiency	employee	Existing	77.52	10	\$24.68	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Process	Transformer - High Efficiency	employee	Existing	39.72	10	\$24.68	15%	15%	\$0.02	0.00	0.00	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Stone Clay Glass Products	Miscellaneous	Transformer - High Efficiency	employee	Existing	7.13	10	\$24.68	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Cooling	Strategic Energy Management	employee	Existing	21.50	3	\$151.56	0%	0%	\$0.10	0.00	0.00	AEG Research
Stone Clay Glass Products	Heating	Strategic Energy Management	employee	Existing	100.20	3	\$151.56	0%	0%	\$0.10	0.00	0.00	AEG Research
Stone Clay Glass Products	Ventilation	Strategic Energy Management	employee	Existing	2.85	3	\$151.56	0%	0%	\$0.10	0.00	0.00	AEG Research
Stone Clay Glass Products	Interior Lighting	Strategic Energy Management	employee	Existing	12.14	3	\$151.56	0%	0%	\$0.10	0.00	0.00	AEG Research
Stone Clay Glass Products	Exterior Lighting	Strategic Energy Management	employee	Existing	2.60	3	\$151.56	0%	0%	\$0.10	0.00	0.00	AEG Research
Stone Clay Glass Products	Motors	Strategic Energy Management	employee	Existing	222.12	3	\$151.56	0%	0%	\$0.10	0.00	0.00	AEG Research
Stone Clay Glass Products	Process	Strategic Energy Management	employee	Existing	113.80	3	\$151.56	0%	0%	\$0.10	0.00	0.00	AEG Research
Stone Clay Glass Products	Miscellaneous	Strategic Energy Management	employee	Existing	20.42	3	\$151.56	0%	0%	\$0.10	0.00	0.00	AEG Research
Stone Clay Glass Products	Interior Lighting	Commissioning	employee	Existing	14.01	3	\$240.01	0%	0%	\$0.18	0.00	0.00	AEG Research
Stone Clay Glass Products	Exterior Lighting	Commissioning	employee	Existing	3.00	3	\$240.01	0%	0%	\$0.18	0.00	0.00	AEG Research
Stone Clay Glass Products	Motors	Commissioning	employee	Existing	256.29	3	\$240.01	0%	0%	\$0.18	0.00	0.00	AEG Research
Stone Clay Glass Products	Process	Commissioning	employee	Existing	131.30	3	\$240.01	0%	0%	\$0.18	0.00	0.00	AEG Research
Stone Clay Glass Products	Miscellaneous	Commissioning	employee	Existing	23.56	3	\$240.01	0%	0%	\$0.18	0.00	0.00	AEG Research
Stone Clay Glass Products	Interior Lighting	Retrocommissioning	employee	Existing	14.20	3	\$152.36	10%	40%	\$0.12	0.10	0.18	AEG Research
Stone Clay Glass Products	Exterior Lighting	Retrocommissioning	employee	Existing	3.02	3	\$152.36	10%	40%	\$0.12	0.02	0.04	AEG Research
Stone Clay Glass Products	Motors	Retrocommissioning	employee	Existing	258.39	3	\$152.36	10%	40%	\$0.12	2.33	2.92	AEG Research
Stone Clay Glass Products	Process	Retrocommissioning	employee	Existing	132.40	3	\$152.36	10%	40%	\$0.12	1.23	1.48	AEG Research
Stone Clay Glass Products	Miscellaneous	Retrocommissioning	employee	Existing	23.78	3	\$152.36	10%	40%	\$0.12	0.28	0.26	AEG Research

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Stone Clay Glass Products	Motors	Municipal Sewage Treatment	employee	Existing	16.43	12	\$11.02	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Motors	Municipal Water Supply Treatment	employee	Existing	0.00	12	\$0.00	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Cooling	Insulation - Ceiling	sqft	New	0.10	45	\$1.28	15%	25%	\$0.18	0.00	0.00	Building Energy Simulation Tool
Stone Clay Glass Products	Heating	Insulation - Ceiling	sqft	New	0.43	45	\$1.28	15%	25%	\$0.18	0.02	0.02	Building Energy Simulation Tool
Stone Clay Glass Products	Ventilation	Insulation - Ceiling	sqft	New	0.01	45	\$1.28	15%	25%	\$0.18	0.00	0.00	Building Energy Simulation Tool
Stone Clay Glass Products	Cooling	Insulation - Ducting	sqft	New	0.04	20	\$0.84	15%	25%	\$1.32	0.00	0.00	Building Energy Simulation Tool
Stone Clay Glass Products	Heating	Insulation - Ducting	sqft	New	0.02	20	\$0.84	15%	25%	\$1.32	0.00	0.00	Building Energy Simulation Tool
Stone Clay Glass Products	Ventilation	Insulation - Ducting	sqft	New	0.00	20	\$0.84	15%	25%	\$1.32	0.00	0.00	Building Energy Simulation Tool
Stone Clay Glass Products	Cooling	Insulation - Wall Cavity	sqft	New	0.00	45	\$0.15	45%	50%	\$0.02	0.00	0.00	Building Energy Simulation Tool
Stone Clay Glass Products	Heating	Insulation - Wall Cavity	sqft	New	0.59	45	\$0.15	45%	50%	\$0.02	0.01	0.01	Building Energy Simulation Tool
Stone Clay Glass Products	Ventilation	Insulation - Wall Cavity	sqft	New	0.01	45	\$0.15	45%	50%	\$0.02	0.00	0.00	Building Energy Simulation Tool
Stone Clay Glass Products	Cooling	HVAC - Duct Repair and Sealing	sqft	New	0.01	18	\$0.00	15%	25%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Stone Clay Glass Products	Heating	HVAC - Duct Repair and Sealing	sqft	New	0.04	18	\$0.00	15%	25%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Stone Clay Glass Products	Ventilation	HVAC - Duct Repair and Sealing	sqft	New	0.00	18	\$0.00	15%	25%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Stone Clay Glass Products	Cooling	Chiller - Chilled Water Reset	sqft	New	0.03	10	\$0.01	15%	45%	\$0.04	0.00	0.00	AEG-BEST
Stone Clay Glass Products	Cooling	Chiller - Chilled Water Variable-Flow System	sqft	New	0.17	15	\$0.50	15%	60%	\$0.29	0.00	0.01	AEG-BEST
Stone Clay Glass Products	Cooling	Chiller - Variable Speed Fans	sqft	New	0.06	15	\$0.03	15%	75%	\$0.05	0.00	0.00	New Jersey TRM
Stone Clay Glass Products	Cooling	HVAC - Economizer	sqft	New	0.10	10	\$0.25	18%	30%	\$0.33	0.00	0.00	AEG-BEST
Stone Clay Glass Products	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.25	15%	35%	\$13.02	0.00	0.00	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Stone Clay Glass Products	Cooling	Destratification Fans (HVLS)	sqft	New	0.12	15	\$0.63	15%	50%	\$0.06	0.01	0.01	AEG Research
Stone Clay Glass Products	Heating	Destratification Fans (HVLS)	sqft	New	1.09	15	\$0.63	15%	50%	\$0.06	0.08	0.10	AEG Research
Stone Clay Glass Products	Cooling	RTU - Maintenance	sqft	New	0.06	3	\$0.07	15%	75%	\$0.33	0.00	0.00	AEG Research
Stone Clay Glass Products	Cooling	Thermostat - WiFi/Interactive	sqft	New	0.21	5	\$0.66	5%	15%	\$0.12	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Heating	Thermostat - WiFi/Interactive	sqft	New	0.96	5	\$0.66	5%	15%	\$0.12	0.00	0.01	7th Power Plan
Stone Clay Glass Products	Ventilation	Thermostat - WiFi/Interactive	sqft	New	0.02	5	\$0.66	5%	15%	\$0.12	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.16	15	\$0.35	22%	41%	\$0.17	0.09	0.12	7th Power Plan
Stone Clay Glass Products	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.22	15	\$0.58	22%	41%	\$0.20	0.12	0.17	7th Power Plan
Stone Clay Glass Products	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	New	0.02	15	\$0.00	1%	2%	\$0.01	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Interior Lighting	Interior Lighting - Timeclocks and Timers	sqft	New	0.00	8	\$0.00	7%	7%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Stone Clay Glass Products	Interior Lighting	Interior Lighting - Skylights	sqft	New	0.00	15	\$1.01	18%	24%	\$0.00	0.00	0.00	AEG Research
Stone Clay Glass Products	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	sqft	New	0.03	16	\$1.81	5%	40%	\$5.12	0.01	0.01	7th Power Plan
Stone Clay Glass Products	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	New	0.03	11	\$0.00	15%	50%	\$0.01	0.00	0.01	Illinois TRM
Stone Clay Glass Products	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	sqft	New	0.03	8	\$0.03	15%	25%	\$0.11	0.00	0.01	7th Power Plan
Stone Clay Glass Products	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	New	0.02	8	\$0.02	44%	60%	\$0.11	0.00	0.01	Pacific Gas and Electric Research
Stone Clay Glass Products	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	New	0.02	7	\$1.19	15%	30%	\$6.08	0.00	0.01	AEG Research
Stone Clay Glass Products	Process	Process - Conductivity Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Process	Process - Timers and Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Motors	Process - Timers and Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Stone Clay Glass Products	Process	Refrigeration - Floating Head Pressure	employee	New	9.08	15	\$7.48	20%	50%	\$0.09	0.01	0.01	RTF Workbook
Stone Clay Glass Products	Process	Refrigeration - System Optimization	employee	New	14.54	15	\$2.61	20%	50%	\$0.02	0.01	0.02	AEG Research
Stone Clay Glass Products	Motors	Pumping System - Equipment Upgrade	employee	New	127.93	10	\$21.93	9%	38%	\$0.06	0.09	0.11	7th Power Plan
Stone Clay Glass Products	Motors	Pumping System - System Optimization	employee	New	95.48	12	\$33.42	9%	38%	-\$0.03	0.10	0.12	UNIDO Study on Industrial Energy Efficiency
Stone Clay Glass Products	Motors	Pumping System - Variable Speed Drive	employee	New	95.12	10	\$34.77	9%	38%	\$0.05	0.09	0.11	UNIDO Study on Industrial Energy Efficiency
Stone Clay Glass Products	Motors	Fan System - Equipment Upgrade	employee	New	99.41	10	\$11.64	9%	38%	\$0.05	0.09	0.12	UNIDO Study on Industrial Energy Efficiency
Stone Clay Glass Products	Motors	Fan System - Flow Optimization	employee	New	117.27	10	\$19.26	9%	38%	\$0.02	0.11	0.14	UNIDO Study on Industrial Energy Efficiency
Stone Clay Glass Products	Motors	Fan System - Variable Speed Drive	employee	New	176.31	10	\$96.90	9%	38%	\$0.07	0.17	0.21	UNIDO Study on Industrial Energy Efficiency
Stone Clay Glass Products	Motors	Compressed Air - Equipment Upgrade	employee	New	57.06	10	\$4.98	17%	50%	\$0.04	0.05	0.06	7th Power Plan
Stone Clay Glass Products	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	New	0.00	15	\$0.00	16%	38%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Stone Clay Glass Products	Motors	Compressed Air - Refrigerated Cycling Dryers	employee	New	0.00	10	\$0.00	16%	30%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Stone Clay Glass Products	Motors	Compressed Air - System Controls	employee	New	12.88	10	\$3.56	9%	38%	\$0.00	0.01	0.01	UNIDO Study on Industrial Energy Efficiency
Stone Clay Glass Products	Motors	Compressed Air - Leak Management Program	employee	New	32.57	10	\$3.58	18%	75%	\$0.05	0.04	0.06	7th Power Plan
Stone Clay Glass Products	Motors	Compressed Air - Variable Speed Drive	employee	New	23.84	15	\$21.82	26%	45%	\$0.10	0.01	0.02	UNIDO Study on Industrial Energy Efficiency
Stone Clay Glass Products	Motors	Compressed Air - Low Pressure-Drop Filters	employee	New	0.79	10	\$0.34	17%	50%	\$0.06	0.00	0.00	Illinois TRM
Stone Clay Glass Products	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	New	4.84	10	\$1.09	17%	50%	\$0.03	0.00	0.00	UNIDO Study on Industrial Energy Efficiency
Stone Clay Glass Products	Motors	Compressed Air - Outside Air Intake	employee	New	0.00	20	\$0.00	17%	50%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Stone Clay Glass Products	Motors	Compressed Air - Receiver Capacity Addition	employee	New	4.82	15	\$3.00	17%	50%	\$0.07	0.01	0.01	UNIDO Study on Industrial Energy Efficiency
Stone Clay Glass Products	Motors	Material Handling - Variable Speed Drive	employee	New	690.68	10	\$287.13	25%	45%	\$0.06	0.45	0.56	7th Power Plan

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Stone Clay Glass Products	Motors	Motors - Green Rewind (<100 HP)	employee	New	9.68	10	\$4.88	10%	50%	\$0.07	0.06	0.08	7th Power Plan
Stone Clay Glass Products	Motors	Motors - Green Rewind (100 HP+)	employee	New	5.44	10	\$1.73	6%	25%	\$0.04	0.02	0.02	7th Power Plan
Stone Clay Glass Products	Motors	Switch from Belt Drive to Direct Drive	employee	New	82.12	12	\$21.40	16%	25%	\$0.03	0.14	0.17	2015-mdu-irp-report---volume-iii.pdf
Stone Clay Glass Products	Motors	Motors - Synchronous Belts	employee	New	21.80	10	\$6.44	16%	36%	\$0.04	0.05	0.07	7th Power Plan
Stone Clay Glass Products	Miscellaneous	Agriculture - Engine Block Timer	employee	New	191.65	3	\$2.83	0%	0%	\$0.01	0.00	0.00	Vermont TRM
Stone Clay Glass Products	Motors	Agriculture - Live Stock Waterer	employee	New	312.19	10	\$193.14	0%	0%	\$0.08	0.00	0.00	Ontario Power TRM
Stone Clay Glass Products	Process	Dairy - Milk Precoolers	employee	New	60.56	15	\$33.67	0%	0%	\$0.06	0.00	0.00	Ontario Power TRM
Stone Clay Glass Products	Process	Clean Room: Change Filter Strategy	employee	New	13.59	15	\$0.12	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Process	Clean Room: Chiller Optimize	employee	New	17.96	15	\$1.99	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Process	Clean Room: Clean Room HVAC	employee	New	10.90	15	\$2.41	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Process	Elec Chip Fab: Solidstate Chiller	employee	New	10.90	15	\$7.56	0%	0%	-\$0.08	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Process	Elec Chip Fab: Eliminate Exhaust	employee	New	1.70	15	\$0.43	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Process	Elec Chip Fab: Exhaust Injector	employee	New	3.40	15	\$2.09	0%	0%	-\$0.11	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Process	Elec Chip Fab: Reduce Gas Pressure	employee	New	3.40	15	\$0.04	0%	0%	-\$0.02	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Motors	Panel: Hydraulic Press	employee	New	1,036.30	10	\$286.96	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Motors	Wood: Replace Pneumatic Conveyor	employee	New	1,087.48	10	\$21.49	0%	0%	-\$0.07	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Process	Metal: New Arc Furnace	employee	New	888.13	10	\$111.82	0%	0%	-\$2.50	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Process	Paper: Premium Control Large Material	employee	New	99.31	10	\$59.61	0%	0%	\$0.08	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Process	Paper: Efficient Pulp Screen	employee	New	79.57	10	\$19.64	0%	0%	\$0.03	0.00	0.00	7th Power Plan

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Stone Clay Glass Products	Process	Kraft: Effluent Treatment System	employee	New	79.57	10	\$8.05	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Motors	Kraft: Efficient Agitator	employee	New	1,870.72	10	\$214.14	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Process	Mech Pulp: Premium Process	employee	New	0.89	5	\$0.14	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Motors	Mech Pulp: Refiner Plate Improvement	employee	New	16.24	1	\$0.82	0%	0%	\$0.05	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Cooling	Transformer - High Efficiency	employee	New	7.20	10	\$24.18	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Heating	Transformer - High Efficiency	employee	New	33.87	10	\$24.18	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Ventilation	Transformer - High Efficiency	employee	New	0.70	10	\$24.18	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Interior Lighting	Transformer - High Efficiency	employee	New	3.69	10	\$24.18	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Exterior Lighting	Transformer - High Efficiency	employee	New	0.80	10	\$24.18	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Motors	Transformer - High Efficiency	employee	New	80.33	10	\$24.18	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Process	Transformer - High Efficiency	employee	New	39.77	10	\$24.18	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Miscellaneous	Transformer - High Efficiency	employee	New	6.77	10	\$24.18	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Cooling	Strategic Energy Management	employee	New	20.45	3	\$148.48	0%	0%	\$0.10	0.00	0.00	AEG Research
Stone Clay Glass Products	Heating	Strategic Energy Management	employee	New	97.56	3	\$148.48	0%	0%	\$0.10	0.00	0.00	AEG Research
Stone Clay Glass Products	Ventilation	Strategic Energy Management	employee	New	2.03	3	\$148.48	0%	0%	\$0.10	0.00	0.00	AEG Research
Stone Clay Glass Products	Interior Lighting	Strategic Energy Management	employee	New	10.66	3	\$148.48	0%	0%	\$0.10	0.00	0.00	AEG Research
Stone Clay Glass Products	Exterior Lighting	Strategic Energy Management	employee	New	2.32	3	\$148.48	0%	0%	\$0.10	0.00	0.00	AEG Research
Stone Clay Glass Products	Motors	Strategic Energy Management	employee	New	232.08	3	\$148.48	0%	0%	\$0.10	0.00	0.00	AEG Research
Stone Clay Glass Products	Process	Strategic Energy Management	employee	New	114.89	3	\$148.48	0%	0%	\$0.10	0.00	0.00	AEG Research

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Stone Clay Glass Products	Miscellaneous	Strategic Energy Management	employee	New	19.55	3	\$148.48	0%	0%	\$0.10	0.00	0.00	AEG Research
Stone Clay Glass Products	Interior Lighting	Commissioning	employee	New	12.27	3	\$239.33	10%	40%	\$0.18	0.00	0.00	AEG Research
Stone Clay Glass Products	Exterior Lighting	Commissioning	employee	New	2.67	3	\$239.33	10%	40%	\$0.18	0.00	0.00	AEG Research
Stone Clay Glass Products	Motors	Commissioning	employee	New	267.78	3	\$239.33	10%	40%	\$0.18	0.02	0.03	AEG Research
Stone Clay Glass Products	Process	Commissioning	employee	New	132.57	3	\$239.33	10%	40%	\$0.18	0.01	0.01	AEG Research
Stone Clay Glass Products	Miscellaneous	Commissioning	employee	New	22.56	3	\$239.33	10%	40%	\$0.18	0.00	0.00	AEG Research
Stone Clay Glass Products	Interior Lighting	Retrocommissioning	employee	New	12.30	3	\$151.93	0%	0%	\$0.12	0.00	0.00	AEG Research
Stone Clay Glass Products	Exterior Lighting	Retrocommissioning	employee	New	2.67	3	\$151.93	0%	0%	\$0.12	0.00	0.00	AEG Research
Stone Clay Glass Products	Motors	Retrocommissioning	employee	New	267.78	3	\$151.93	0%	0%	\$0.12	0.00	0.00	AEG Research
Stone Clay Glass Products	Process	Retrocommissioning	employee	New	132.57	3	\$151.93	0%	0%	\$0.12	0.00	0.00	AEG Research
Stone Clay Glass Products	Miscellaneous	Retrocommissioning	employee	New	22.56	3	\$151.93	0%	0%	\$0.12	0.00	0.00	AEG Research
Stone Clay Glass Products	Motors	Municipal Sewage Treatment	employee	New	16.95	12	\$11.02	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Motors	Municipal Water Supply Treatment	employee	New	0.00	12	\$0.00	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Cooling	Insulation - Ceiling	sqft	Existing	0.10	45	\$1.28	15%	25%	\$0.17	0.57	0.73	Building Energy Simulation Tool
Transportation Equipment Mfg	Heating	Insulation - Ceiling	sqft	Existing	0.45	45	\$1.28	15%	25%	\$0.17	2.28	2.84	Building Energy Simulation Tool
Transportation Equipment Mfg	Ventilation	Insulation - Ceiling	sqft	Existing	0.01	45	\$1.28	15%	25%	\$0.17	0.38	0.55	Building Energy Simulation Tool
Transportation Equipment Mfg	Cooling	Insulation - Ducting	sqft	Existing	0.04	20	\$0.84	15%	25%	\$1.23	0.20	0.27	Building Energy Simulation Tool
Transportation Equipment Mfg	Heating	Insulation - Ducting	sqft	Existing	0.02	20	\$0.84	15%	25%	\$1.23	0.09	0.12	Building Energy Simulation Tool
Transportation Equipment Mfg	Ventilation	Insulation - Ducting	sqft	Existing	0.00	20	\$0.84	15%	25%	\$1.23	0.02	0.02	Building Energy Simulation Tool

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Transportation Equipment Mfg	Cooling	Insulation - Wall Cavity	sqft	Existing	0.00	45	\$0.15	45%	50%	\$0.02	0.00	0.01	Building Energy Simulation Tool
Transportation Equipment Mfg	Heating	Insulation - Wall Cavity	sqft	Existing	0.64	45	\$0.15	45%	50%	\$0.02	1.64	1.98	Building Energy Simulation Tool
Transportation Equipment Mfg	Ventilation	Insulation - Wall Cavity	sqft	Existing	0.02	45	\$0.15	45%	50%	\$0.02	0.26	0.37	Building Energy Simulation Tool
Transportation Equipment Mfg	Cooling	HVAC - Duct Repair and Sealing	sqft	Existing	0.01	18	\$0.00	15%	25%	\$0.00	0.08	0.10	Building Energy Simulation Tool
Transportation Equipment Mfg	Heating	HVAC - Duct Repair and Sealing	sqft	Existing	0.04	18	\$0.00	15%	25%	\$0.00	0.23	0.28	Building Energy Simulation Tool
Transportation Equipment Mfg	Ventilation	HVAC - Duct Repair and Sealing	sqft	Existing	0.00	18	\$0.00	15%	25%	\$0.00	0.04	0.05	Building Energy Simulation Tool
Transportation Equipment Mfg	Cooling	Chiller - Chilled Water Reset	sqft	Existing	0.04	10	\$0.01	15%	45%	\$0.03	0.18	0.26	AEG-BEST
Transportation Equipment Mfg	Cooling	Chiller - Chilled Water Variable-Flow System	sqft	Existing	0.21	15	\$0.50	15%	60%	\$0.24	1.45	2.11	AEG-BEST
Transportation Equipment Mfg	Cooling	Chiller - Variable Speed Fans	sqft	Existing	0.08	15	\$0.03	15%	75%	\$0.04	0.74	1.05	New Jersey TRM
Transportation Equipment Mfg	Cooling	HVAC - Economizer	sqft	Existing	0.10	10	\$0.25	18%	30%	\$0.30	0.72	1.05	AEG-BEST
Transportation Equipment Mfg	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.25	15%	35%	\$11.12	0.13	0.21	7th Power Plan
Transportation Equipment Mfg	Cooling	Destratification Fans (HVLS)	sqft	Existing	0.13	15	\$0.63	15%	50%	\$0.05	2.80	3.94	AEG Research
Transportation Equipment Mfg	Heating	Destratification Fans (HVLS)	sqft	Existing	1.16	15	\$0.63	15%	50%	\$0.05	22.58	29.51	AEG Research
Transportation Equipment Mfg	Cooling	RTU - Maintenance	sqft	Existing	0.07	3	\$0.07	15%	75%	\$0.32	1.51	2.30	AEG Research
Transportation Equipment Mfg	Cooling	Thermostat - WiFi/Interactive	sqft	Existing	0.22	5	\$0.66	5%	15%	\$0.11	1.21	1.59	7th Power Plan
Transportation Equipment Mfg	Heating	Thermostat - WiFi/Interactive	sqft	Existing	0.99	5	\$0.66	5%	15%	\$0.11	5.02	6.27	7th Power Plan
Transportation Equipment Mfg	Ventilation	Thermostat - WiFi/Interactive	sqft	Existing	0.03	5	\$0.66	5%	15%	\$0.11	0.84	1.22	7th Power Plan
Transportation Equipment Mfg	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.18	15	\$0.35	7%	33%	\$0.17	9.28	13.94	7th Power Plan
Transportation Equipment Mfg	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.25	15	\$0.58	7%	33%	\$0.20	12.31	19.10	7th Power Plan

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Transportation Equipment Mfg	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	Existing	0.02	15	\$0.00	1%	2%	\$0.01	0.05	0.09	7th Power Plan
Transportation Equipment Mfg	Interior Lighting	Interior Lighting - Timeclocks and Timers	sqft	Existing	0.00	8	\$0.00	7%	7%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Transportation Equipment Mfg	Interior Lighting	Interior Lighting - Skylights	sqft	Existing	0.00	15	\$1.01	15%	23%	\$0.00	0.00	0.00	AEG Research
Transportation Equipment Mfg	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	sqft	Existing	0.03	16	\$1.81	5%	40%	\$5.03	1.37	2.91	7th Power Plan
Transportation Equipment Mfg	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	Existing	0.03	11	\$0.00	15%	50%	\$0.01	1.56	2.92	Illinois TRM
Transportation Equipment Mfg	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	sqft	Existing	0.04	8	\$0.03	15%	25%	\$0.10	1.83	3.63	7th Power Plan
Transportation Equipment Mfg	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	Existing	0.02	8	\$0.02	33%	60%	\$0.11	2.54	5.19	Pacific Gas and Electric Research
Transportation Equipment Mfg	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	Existing	0.03	7	\$1.19	15%	30%	\$5.85	1.58	3.43	AEG Research
Transportation Equipment Mfg	Process	Process - Conductivity Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Process	Process - Timers and Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Motors	Process - Timers and Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Process	Refrigeration - Floating Head Pressure	employee	Existing	24.77	15	\$28.94	20%	50%	\$0.13	1.76	2.28	RTF Workbook
Transportation Equipment Mfg	Process	Refrigeration - System Optimization	employee	Existing	39.77	15	\$20.38	20%	50%	\$0.06	2.82	3.66	AEG Research
Transportation Equipment Mfg	Motors	Pumping System - Equipment Upgrade	employee	Existing	104.64	10	\$18.36	9%	38%	\$0.06	7.05	9.35	7th Power Plan
Transportation Equipment Mfg	Motors	Pumping System - System Optimization	employee	Existing	77.48	12	\$27.98	9%	38%	-\$0.03	5.06	6.56	UNIDO Study on Industrial Energy Efficiency
Transportation Equipment Mfg	Motors	Pumping System - Variable Speed Drive	employee	Existing	76.57	10	\$29.11	9%	38%	\$0.05	4.98	6.51	UNIDO Study on Industrial Energy Efficiency
Transportation Equipment Mfg	Motors	Fan System - Equipment Upgrade	employee	Existing	27.57	10	\$3.31	9%	38%	\$0.05	1.81	2.32	UNIDO Study on Industrial Energy Efficiency
Transportation Equipment Mfg	Motors	Fan System - Flow Optimization	employee	Existing	32.54	10	\$5.47	9%	38%	\$0.02	2.14	2.74	UNIDO Study on Industrial Energy Efficiency
Transportation Equipment Mfg	Motors	Fan System - Variable Speed Drive	employee	Existing	47.41	10	\$27.53	9%	38%	\$0.07	3.04	4.07	UNIDO Study on Industrial Energy Efficiency

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Transportation Equipment Mfg	Motors	Compressed Air - Equipment Upgrade	employee	Existing	190.51	10	\$16.62	17%	50%	\$0.04	15.11	19.60	7th Power Plan
Transportation Equipment Mfg	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	Existing	0.00	15	\$0.00	16%	38%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Transportation Equipment Mfg	Motors	Compressed Air - Refrigerated Cycling Dryers	employee	Existing	0.00	10	\$0.00	16%	30%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Transportation Equipment Mfg	Motors	Compressed Air - System Controls	employee	Existing	41.57	10	\$11.88	9%	38%	\$0.00	2.78	3.75	UNIDO Study on Industrial Energy Efficiency
Transportation Equipment Mfg	Motors	Compressed Air - Leak Management Program	employee	Existing	107.43	10	\$11.94	18%	75%	\$0.05	14.55	19.06	7th Power Plan
Transportation Equipment Mfg	Motors	Compressed Air - Variable Speed Drive	employee	Existing	75.65	15	\$72.84	26%	45%	\$0.10	3.33	4.62	UNIDO Study on Industrial Energy Efficiency
Transportation Equipment Mfg	Motors	Compressed Air - Low Pressure-Drop Filters	employee	Existing	2.52	10	\$1.12	17%	50%	\$0.06	0.19	0.27	Illinois TRM
Transportation Equipment Mfg	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	Existing	15.67	10	\$3.64	17%	50%	\$0.03	1.23	1.64	UNIDO Study on Industrial Energy Efficiency
Transportation Equipment Mfg	Motors	Compressed Air - Outside Air Intake	employee	Existing	0.00	20	\$0.00	17%	50%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Transportation Equipment Mfg	Motors	Compressed Air - Receiver Capacity Addition	employee	Existing	15.49	15	\$10.02	17%	50%	\$0.07	1.21	1.63	UNIDO Study on Industrial Energy Efficiency
Transportation Equipment Mfg	Motors	Material Handling - Variable Speed Drive	employee	Existing	464.49	10	\$201.30	25%	45%	\$0.06	21.14	27.75	7th Power Plan
Transportation Equipment Mfg	Motors	Motors - Green Rewind (<100 HP)	employee	Existing	6.71	10	\$3.56	10%	50%	\$0.07	3.03	4.04	7th Power Plan
Transportation Equipment Mfg	Motors	Motors - Green Rewind (100 HP+)	employee	Existing	3.83	10	\$1.27	6%	25%	\$0.04	0.83	1.08	7th Power Plan
Transportation Equipment Mfg	Motors	Switch from Belt Drive to Direct Drive	employee	Existing	58.42	12	\$15.65	16%	25%	\$0.03	6.37	8.22	2015-mdu-irp-report---volume-iii.pdf
Transportation Equipment Mfg	Motors	Motors - Synchronous Belts	employee	Existing	15.38	10	\$4.71	16%	36%	\$0.04	3.60	4.86	7th Power Plan
Transportation Equipment Mfg	Miscellaneous	Agriculture - Engine Block Timer	employee	Existing	402.27	3	\$5.95	0%	0%	\$0.01	0.00	0.00	Vermont TRM
Transportation Equipment Mfg	Motors	Agriculture - Live Stock Waterer	employee	Existing	247.54	10	\$161.68	0%	0%	\$0.08	0.00	0.00	Ontario Power TRM
Transportation Equipment Mfg	Process	Dairy - Milk Precoolers	employee	Existing	165.12	15	\$92.08	0%	0%	\$0.06	0.00	0.00	Ontario Power TRM
Transportation Equipment Mfg	Process	Clean Room: Change Filter Strategy	employee	Existing	72.06	15	\$0.64	0%	0%	\$0.00	0.00	0.00	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Transportation Equipment Mfg	Process	Clean Room: Chiller Optimize	employee	Existing	49.13	15	\$5.45	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Process	Clean Room: Clean Room HVAC	employee	Existing	29.83	15	\$6.58	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Process	Elec Chip Fab: Solidstate Chiller	employee	Existing	29.72	15	\$20.67	0%	0%	-\$0.08	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Process	Elec Chip Fab: Eliminate Exhaust	employee	Existing	9.01	15	\$2.29	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Process	Elec Chip Fab: Exhaust Injector	employee	Existing	17.95	15	\$11.06	0%	0%	-\$0.11	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Process	Elec Chip Fab: Reduce Gas Pressure	employee	Existing	18.01	15	\$0.22	0%	0%	-\$0.02	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Motors	Panel: Hydraulic Press	employee	Existing	702.76	10	\$201.18	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Motors	Wood: Replace Pneumatic Conveyor	employee	Existing	762.40	10	\$15.07	0%	0%	-\$0.07	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Process	Metal: New Arc Furnace	employee	Existing	675.70	10	\$85.02	0%	0%	-\$2.50	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Process	Paper: Premium Control Large Material	employee	Existing	102.36	10	\$61.74	0%	0%	\$0.08	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Process	Paper: Efficient Pulp Screen	employee	Existing	82.47	10	\$20.34	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Process	Kraft: Effluent Treatment System	employee	Existing	82.47	10	\$8.34	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Motors	Kraft: Efficient Agitator	employee	Existing	1,280.41	10	\$150.12	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Process	Mech Pulp: Premium Process	employee	Existing	0.92	5	\$0.14	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Motors	Mech Pulp: Refiner Plate Improvement	employee	Existing	10.78	1	\$0.57	0%	0%	\$0.05	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Cooling	Transformer - High Efficiency	employee	Existing	28.59	10	\$41.84	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Heating	Transformer - High Efficiency	employee	Existing	127.82	10	\$41.84	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Ventilation	Transformer - High Efficiency	employee	Existing	3.64	10	\$41.84	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Interior Lighting	Transformer - High Efficiency	employee	Existing	13.78	10	\$41.84	15%	15%	\$0.02	0.00	0.00	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Transportation Equipment Mfg	Exterior Lighting	Transformer - High Efficiency	employee	Existing	2.93	10	\$41.84	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Motors	Transformer - High Efficiency	employee	Existing	55.63	10	\$41.84	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Process	Transformer - High Efficiency	employee	Existing	40.99	10	\$41.84	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Miscellaneous	Transformer - High Efficiency	employee	Existing	14.97	10	\$41.84	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Cooling	Strategic Energy Management	employee	Existing	78.52	3	\$256.99	0%	5%	\$0.10	0.15	0.20	AEG Research
Transportation Equipment Mfg	Heating	Strategic Energy Management	employee	Existing	365.88	3	\$256.99	0%	5%	\$0.10	0.65	0.82	AEG Research
Transportation Equipment Mfg	Ventilation	Strategic Energy Management	employee	Existing	10.42	3	\$256.99	0%	5%	\$0.10	0.11	0.16	AEG Research
Transportation Equipment Mfg	Interior Lighting	Strategic Energy Management	employee	Existing	39.25	3	\$256.99	0%	5%	\$0.10	0.33	0.58	AEG Research
Transportation Equipment Mfg	Exterior Lighting	Strategic Energy Management	employee	Existing	8.40	3	\$256.99	0%	5%	\$0.10	0.07	0.13	AEG Research
Transportation Equipment Mfg	Motors	Strategic Energy Management	employee	Existing	159.24	3	\$256.99	0%	5%	\$0.10	1.68	2.14	AEG Research
Transportation Equipment Mfg	Process	Strategic Energy Management	employee	Existing	117.31	3	\$256.99	0%	5%	\$0.10	1.28	1.56	AEG Research
Transportation Equipment Mfg	Miscellaneous	Strategic Energy Management	employee	Existing	42.81	3	\$256.99	0%	5%	\$0.10	0.60	0.56	AEG Research
Transportation Equipment Mfg	Interior Lighting	Commissioning	employee	Existing	45.25	3	\$232.22	0%	0%	\$0.18	0.00	0.00	AEG Research
Transportation Equipment Mfg	Exterior Lighting	Commissioning	employee	Existing	9.69	3	\$232.22	0%	0%	\$0.18	0.00	0.00	AEG Research
Transportation Equipment Mfg	Motors	Commissioning	employee	Existing	183.53	3	\$232.22	0%	0%	\$0.18	0.00	0.00	AEG Research
Transportation Equipment Mfg	Process	Commissioning	employee	Existing	135.20	3	\$232.22	0%	0%	\$0.18	0.00	0.00	AEG Research
Transportation Equipment Mfg	Miscellaneous	Commissioning	employee	Existing	49.33	3	\$232.22	0%	0%	\$0.18	0.00	0.00	AEG Research
Transportation Equipment Mfg	Interior Lighting	Retrocommissioning	employee	Existing	45.95	3	\$147.42	5%	39%	\$0.11	2.65	4.61	AEG Research
Transportation Equipment Mfg	Exterior Lighting	Retrocommissioning	employee	Existing	9.77	3	\$147.42	5%	39%	\$0.11	0.58	1.00	AEG Research

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Transportation Equipment Mfg	Motors	Retrocommissioning	employee	Existing	185.44	3	\$147.42	5%	39%	\$0.11	13.43	16.95	AEG Research
Transportation Equipment Mfg	Process	Retrocommissioning	employee	Existing	136.65	3	\$147.42	5%	39%	\$0.11	10.21	12.30	AEG Research
Transportation Equipment Mfg	Miscellaneous	Retrocommissioning	employee	Existing	49.91	3	\$147.42	5%	39%	\$0.11	4.81	4.42	AEG Research
Transportation Equipment Mfg	Motors	Municipal Sewage Treatment	employee	Existing	13.45	12	\$9.23	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Motors	Municipal Water Supply Treatment	employee	Existing	0.00	12	\$0.00	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Cooling	Insulation - Ceiling	sqft	New	0.09	45	\$1.28	15%	25%	\$0.18	0.09	0.10	Building Energy Simulation Tool
Transportation Equipment Mfg	Heating	Insulation - Ceiling	sqft	New	0.44	45	\$1.28	15%	25%	\$0.18	0.37	0.41	Building Energy Simulation Tool
Transportation Equipment Mfg	Ventilation	Insulation - Ceiling	sqft	New	0.01	45	\$1.28	15%	25%	\$0.18	0.05	0.06	Building Energy Simulation Tool
Transportation Equipment Mfg	Cooling	Insulation - Ducting	sqft	New	0.04	20	\$0.84	15%	25%	\$1.32	0.03	0.04	Building Energy Simulation Tool
Transportation Equipment Mfg	Heating	Insulation - Ducting	sqft	New	0.02	20	\$0.84	15%	25%	\$1.32	0.02	0.02	Building Energy Simulation Tool
Transportation Equipment Mfg	Ventilation	Insulation - Ducting	sqft	New	0.00	20	\$0.84	15%	25%	\$1.32	0.00	0.00	Building Energy Simulation Tool
Transportation Equipment Mfg	Cooling	Insulation - Wall Cavity	sqft	New	0.00	45	\$0.15	45%	50%	\$0.02	0.00	0.00	Building Energy Simulation Tool
Transportation Equipment Mfg	Heating	Insulation - Wall Cavity	sqft	New	0.59	45	\$0.15	45%	50%	\$0.02	0.25	0.28	Building Energy Simulation Tool
Transportation Equipment Mfg	Ventilation	Insulation - Wall Cavity	sqft	New	0.01	45	\$0.15	45%	50%	\$0.02	0.03	0.04	Building Energy Simulation Tool
Transportation Equipment Mfg	Cooling	HVAC - Duct Repair and Sealing	sqft	New	0.01	18	\$0.00	15%	25%	\$0.00	0.01	0.01	Building Energy Simulation Tool
Transportation Equipment Mfg	Heating	HVAC - Duct Repair and Sealing	sqft	New	0.04	18	\$0.00	15%	25%	\$0.00	0.03	0.04	Building Energy Simulation Tool
Transportation Equipment Mfg	Ventilation	HVAC - Duct Repair and Sealing	sqft	New	0.00	18	\$0.00	15%	25%	\$0.00	0.00	0.01	Building Energy Simulation Tool
Transportation Equipment Mfg	Cooling	Chiller - Chilled Water Reset	sqft	New	0.03	10	\$0.01	15%	45%	\$0.04	0.01	0.01	AEG-BEST
Transportation Equipment Mfg	Cooling	Chiller - Chilled Water Variable-Flow System	sqft	New	0.17	15	\$0.50	15%	60%	\$0.29	0.09	0.12	AEG-BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Transportation Equipment Mfg	Cooling	Chiller - Variable Speed Fans	sqft	New	0.06	15	\$0.03	15%	75%	\$0.05	0.05	0.06	New Jersey TRM
Transportation Equipment Mfg	Cooling	HVAC - Economizer	sqft	New	0.09	10	\$0.25	18%	30%	\$0.33	0.04	0.05	AEG-BEST
Transportation Equipment Mfg	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.25	15%	35%	\$12.99	0.01	0.01	7th Power Plan
Transportation Equipment Mfg	Cooling	Destratification Fans (HVLS)	sqft	New	0.12	15	\$0.63	15%	50%	\$0.06	0.19	0.25	AEG Research
Transportation Equipment Mfg	Heating	Destratification Fans (HVLS)	sqft	New	1.09	15	\$0.63	15%	50%	\$0.06	1.58	1.97	AEG Research
Transportation Equipment Mfg	Cooling	RTU - Maintenance	sqft	New	0.06	3	\$0.07	15%	75%	\$0.33	0.02	0.03	AEG Research
Transportation Equipment Mfg	Cooling	Thermostat - WiFi/Interactive	sqft	New	0.21	5	\$0.66	5%	15%	\$0.12	0.03	0.03	7th Power Plan
Transportation Equipment Mfg	Heating	Thermostat - WiFi/Interactive	sqft	New	0.96	5	\$0.66	5%	15%	\$0.12	0.11	0.14	7th Power Plan
Transportation Equipment Mfg	Ventilation	Thermostat - WiFi/Interactive	sqft	New	0.02	5	\$0.66	5%	15%	\$0.12	0.01	0.02	7th Power Plan
Transportation Equipment Mfg	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.15	15	\$0.35	22%	41%	\$0.17	1.93	2.64	7th Power Plan
Transportation Equipment Mfg	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.20	15	\$0.58	22%	41%	\$0.20	2.61	3.61	7th Power Plan
Transportation Equipment Mfg	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	New	0.02	15	\$0.00	1%	2%	\$0.01	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Interior Lighting	Interior Lighting - Timerclocks and Timers	sqft	New	0.00	8	\$0.00	7%	7%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Transportation Equipment Mfg	Interior Lighting	Interior Lighting - Skylights	sqft	New	0.00	15	\$1.01	18%	24%	\$0.00	0.00	0.00	AEG Research
Transportation Equipment Mfg	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	sqft	New	0.02	16	\$1.81	5%	40%	\$5.13	0.10	0.17	7th Power Plan
Transportation Equipment Mfg	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	New	0.02	11	\$0.00	15%	50%	\$0.01	0.09	0.15	Illinois TRM
Transportation Equipment Mfg	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	sqft	New	0.03	8	\$0.03	15%	25%	\$0.11	0.07	0.14	7th Power Plan
Transportation Equipment Mfg	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	New	0.02	8	\$0.02	44%	60%	\$0.11	0.06	0.11	Pacific Gas and Electric Research
Transportation Equipment Mfg	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	New	0.02	7	\$1.19	15%	30%	\$6.11	0.06	0.12	AEG Research

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Transportation Equipment Mfg	Process	Process - Conductivity Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Process	Process - Timers and Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Motors	Process - Timers and Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Process	Refrigeration - Floating Head Pressure	employee	New	24.82	15	\$20.45	20%	50%	\$0.09	0.13	0.16	RTF Workbook
Transportation Equipment Mfg	Process	Refrigeration - System Optimization	employee	New	39.77	15	\$7.15	20%	50%	\$0.02	0.21	0.26	AEG Research
Transportation Equipment Mfg	Motors	Pumping System - Equipment Upgrade	employee	New	106.63	10	\$18.36	9%	38%	\$0.06	0.41	0.52	7th Power Plan
Transportation Equipment Mfg	Motors	Pumping System - System Optimization	employee	New	79.58	12	\$27.98	9%	38%	-\$0.03	0.50	0.61	UNIDO Study on Industrial Energy Efficiency
Transportation Equipment Mfg	Motors	Pumping System - Variable Speed Drive	employee	New	79.21	10	\$29.11	9%	38%	\$0.05	0.46	0.56	UNIDO Study on Industrial Energy Efficiency
Transportation Equipment Mfg	Motors	Fan System - Equipment Upgrade	employee	New	28.05	10	\$3.31	9%	38%	\$0.05	0.16	0.20	UNIDO Study on Industrial Energy Efficiency
Transportation Equipment Mfg	Motors	Fan System - Flow Optimization	employee	New	33.13	10	\$5.47	9%	38%	\$0.02	0.19	0.23	UNIDO Study on Industrial Energy Efficiency
Transportation Equipment Mfg	Motors	Fan System - Variable Speed Drive	employee	New	49.83	10	\$27.53	9%	38%	\$0.07	0.29	0.35	UNIDO Study on Industrial Energy Efficiency
Transportation Equipment Mfg	Motors	Compressed Air - Equipment Upgrade	employee	New	190.51	10	\$16.62	17%	50%	\$0.04	0.85	1.08	7th Power Plan
Transportation Equipment Mfg	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	New	0.00	15	\$0.00	16%	38%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Transportation Equipment Mfg	Motors	Compressed Air - Refrigerated Cycling Dryers	employee	New	0.00	10	\$0.00	16%	30%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Transportation Equipment Mfg	Motors	Compressed Air - System Controls	employee	New	42.79	10	\$11.88	9%	38%	\$0.00	0.16	0.21	UNIDO Study on Industrial Energy Efficiency
Transportation Equipment Mfg	Motors	Compressed Air - Leak Management Program	employee	New	108.36	10	\$11.94	18%	75%	\$0.05	0.83	1.05	7th Power Plan
Transportation Equipment Mfg	Motors	Compressed Air - Variable Speed Drive	employee	New	79.23	15	\$72.84	26%	45%	\$0.10	0.27	0.33	UNIDO Study on Industrial Energy Efficiency
Transportation Equipment Mfg	Motors	Compressed Air - Low Pressure-Drop Filters	employee	New	2.64	10	\$1.12	17%	50%	\$0.06	0.01	0.02	Illinois TRM
Transportation Equipment Mfg	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	New	16.08	10	\$3.64	17%	50%	\$0.03	0.07	0.09	UNIDO Study on Industrial Energy Efficiency

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Transportation Equipment Mfg	Motors	Compressed Air - Outside Air Intake	employee	New	0.00	20	\$0.00	17%	50%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Transportation Equipment Mfg	Motors	Compressed Air - Receiver Capacity Addition	employee	New	16.01	15	\$10.02	17%	50%	\$0.07	0.09	0.12	UNIDO Study on Industrial Energy Efficiency
Transportation Equipment Mfg	Motors	Material Handling - Variable Speed Drive	employee	New	481.60	10	\$201.30	25%	45%	\$0.06	1.95	2.39	7th Power Plan
Transportation Equipment Mfg	Motors	Motors - Green Rewind (<100 HP)	employee	New	7.04	10	\$3.56	10%	50%	\$0.07	0.29	0.35	7th Power Plan
Transportation Equipment Mfg	Motors	Motors - Green Rewind (100 HP+)	employee	New	3.96	10	\$1.27	6%	25%	\$0.04	0.08	0.09	7th Power Plan
Transportation Equipment Mfg	Motors	Switch from Belt Drive to Direct Drive	employee	New	59.78	12	\$15.65	16%	25%	\$0.03	0.62	0.76	2015-mdu-irp-report---volume-iii.pdf
Transportation Equipment Mfg	Motors	Motors - Synchronous Belts	employee	New	15.85	10	\$4.71	16%	36%	\$0.04	0.21	0.27	7th Power Plan
Transportation Equipment Mfg	Miscellaneous	Agriculture - Engine Block Timer	employee	New	402.27	3	\$5.95	0%	0%	\$0.01	0.00	0.00	Vermont TRM
Transportation Equipment Mfg	Motors	Agriculture - Live Stock Waterer	employee	New	260.53	10	\$161.68	0%	0%	\$0.08	0.00	0.00	Ontario Power TRM
Transportation Equipment Mfg	Process	Dairy - Milk Precoolers	employee	New	165.49	15	\$92.08	0%	0%	\$0.06	0.00	0.00	Ontario Power TRM
Transportation Equipment Mfg	Process	Clean Room: Change Filter Strategy	employee	New	72.06	15	\$0.64	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Process	Clean Room: Chiller Optimize	employee	New	49.13	15	\$5.45	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Process	Clean Room: Clean Room HVAC	employee	New	29.79	15	\$6.58	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Process	Elec Chip Fab: Solidstate Chiller	employee	New	29.79	15	\$20.67	0%	0%	-\$0.08	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Process	Elec Chip Fab: Eliminate Exhaust	employee	New	8.99	15	\$2.29	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Process	Elec Chip Fab: Exhaust Injector	employee	New	17.99	15	\$11.06	0%	0%	-\$0.11	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Process	Elec Chip Fab: Reduce Gas Pressure	employee	New	18.01	15	\$0.22	0%	0%	-\$0.02	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Motors	Panel: Hydraulic Press	employee	New	723.40	10	\$201.18	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Motors	Wood: Replace Pneumatic Conveyor	employee	New	762.40	10	\$15.07	0%	0%	-\$0.07	0.00	0.00	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Transportation Equipment Mfg	Process	Metal: New Arc Furnace	employee	New	674.78	10	\$85.02	0%	0%	-\$2.50	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Process	Paper: Premium Control Large Material	employee	New	102.74	10	\$61.74	0%	0%	\$0.08	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Process	Paper: Efficient Pulp Screen	employee	New	82.36	10	\$20.34	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Process	Kraft: Effluent Treatment System	employee	New	82.36	10	\$8.34	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Motors	Kraft: Efficient Agitator	employee	New	1,302.53	10	\$150.12	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Process	Mech Pulp: Premium Process	employee	New	0.92	5	\$0.14	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Motors	Mech Pulp: Refiner Plate Improvement	employee	New	11.35	1	\$0.57	0%	0%	\$0.05	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Cooling	Transformer - High Efficiency	employee	New	25.92	10	\$39.99	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Heating	Transformer - High Efficiency	employee	New	124.07	10	\$39.99	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Ventilation	Transformer - High Efficiency	employee	New	2.36	10	\$39.99	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Interior Lighting	Transformer - High Efficiency	employee	New	11.18	10	\$39.99	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Exterior Lighting	Transformer - High Efficiency	employee	New	2.40	10	\$39.99	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Motors	Transformer - High Efficiency	employee	New	58.55	10	\$39.99	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Process	Transformer - High Efficiency	employee	New	41.14	10	\$39.99	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Miscellaneous	Transformer - High Efficiency	employee	New	14.21	10	\$39.99	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Cooling	Strategic Energy Management	employee	New	73.81	3	\$245.63	0%	5%	\$0.10	0.00	0.00	AEG Research
Transportation Equipment Mfg	Heating	Strategic Energy Management	employee	New	357.38	3	\$245.63	0%	5%	\$0.10	0.00	0.01	AEG Research
Transportation Equipment Mfg	Ventilation	Strategic Energy Management	employee	New	6.78	3	\$245.63	0%	5%	\$0.10	0.00	0.00	AEG Research
Transportation Equipment Mfg	Interior Lighting	Strategic Energy Management	employee	New	32.30	3	\$245.63	0%	5%	\$0.10	0.00	0.00	AEG Research

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Transportation Equipment Mfg	Exterior Lighting	Strategic Energy Management	employee	New	6.92	3	\$245.63	0%	5%	\$0.10	0.00	0.00	AEG Research
Transportation Equipment Mfg	Motors	Strategic Energy Management	employee	New	169.15	3	\$245.63	0%	5%	\$0.10	0.01	0.02	AEG Research
Transportation Equipment Mfg	Process	Strategic Energy Management	employee	New	118.86	3	\$245.63	0%	5%	\$0.10	0.01	0.01	AEG Research
Transportation Equipment Mfg	Miscellaneous	Strategic Energy Management	employee	New	41.05	3	\$245.63	0%	5%	\$0.10	0.00	0.00	AEG Research
Transportation Equipment Mfg	Interior Lighting	Commissioning	employee	New	37.16	3	\$230.02	5%	39%	\$0.18	0.02	0.04	AEG Research
Transportation Equipment Mfg	Exterior Lighting	Commissioning	employee	New	7.98	3	\$230.02	5%	39%	\$0.18	0.00	0.01	AEG Research
Transportation Equipment Mfg	Motors	Commissioning	employee	New	195.13	3	\$230.02	5%	39%	\$0.18	0.11	0.15	AEG Research
Transportation Equipment Mfg	Process	Commissioning	employee	New	137.12	3	\$230.02	5%	39%	\$0.18	0.08	0.10	AEG Research
Transportation Equipment Mfg	Miscellaneous	Commissioning	employee	New	47.35	3	\$230.02	5%	39%	\$0.18	0.03	0.03	AEG Research
Transportation Equipment Mfg	Interior Lighting	Retrocommissioning	employee	New	37.26	3	\$146.02	0%	0%	\$0.11	0.00	0.00	AEG Research
Transportation Equipment Mfg	Exterior Lighting	Retrocommissioning	employee	New	7.98	3	\$146.02	0%	0%	\$0.11	0.00	0.00	AEG Research
Transportation Equipment Mfg	Motors	Retrocommissioning	employee	New	195.17	3	\$146.02	0%	0%	\$0.11	0.00	0.00	AEG Research
Transportation Equipment Mfg	Process	Retrocommissioning	employee	New	137.15	3	\$146.02	0%	0%	\$0.11	0.00	0.00	AEG Research
Transportation Equipment Mfg	Miscellaneous	Retrocommissioning	employee	New	47.36	3	\$146.02	0%	0%	\$0.11	0.00	0.00	AEG Research
Transportation Equipment Mfg	Motors	Municipal Sewage Treatment	employee	New	14.11	12	\$9.23	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Motors	Municipal Water Supply Treatment	employee	New	0.00	12	\$0.00	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Wastewater	Cooling	Insulation - Ceiling	sqft	Existing	0.10	45	\$1.28	15%	25%	\$0.17	0.28	0.36	Building Energy Simulation Tool
Wastewater	Heating	Insulation - Ceiling	sqft	Existing	0.45	45	\$1.28	15%	25%	\$0.17	1.12	1.40	Building Energy Simulation Tool
Wastewater	Ventilation	Insulation - Ceiling	sqft	Existing	0.01	45	\$1.28	15%	25%	\$0.17	0.19	0.27	Building Energy Simulation Tool

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Wastewater	Cooling	Insulation - Ducting	sqft	Existing	0.04	20	\$0.84	15%	25%	\$1.23	0.10	0.13	Building Energy Simulation Tool
Wastewater	Heating	Insulation - Ducting	sqft	Existing	0.02	20	\$0.84	15%	25%	\$1.23	0.05	0.06	Building Energy Simulation Tool
Wastewater	Ventilation	Insulation - Ducting	sqft	Existing	0.00	20	\$0.84	15%	25%	\$1.23	0.01	0.01	Building Energy Simulation Tool
Wastewater	Cooling	Insulation - Wall Cavity	sqft	Existing	0.00	45	\$0.15	45%	50%	\$0.02	0.00	0.00	Building Energy Simulation Tool
Wastewater	Heating	Insulation - Wall Cavity	sqft	Existing	0.64	45	\$0.15	45%	50%	\$0.02	0.81	0.97	Building Energy Simulation Tool
Wastewater	Ventilation	Insulation - Wall Cavity	sqft	Existing	0.02	45	\$0.15	45%	50%	\$0.02	0.13	0.18	Building Energy Simulation Tool
Wastewater	Cooling	HVAC - Duct Repair and Sealing	sqft	Existing	0.01	18	\$0.00	15%	25%	\$0.00	0.04	0.05	Building Energy Simulation Tool
Wastewater	Heating	HVAC - Duct Repair and Sealing	sqft	Existing	0.04	18	\$0.00	15%	25%	\$0.00	0.11	0.14	Building Energy Simulation Tool
Wastewater	Ventilation	HVAC - Duct Repair and Sealing	sqft	Existing	0.00	18	\$0.00	15%	25%	\$0.00	0.02	0.03	Building Energy Simulation Tool
Wastewater	Cooling	Chiller - Chilled Water Reset	sqft	Existing	0.04	10	\$0.01	15%	45%	\$0.03	0.09	0.13	AEG-BEST
Wastewater	Cooling	Chiller - Chilled Water Variable-Flow System	sqft	Existing	0.21	15	\$0.50	15%	60%	\$0.24	0.71	1.04	AEG-BEST
Wastewater	Cooling	Chiller - Variable Speed Fans	sqft	Existing	0.08	15	\$0.03	15%	75%	\$0.04	0.37	0.52	New Jersey TRM
Wastewater	Cooling	HVAC - Economizer	sqft	Existing	0.10	10	\$0.25	18%	30%	\$0.30	0.35	0.52	AEG-BEST
Wastewater	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.25	15%	35%	\$11.12	0.06	0.11	7th Power Plan
Wastewater	Cooling	Destratification Fans (HVLS)	sqft	Existing	0.13	15	\$0.63	15%	50%	\$0.05	1.38	1.94	AEG Research
Wastewater	Heating	Destratification Fans (HVLS)	sqft	Existing	1.16	15	\$0.63	15%	50%	\$0.05	11.11	14.52	AEG Research
Wastewater	Cooling	RTU - Maintenance	sqft	Existing	0.07	3	\$0.07	15%	75%	\$0.32	0.74	1.13	AEG Research
Wastewater	Cooling	Thermostat - WiFi/Interactive	sqft	Existing	0.22	5	\$0.66	5%	15%	\$0.11	0.60	0.78	7th Power Plan
Wastewater	Heating	Thermostat - WiFi/Interactive	sqft	Existing	0.99	5	\$0.66	5%	15%	\$0.11	2.47	3.08	7th Power Plan
Wastewater	Ventilation	Thermostat - WiFi/Interactive	sqft	Existing	0.03	5	\$0.66	5%	15%	\$0.11	0.41	0.60	7th Power Plan
Wastewater	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.18	15	\$0.35	7%	33%	\$0.17	5.84	8.78	7th Power Plan

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Wastewater	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.25	15	\$0.58	7%	33%	\$0.20	7.75	12.03	7th Power Plan
Wastewater	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	Existing	0.02	15	\$0.00	1%	2%	\$0.01	0.03	0.06	7th Power Plan
Wastewater	Interior Lighting	Interior Lighting - Timeclocks and Timers	sqft	Existing	0.00	8	\$0.00	7%	7%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Wastewater	Interior Lighting	Interior Lighting - Skylights	sqft	Existing	0.00	15	\$1.01	15%	23%	\$0.00	0.00	0.00	AEG Research
Wastewater	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	sqft	Existing	0.03	16	\$1.81	5%	40%	\$5.03	0.86	1.83	7th Power Plan
Wastewater	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	Existing	0.03	11	\$0.00	15%	50%	\$0.01	0.98	1.84	Illinois TRM
Wastewater	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	sqft	Existing	0.04	8	\$0.03	15%	25%	\$0.10	1.15	2.29	7th Power Plan
Wastewater	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	Existing	0.02	8	\$0.02	33%	60%	\$0.11	1.60	3.27	Pacific Gas and Electric Research
Wastewater	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	Existing	0.03	7	\$1.19	15%	30%	\$5.85	1.00	2.16	AEG Research
Wastewater	Process	Process - Conductivity Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Wastewater	Process	Process - Timers and Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Wastewater	Motors	Process - Timers and Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Wastewater	Process	Refrigeration - Floating Head Pressure	employee	Existing	0.00	15	\$171.43	20%	50%	\$0.00	0.00	0.00	RTF Workbook
Wastewater	Process	Refrigeration - System Optimization	employee	Existing	0.00	15	\$120.72	20%	50%	\$0.00	0.00	0.00	AEG Research
Wastewater	Motors	Pumping System - Equipment Upgrade	employee	Existing	3,290.49	10	\$580.72	9%	38%	\$0.06	70.04	94.08	7th Power Plan
Wastewater	Motors	Pumping System - System Optimization	employee	Existing	2,424.30	12	\$885.02	9%	38%	-\$0.03	49.94	65.64	UNIDO Study on Industrial Energy Efficiency
Wastewater	Motors	Pumping System - Variable Speed Drive	employee	Existing	2,394.13	10	\$920.75	9%	38%	\$0.05	49.06	65.11	UNIDO Study on Industrial Energy Efficiency
Wastewater	Motors	Fan System - Equipment Upgrade	employee	Existing	4,603.55	10	\$539.22	9%	38%	\$0.05	96.85	122.41	UNIDO Study on Industrial Energy Efficiency
Wastewater	Motors	Fan System - Flow Optimization	employee	Existing	5,359.58	10	\$892.16	9%	38%	\$0.02	112.01	143.32	UNIDO Study on Industrial Energy Efficiency

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Wastewater	Motors	Fan System - Variable Speed Drive	employee	Existing	7,751.94	10	\$4,489.28	9%	38%	\$0.07	157.81	211.90	UNIDO Study on Industrial Energy Efficiency
Wastewater	Motors	Compressed Air - Equipment Upgrade	employee	Existing	314.20	10	\$27.41	17%	50%	\$0.04	7.93	10.28	7th Power Plan
Wastewater	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	Existing	0.00	15	\$0.00	16%	38%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Wastewater	Motors	Compressed Air - Refrigerated Cycling Dryers	employee	Existing	0.00	10	\$0.00	16%	30%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Wastewater	Motors	Compressed Air - System Controls	employee	Existing	67.55	10	\$19.60	9%	38%	\$0.00	1.42	1.96	UNIDO Study on Industrial Energy Efficiency
Wastewater	Motors	Compressed Air - Leak Management Program	employee	Existing	179.30	10	\$19.70	18%	75%	\$0.05	7.75	10.06	7th Power Plan
Wastewater	Motors	Compressed Air - Variable Speed Drive	employee	Existing	124.87	15	\$120.14	26%	45%	\$0.10	1.74	2.43	UNIDO Study on Industrial Energy Efficiency
Wastewater	Motors	Compressed Air - Low Pressure-Drop Filters	employee	Existing	4.16	10	\$1.85	17%	50%	\$0.06	0.10	0.14	Illinois TRM
Wastewater	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	Existing	25.54	10	\$6.01	17%	50%	\$0.03	0.63	0.86	UNIDO Study on Industrial Energy Efficiency
Wastewater	Motors	Compressed Air - Outside Air Intake	employee	Existing	0.00	20	\$0.00	17%	50%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Wastewater	Motors	Compressed Air - Receiver Capacity Addition	employee	Existing	25.24	15	\$16.52	17%	50%	\$0.07	0.62	0.85	UNIDO Study on Industrial Energy Efficiency
Wastewater	Motors	Material Handling - Variable Speed Drive	employee	Existing	697.53	10	\$307.03	25%	45%	\$0.06	9.99	13.35	7th Power Plan
Wastewater	Motors	Motors - Green Rewind (<100 HP)	employee	Existing	108.64	10	\$57.56	10%	50%	\$0.07	15.54	20.82	7th Power Plan
Wastewater	Motors	Motors - Green Rewind (100 HP+)	employee	Existing	61.07	10	\$20.43	6%	25%	\$0.04	4.17	5.53	7th Power Plan
Wastewater	Motors	Switch from Belt Drive to Direct Drive	employee	Existing	931.91	12	\$252.64	16%	25%	\$0.03	32.07	41.97	2015-mdu-irp-report---volume-iii.pdf
Wastewater	Motors	Motors - Synchronous Belts	employee	Existing	245.12	10	\$76.00	16%	36%	\$0.04	18.08	24.86	7th Power Plan
Wastewater	Miscellaneous	Agriculture - Engine Block Timer	employee	Existing	1,197.02	3	\$17.70	0%	0%	\$0.01	0.00	0.00	Vermont TRM
Wastewater	Motors	Agriculture - Live Stock Waterer	employee	Existing	7,663.75	10	\$5,114.28	0%	0%	\$0.08	0.00	0.00	Ontario Power TRM
Wastewater	Process	Dairy - Milk Precoolers	employee	Existing	0.00	15	\$545.51	0%	0%	\$0.00	0.00	0.00	Ontario Power TRM

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Wastewater	Process	Clean Room: Change Filter Strategy	employee	Existing	0.00	15	\$6.94	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Wastewater	Process	Clean Room: Chiller Optimize	employee	Existing	0.00	15	\$32.30	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Wastewater	Process	Clean Room: Clean Room HVAC	employee	Existing	0.00	15	\$38.99	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Wastewater	Process	Elec Chip Fab: Solidstate Chiller	employee	Existing	0.00	15	\$122.48	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Wastewater	Process	Elec Chip Fab: Eliminate Exhaust	employee	Existing	0.00	15	\$24.98	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Wastewater	Process	Elec Chip Fab: Exhaust Injector	employee	Existing	0.00	15	\$120.51	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Wastewater	Process	Elec Chip Fab: Reduce Gas Pressure	employee	Existing	0.00	15	\$2.42	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Wastewater	Motors	Panel: Hydraulic Press	employee	Existing	1,055.74	10	\$306.85	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Wastewater	Motors	Wood: Replace Pneumatic Conveyor	employee	Existing	1,162.86	10	\$22.98	0%	0%	-\$0.07	0.00	0.00	7th Power Plan
Wastewater	Process	Metal: New Arc Furnace	employee	Existing	0.00	10	\$111.18	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Wastewater	Process	Paper: Premium Control Large Material	employee	Existing	622.30	10	\$373.17	0%	0%	\$0.08	0.00	0.00	7th Power Plan
Wastewater	Process	Paper: Efficient Pulp Screen	employee	Existing	498.44	10	\$122.92	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Wastewater	Process	Kraft: Effluent Treatment System	employee	Existing	498.44	10	\$50.40	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Wastewater	Motors	Kraft: Efficient Agitator	employee	Existing	1,969.82	10	\$228.98	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Wastewater	Process	Mech Pulp: Premium Process	employee	Existing	5.58	5	\$0.86	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Wastewater	Motors	Mech Pulp: Refiner Plate Improvement	employee	Existing	16.09	1	\$0.87	0%	0%	\$0.05	0.00	0.00	7th Power Plan
Wastewater	Cooling	Transformer - High Efficiency	employee	Existing	44.23	10	\$185.89	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Wastewater	Heating	Transformer - High Efficiency	employee	Existing	197.77	10	\$185.89	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Wastewater	Ventilation	Transformer - High Efficiency	employee	Existing	5.63	10	\$185.89	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Wastewater	Interior Lighting	Transformer - High Efficiency	employee	Existing	27.30	10	\$185.89	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Wastewater	Exterior Lighting	Transformer - High Efficiency	employee	Existing	5.81	10	\$185.89	15%	15%	\$0.02	0.00	0.00	7th Power Plan

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Wastewater	Motors	Transformer - High Efficiency	employee	Existing	879.11	10	\$185.89	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Wastewater	Process	Transformer - High Efficiency	employee	Existing	49.84	10	\$185.89	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Wastewater	Miscellaneous	Transformer - High Efficiency	employee	Existing	44.56	10	\$185.89	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Wastewater	Cooling	Strategic Energy Management	employee	Existing	121.50	3	\$1,141.70	0%	5%	\$0.10	0.07	0.10	AEG Research
Wastewater	Heating	Strategic Energy Management	employee	Existing	566.14	3	\$1,141.70	0%	5%	\$0.10	0.32	0.40	AEG Research
Wastewater	Ventilation	Strategic Energy Management	employee	Existing	16.13	3	\$1,141.70	0%	5%	\$0.10	0.05	0.08	AEG Research
Wastewater	Interior Lighting	Strategic Energy Management	employee	Existing	77.74	3	\$1,141.70	0%	5%	\$0.10	0.21	0.37	AEG Research
Wastewater	Exterior Lighting	Strategic Energy Management	employee	Existing	16.64	3	\$1,141.70	0%	5%	\$0.10	0.05	0.08	AEG Research
Wastewater	Motors	Strategic Energy Management	employee	Existing	2,516.62	3	\$1,141.70	0%	5%	\$0.10	8.34	10.83	AEG Research
Wastewater	Process	Strategic Energy Management	employee	Existing	142.64	3	\$1,141.70	0%	5%	\$0.10	0.50	0.60	AEG Research
Wastewater	Miscellaneous	Strategic Energy Management	employee	Existing	127.39	3	\$1,141.70	0%	5%	\$0.10	0.57	0.53	AEG Research
Wastewater	Interior Lighting	Commissioning	employee	Existing	89.61	3	\$1,983.94	0%	0%	\$0.19	0.00	0.00	AEG Research
Wastewater	Exterior Lighting	Commissioning	employee	Existing	19.18	3	\$1,983.94	0%	0%	\$0.19	0.00	0.00	AEG Research
Wastewater	Motors	Commissioning	employee	Existing	2,900.45	3	\$1,983.94	0%	0%	\$0.19	0.00	0.00	AEG Research
Wastewater	Process	Commissioning	employee	Existing	164.39	3	\$1,983.94	0%	0%	\$0.19	0.00	0.00	AEG Research
Wastewater	Miscellaneous	Commissioning	employee	Existing	146.80	3	\$1,983.94	0%	0%	\$0.19	0.00	0.00	AEG Research
Wastewater	Interior Lighting	Retrocommissioning	employee	Existing	90.99	3	\$1,259.45	5%	39%	\$0.12	1.67	2.91	AEG Research
Wastewater	Exterior Lighting	Retrocommissioning	employee	Existing	19.35	3	\$1,259.45	5%	39%	\$0.12	0.36	0.63	AEG Research
Wastewater	Motors	Retrocommissioning	employee	Existing	2,930.37	3	\$1,259.45	5%	39%	\$0.12	66.54	85.59	AEG Research
Wastewater	Process	Retrocommissioning	employee	Existing	166.15	3	\$1,259.45	5%	39%	\$0.12	3.95	4.75	AEG Research
Wastewater	Miscellaneous	Retrocommissioning	employee	Existing	148.53	3	\$1,259.45	5%	39%	\$0.12	4.55	4.18	AEG Research
Wastewater	Motors	Municipal Sewage Treatment	employee	Existing	426.92	12	\$291.94	15%	35%	\$0.04	6.11	8.18	7th Power Plan

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Wastewater	Motors	Municipal Water Supply Treatment	employee	Existing	0.00	12	\$0.00	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Wastewater	Cooling	Insulation - Ceiling	sqft	New	0.09	45	\$1.28	15%	25%	\$0.18	0.05	0.05	Building Energy Simulation Tool
Wastewater	Heating	Insulation - Ceiling	sqft	New	0.44	45	\$1.28	15%	25%	\$0.18	0.19	0.21	Building Energy Simulation Tool
Wastewater	Ventilation	Insulation - Ceiling	sqft	New	0.01	45	\$1.28	15%	25%	\$0.18	0.03	0.03	Building Energy Simulation Tool
Wastewater	Cooling	Insulation - Ducting	sqft	New	0.04	20	\$0.84	15%	25%	\$1.32	0.02	0.02	Building Energy Simulation Tool
Wastewater	Heating	Insulation - Ducting	sqft	New	0.02	20	\$0.84	15%	25%	\$1.32	0.01	0.01	Building Energy Simulation Tool
Wastewater	Ventilation	Insulation - Ducting	sqft	New	0.00	20	\$0.84	15%	25%	\$1.32	0.00	0.00	Building Energy Simulation Tool
Wastewater	Cooling	Insulation - Wall Cavity	sqft	New	0.00	45	\$0.15	45%	50%	\$0.02	0.00	0.00	Building Energy Simulation Tool
Wastewater	Heating	Insulation - Wall Cavity	sqft	New	0.59	45	\$0.15	45%	50%	\$0.02	0.13	0.14	Building Energy Simulation Tool
Wastewater	Ventilation	Insulation - Wall Cavity	sqft	New	0.01	45	\$0.15	45%	50%	\$0.02	0.02	0.02	Building Energy Simulation Tool
Wastewater	Cooling	HVAC - Duct Repair and Sealing	sqft	New	0.01	18	\$0.00	15%	25%	\$0.00	0.01	0.01	Building Energy Simulation Tool
Wastewater	Heating	HVAC - Duct Repair and Sealing	sqft	New	0.04	18	\$0.00	15%	25%	\$0.00	0.02	0.02	Building Energy Simulation Tool
Wastewater	Ventilation	HVAC - Duct Repair and Sealing	sqft	New	0.00	18	\$0.00	15%	25%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Wastewater	Cooling	Chiller - Chilled Water Reset	sqft	New	0.03	10	\$0.01	15%	45%	\$0.04	0.00	0.01	AEG-BEST
Wastewater	Cooling	Chiller - Chilled Water Variable-Flow System	sqft	New	0.17	15	\$0.50	15%	60%	\$0.29	0.05	0.07	AEG-BEST
Wastewater	Cooling	Chiller - Variable Speed Fans	sqft	New	0.06	15	\$0.03	15%	75%	\$0.05	0.02	0.03	New Jersey TRM
Wastewater	Cooling	HVAC - Economizer	sqft	New	0.09	10	\$0.25	18%	30%	\$0.33	0.02	0.03	AEG-BEST
Wastewater	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.25	15%	35%	\$13.00	0.00	0.01	7th Power Plan
Wastewater	Cooling	Destratification Fans (HVLS)	sqft	New	0.12	15	\$0.63	15%	50%	\$0.06	0.10	0.14	AEG Research
Wastewater	Heating	Destratification Fans (HVLS)	sqft	New	1.09	15	\$0.63	15%	50%	\$0.06	0.85	1.06	AEG Research
Wastewater	Cooling	RTU - Maintenance	sqft	New	0.06	3	\$0.07	15%	75%	\$0.33	0.01	0.02	AEG Research

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Wastewater	Cooling	Thermostat - WiFi/Interactive	sqft	New	0.21	5	\$0.66	5%	15%	\$0.12	0.01	0.02	7th Power Plan
Wastewater	Heating	Thermostat - WiFi/Interactive	sqft	New	0.96	5	\$0.66	5%	15%	\$0.12	0.05	0.07	7th Power Plan
Wastewater	Ventilation	Thermostat - WiFi/Interactive	sqft	New	0.02	5	\$0.66	5%	15%	\$0.12	0.01	0.01	7th Power Plan
Wastewater	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.15	15	\$0.35	22%	41%	\$0.17	1.25	1.71	7th Power Plan
Wastewater	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.21	15	\$0.58	22%	41%	\$0.20	1.69	2.34	7th Power Plan
Wastewater	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	New	0.02	15	\$0.00	1%	2%	\$0.01	0.00	0.00	7th Power Plan
Wastewater	Interior Lighting	Interior Lighting - Timeclocks and Timers	sqft	New	0.00	8	\$0.00	7%	7%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Wastewater	Interior Lighting	Interior Lighting - Skylights	sqft	New	0.00	15	\$1.01	18%	24%	\$0.00	0.00	0.00	AEG Research
Wastewater	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	sqft	New	0.02	16	\$1.81	5%	40%	\$5.12	0.07	0.12	7th Power Plan
Wastewater	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	New	0.03	11	\$0.00	15%	50%	\$0.01	0.06	0.10	Illinois TRM
Wastewater	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	sqft	New	0.03	8	\$0.03	15%	25%	\$0.11	0.05	0.10	7th Power Plan
Wastewater	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	New	0.02	8	\$0.02	44%	60%	\$0.11	0.04	0.08	Pacific Gas and Electric Research
Wastewater	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	New	0.02	7	\$1.19	15%	30%	\$6.10	0.04	0.08	AEG Research
Wastewater	Process	Process - Conductivity Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Wastewater	Process	Process - Timers and Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Wastewater	Motors	Process - Timers and Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Wastewater	Process	Refrigeration - Floating Head Pressure	employee	New	0.00	15	\$121.16	20%	50%	\$0.00	0.00	0.00	RTF Workbook
Wastewater	Process	Refrigeration - System Optimization	employee	New	0.00	15	\$42.37	20%	50%	\$0.00	0.00	0.00	AEG Research
Wastewater	Motors	Pumping System - Equipment Upgrade	employee	New	3,355.71	10	\$580.72	9%	38%	\$0.06	4.42	5.66	7th Power Plan

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Wastewater	Motors	Pumping System - System Optimization	employee	New	2,499.01	12	\$885.02	9%	38%	-\$0.03	5.29	6.48	UNIDO Study on Industrial Energy Efficiency
Wastewater	Motors	Pumping System - Variable Speed Drive	employee	New	2,485.27	10	\$920.75	9%	38%	\$0.05	4.79	5.90	UNIDO Study on Industrial Energy Efficiency
Wastewater	Motors	Fan System - Equipment Upgrade	employee	New	4,611.34	10	\$539.22	9%	38%	\$0.05	8.83	10.94	UNIDO Study on Industrial Energy Efficiency
Wastewater	Motors	Fan System - Flow Optimization	employee	New	5,413.11	10	\$892.16	9%	38%	\$0.02	10.38	12.85	UNIDO Study on Industrial Energy Efficiency
Wastewater	Motors	Fan System - Variable Speed Drive	employee	New	8,107.16	10	\$4,489.28	9%	38%	\$0.07	15.65	19.25	UNIDO Study on Industrial Energy Efficiency
Wastewater	Motors	Compressed Air - Equipment Upgrade	employee	New	314.20	10	\$27.41	17%	50%	\$0.04	0.48	0.62	7th Power Plan
Wastewater	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	New	0.00	15	\$0.00	16%	38%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Wastewater	Motors	Compressed Air - Refrigerated Cycling Dryers	employee	New	0.00	10	\$0.00	16%	30%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Wastewater	Motors	Compressed Air - System Controls	employee	New	69.93	10	\$19.60	9%	38%	\$0.00	0.09	0.12	UNIDO Study on Industrial Energy Efficiency
Wastewater	Motors	Compressed Air - Leak Management Program	employee	New	179.46	10	\$19.70	18%	75%	\$0.05	0.47	0.60	7th Power Plan
Wastewater	Motors	Compressed Air - Variable Speed Drive	employee	New	130.32	15	\$120.14	26%	45%	\$0.10	0.15	0.19	UNIDO Study on Industrial Energy Efficiency
Wastewater	Motors	Compressed Air - Low Pressure-Drop Filters	employee	New	4.34	10	\$1.85	17%	50%	\$0.06	0.01	0.01	Illinois TRM
Wastewater	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	New	26.33	10	\$6.01	17%	50%	\$0.03	0.04	0.05	UNIDO Study on Industrial Energy Efficiency
Wastewater	Motors	Compressed Air - Outside Air Intake	employee	New	0.00	20	\$0.00	17%	50%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Wastewater	Motors	Compressed Air - Receiver Capacity Addition	employee	New	26.19	15	\$16.52	17%	50%	\$0.07	0.05	0.07	UNIDO Study on Industrial Energy Efficiency
Wastewater	Motors	Material Handling - Variable Speed Drive	employee	New	727.28	10	\$307.03	25%	45%	\$0.06	0.98	1.21	7th Power Plan
Wastewater	Motors	Motors - Green Rewind (<100 HP)	employee	New	113.45	10	\$57.56	10%	50%	\$0.07	1.54	1.89	7th Power Plan
Wastewater	Motors	Motors - Green Rewind (100 HP+)	employee	New	63.37	10	\$20.43	6%	25%	\$0.04	0.41	0.50	7th Power Plan
Wastewater	Motors	Switch from Belt Drive to Direct Drive	employee	New	957.91	12	\$252.64	16%	25%	\$0.03	3.38	4.14	2015-mdu-irp-report---volume-iii.pdf

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Wastewater	Motors	Motors - Synchronous Belts	employee	New	253.81	10	\$76.00	16%	36%	\$0.04	1.17	1.50	7th Power Plan
Wastewater	Miscellaneous	Agriculture - Engine Block Timer	employee	New	1,197.02	3	\$17.70	0%	0%	\$0.01	0.00	0.00	Vermont TRM
Wastewater	Motors	Agriculture - Live Stock Waterer	employee	New	8,132.24	10	\$5,114.28	0%	0%	\$0.08	0.00	0.00	Ontario Power TRM
Wastewater	Process	Dairy - Milk Precoolers	employee	New	0.00	15	\$545.51	0%	0%	\$0.00	0.00	0.00	Ontario Power TRM
Wastewater	Process	Clean Room: Change Filter Strategy	employee	New	0.00	15	\$6.94	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Wastewater	Process	Clean Room: Chiller Optimize	employee	New	0.00	15	\$32.30	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Wastewater	Process	Clean Room: Clean Room HVAC	employee	New	0.00	15	\$38.99	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Wastewater	Process	Elec Chip Fab: Solidstate Chiller	employee	New	0.00	15	\$122.48	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Wastewater	Process	Elec Chip Fab: Eliminate Exhaust	employee	New	0.00	15	\$24.98	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Wastewater	Process	Elec Chip Fab: Exhaust Injector	employee	New	0.00	15	\$120.51	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Wastewater	Process	Elec Chip Fab: Reduce Gas Pressure	employee	New	0.00	15	\$2.42	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Wastewater	Motors	Panel: Hydraulic Press	employee	New	1,093.17	10	\$306.85	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Wastewater	Motors	Wood: Replace Pneumatic Conveyor	employee	New	1,162.86	10	\$22.98	0%	0%	-\$0.07	0.00	0.00	7th Power Plan
Wastewater	Process	Metal: New Arc Furnace	employee	New	0.00	10	\$111.18	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Wastewater	Process	Paper: Premium Control Large Material	employee	New	622.30	10	\$373.17	0%	0%	\$0.08	0.00	0.00	7th Power Plan
Wastewater	Process	Paper: Efficient Pulp Screen	employee	New	498.44	10	\$122.92	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Wastewater	Process	Kraft: Effluent Treatment System	employee	New	498.44	10	\$50.40	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Wastewater	Motors	Kraft: Efficient Agitator	employee	New	2,002.96	10	\$228.98	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Wastewater	Process	Mech Pulp: Premium Process	employee	New	5.58	5	\$0.86	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Wastewater	Motors	Mech Pulp: Refiner Plate Improvement	employee	New	17.08	1	\$0.87	0%	0%	\$0.05	0.00	0.00	7th Power Plan
Wastewater	Cooling	Transformer - High Efficiency	employee	New	40.34	10	\$183.03	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Wastewater	Heating	Transformer - High Efficiency	employee	New	191.75	10	\$183.03	15%	15%	\$0.02	0.00	0.00	7th Power Plan

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Wastewater	Ventilation	Transformer - High Efficiency	employee	New	3.78	10	\$183.03	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Wastewater	Interior Lighting	Transformer - High Efficiency	employee	New	22.75	10	\$183.03	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Wastewater	Exterior Lighting	Transformer - High Efficiency	employee	New	4.91	10	\$183.03	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Wastewater	Motors	Transformer - High Efficiency	employee	New	932.85	10	\$183.03	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Wastewater	Process	Transformer - High Efficiency	employee	New	49.84	10	\$183.03	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Wastewater	Miscellaneous	Transformer - High Efficiency	employee	New	42.28	10	\$183.03	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Wastewater	Cooling	Strategic Energy Management	employee	New	114.79	3	\$1,124.12	0%	5%	\$0.10	0.00	0.00	AEG Research
Wastewater	Heating	Strategic Energy Management	employee	New	552.33	3	\$1,124.12	0%	5%	\$0.10	0.00	0.00	AEG Research
Wastewater	Ventilation	Strategic Energy Management	employee	New	10.90	3	\$1,124.12	0%	5%	\$0.10	0.00	0.00	AEG Research
Wastewater	Interior Lighting	Strategic Energy Management	employee	New	65.73	3	\$1,124.12	0%	5%	\$0.10	0.00	0.00	AEG Research
Wastewater	Exterior Lighting	Strategic Energy Management	employee	New	14.18	3	\$1,124.12	0%	5%	\$0.10	0.00	0.00	AEG Research
Wastewater	Motors	Strategic Energy Management	employee	New	2,694.90	3	\$1,124.12	0%	5%	\$0.10	0.07	0.10	AEG Research
Wastewater	Process	Strategic Energy Management	employee	New	143.99	3	\$1,124.12	0%	5%	\$0.10	0.00	0.00	AEG Research
Wastewater	Miscellaneous	Strategic Energy Management	employee	New	122.14	3	\$1,124.12	0%	5%	\$0.10	0.00	0.00	AEG Research
Wastewater	Interior Lighting	Commissioning	employee	New	75.63	3	\$1,979.60	5%	39%	\$0.19	0.01	0.03	AEG Research
Wastewater	Exterior Lighting	Commissioning	employee	New	16.35	3	\$1,979.60	5%	39%	\$0.19	0.00	0.01	AEG Research
Wastewater	Motors	Commissioning	employee	New	3,108.82	3	\$1,979.60	5%	39%	\$0.19	0.55	0.75	AEG Research
Wastewater	Process	Commissioning	employee	New	166.11	3	\$1,979.60	5%	39%	\$0.19	0.03	0.04	AEG Research
Wastewater	Miscellaneous	Commissioning	employee	New	140.90	3	\$1,979.60	5%	39%	\$0.19	0.03	0.03	AEG Research
Wastewater	Interior Lighting	Retrocommissioning	employee	New	75.85	3	\$1,256.69	0%	0%	\$0.12	0.00	0.00	AEG Research

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Wastewater	Exterior Lighting	Retrocommissioning	employee	New	16.36	3	\$1,256.69	0%	0%	\$0.12	0.00	0.00	AEG Research
Wastewater	Motors	Retrocommissioning	employee	New	3,109.50	3	\$1,256.69	0%	0%	\$0.12	0.00	0.00	AEG Research
Wastewater	Process	Retrocommissioning	employee	New	166.15	3	\$1,256.69	0%	0%	\$0.12	0.00	0.00	AEG Research
Wastewater	Miscellaneous	Retrocommissioning	employee	New	140.93	3	\$1,256.69	0%	0%	\$0.12	0.00	0.00	AEG Research
Wastewater	Motors	Municipal Sewage Treatment	employee	New	445.62	12	\$291.94	15%	35%	\$0.04	0.66	0.81	7th Power Plan
Wastewater	Motors	Municipal Water Supply Treatment	employee	New	0.00	12	\$0.00	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Water	Cooling	Insulation - Ceiling	sqft	Existing	0.10	45	\$1.28	15%	25%	\$0.17	0.44	0.56	Building Energy Simulation Tool
Water	Heating	Insulation - Ceiling	sqft	Existing	0.45	45	\$1.28	15%	25%	\$0.17	1.76	2.18	Building Energy Simulation Tool
Water	Ventilation	Insulation - Ceiling	sqft	Existing	0.01	45	\$1.28	15%	25%	\$0.17	0.29	0.43	Building Energy Simulation Tool
Water	Cooling	Insulation - Ducting	sqft	Existing	0.04	20	\$0.84	15%	25%	\$1.23	0.16	0.21	Building Energy Simulation Tool
Water	Heating	Insulation - Ducting	sqft	Existing	0.02	20	\$0.84	15%	25%	\$1.23	0.07	0.09	Building Energy Simulation Tool
Water	Ventilation	Insulation - Ducting	sqft	Existing	0.00	20	\$0.84	15%	25%	\$1.23	0.01	0.02	Building Energy Simulation Tool
Water	Cooling	Insulation - Wall Cavity	sqft	Existing	0.00	45	\$0.15	45%	50%	\$0.02	0.00	0.00	Building Energy Simulation Tool
Water	Heating	Insulation - Wall Cavity	sqft	Existing	0.64	45	\$0.15	45%	50%	\$0.02	1.26	1.52	Building Energy Simulation Tool
Water	Ventilation	Insulation - Wall Cavity	sqft	Existing	0.02	45	\$0.15	45%	50%	\$0.02	0.20	0.28	Building Energy Simulation Tool
Water	Cooling	HVAC - Duct Repair and Sealing	sqft	Existing	0.01	18	\$0.00	15%	25%	\$0.00	0.06	0.07	Building Energy Simulation Tool
Water	Heating	HVAC - Duct Repair and Sealing	sqft	Existing	0.04	18	\$0.00	15%	25%	\$0.00	0.18	0.21	Building Energy Simulation Tool
Water	Ventilation	HVAC - Duct Repair and Sealing	sqft	Existing	0.00	18	\$0.00	15%	25%	\$0.00	0.03	0.04	Building Energy Simulation Tool
Water	Cooling	Chiller - Chilled Water Reset	sqft	Existing	0.04	10	\$0.01	15%	45%	\$0.03	0.14	0.20	AEG-BEST
Water	Cooling	Chiller - Chilled Water Variable-Flow System	sqft	Existing	0.21	15	\$0.50	15%	60%	\$0.24	1.11	1.62	AEG-BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Water	Cooling	Chiller - Variable Speed Fans	sqft	Existing	0.08	15	\$0.03	15%	75%	\$0.04	0.57	0.81	New Jersey TRM
Water	Cooling	HVAC - Economizer	sqft	Existing	0.10	10	\$0.25	18%	30%	\$0.30	0.55	0.81	AEG-BEST
Water	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.25	15%	35%	\$11.12	0.10	0.16	7th Power Plan
Water	Cooling	Destratification Fans (HVLS)	sqft	Existing	0.13	15	\$0.63	15%	50%	\$0.05	2.15	3.03	AEG Research
Water	Heating	Destratification Fans (HVLS)	sqft	Existing	1.16	15	\$0.63	15%	50%	\$0.05	17.35	22.68	AEG Research
Water	Cooling	RTU - Maintenance	sqft	Existing	0.07	3	\$0.07	15%	75%	\$0.32	1.16	1.77	AEG Research
Water	Cooling	Thermostat - WiFi/Interactive	sqft	Existing	0.22	5	\$0.66	5%	15%	\$0.11	0.93	1.22	7th Power Plan
Water	Heating	Thermostat - WiFi/Interactive	sqft	Existing	0.99	5	\$0.66	5%	15%	\$0.11	3.86	4.82	7th Power Plan
Water	Ventilation	Thermostat - WiFi/Interactive	sqft	Existing	0.03	5	\$0.66	5%	15%	\$0.11	0.65	0.94	7th Power Plan
Water	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.18	15	\$0.35	7%	33%	\$0.17	9.13	13.72	7th Power Plan
Water	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.25	15	\$0.58	7%	33%	\$0.20	12.11	18.79	7th Power Plan
Water	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	Existing	0.02	15	\$0.00	1%	2%	\$0.01	0.05	0.09	7th Power Plan
Water	Interior Lighting	Interior Lighting - Timeclocks and Timers	sqft	Existing	0.00	8	\$0.00	7%	7%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Water	Interior Lighting	Interior Lighting - Skylights	sqft	Existing	0.00	15	\$1.01	15%	23%	\$0.00	0.00	0.00	AEG Research
Water	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	sqft	Existing	0.03	16	\$1.81	5%	40%	\$5.03	1.35	2.86	7th Power Plan
Water	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	Existing	0.03	11	\$0.00	15%	50%	\$0.01	1.54	2.87	Illinois TRM
Water	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	sqft	Existing	0.04	8	\$0.03	15%	25%	\$0.10	1.80	3.57	7th Power Plan
Water	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	Existing	0.02	8	\$0.02	33%	60%	\$0.11	2.49	5.11	Pacific Gas and Electric Research
Water	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	Existing	0.03	7	\$1.19	15%	30%	\$5.85	1.56	3.38	AEG Research
Water	Process	Process - Conductivity Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Water	Process	Process - Timers and Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Water	Motors	Process - Timers and Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Water	Process	Refrigeration - Floating Head Pressure	employee	Existing	0.00	15	\$38.75	20%	50%	\$0.00	0.00	0.00	RTF Workbook
Water	Process	Refrigeration - System Optimization	employee	Existing	0.00	15	\$27.28	20%	50%	\$0.00	0.00	0.00	AEG Research
Water	Motors	Pumping System - Equipment Upgrade	employee	Existing	2,775.71	10	\$474.13	9%	38%	\$0.06	414.36	538.50	7th Power Plan
Water	Motors	Pumping System - System Optimization	employee	Existing	1,977.00	12	\$722.58	9%	38%	-\$0.03	282.66	369.15	UNIDO Study on Industrial Energy Efficiency
Water	Motors	Pumping System - Variable Speed Drive	employee	Existing	1,910.58	10	\$751.75	9%	38%	\$0.05	268.93	361.29	UNIDO Study on Industrial Energy Efficiency
Water	Motors	Fan System - Equipment Upgrade	employee	Existing	0.00	10	\$5.70	9%	38%	\$0.00	0.00	0.00	UNIDO Study on Industrial Energy Efficiency
Water	Motors	Fan System - Flow Optimization	employee	Existing	0.00	10	\$9.43	9%	38%	\$0.00	0.00	0.00	UNIDO Study on Industrial Energy Efficiency
Water	Motors	Fan System - Variable Speed Drive	employee	Existing	0.00	10	\$47.48	9%	38%	\$0.00	0.00	0.00	UNIDO Study on Industrial Energy Efficiency
Water	Motors	Compressed Air - Equipment Upgrade	employee	Existing	71.01	10	\$6.19	17%	50%	\$0.04	12.38	16.05	7th Power Plan
Water	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	Existing	0.00	15	\$0.00	16%	38%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Water	Motors	Compressed Air - Refrigerated Cycling Dryers	employee	Existing	0.00	10	\$0.00	16%	30%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Water	Motors	Compressed Air - System Controls	employee	Existing	14.92	10	\$4.43	9%	38%	\$0.00	2.16	3.02	UNIDO Study on Industrial Energy Efficiency
Water	Motors	Compressed Air - Leak Management Program	employee	Existing	40.52	10	\$4.45	18%	75%	\$0.05	12.10	15.71	7th Power Plan
Water	Motors	Compressed Air - Variable Speed Drive	employee	Existing	27.02	15	\$27.15	26%	45%	\$0.10	2.56	3.71	UNIDO Study on Industrial Energy Efficiency
Water	Motors	Compressed Air - Low Pressure-Drop Filters	employee	Existing	0.90	10	\$0.42	17%	50%	\$0.06	0.15	0.22	Illinois TRM
Water	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	Existing	5.77	10	\$1.36	17%	50%	\$0.03	0.99	1.34	UNIDO Study on Industrial Energy Efficiency
Water	Motors	Compressed Air - Outside Air Intake	employee	Existing	0.00	20	\$0.00	17%	50%	\$0.00	0.00	0.00	Michigan Energy Measures Database

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Water	Motors	Compressed Air - Receiver Capacity Addition	employee	Existing	5.57	15	\$3.73	17%	50%	\$0.07	0.94	1.32	UNIDO Study on Industrial Energy Efficiency
Water	Motors	Material Handling - Variable Speed Drive	employee	Existing	100.48	10	\$46.23	25%	45%	\$0.06	9.78	13.48	7th Power Plan
Water	Motors	Motors - Green Rewind (<100 HP)	employee	Existing	29.41	10	\$16.26	10%	50%	\$0.07	22.89	31.59	7th Power Plan
Water	Motors	Motors - Green Rewind (100 HP+)	employee	Existing	16.87	10	\$5.77	6%	25%	\$0.04	6.33	8.50	7th Power Plan
Water	Motors	Switch from Belt Drive to Direct Drive	employee	Existing	262.97	12	\$71.37	16%	25%	\$0.03	50.25	65.34	2015-mdu-irp-report---volume-iii.pdf
Water	Motors	Motors - Synchronous Belts	employee	Existing	67.69	10	\$21.47	16%	36%	\$0.04	27.43	38.30	7th Power Plan
Water	Miscellaneous	Agriculture - Engine Block Timer	employee	Existing	270.53	3	\$4.00	0%	0%	\$0.01	0.00	0.00	Vermont TRM
Water	Motors	Agriculture - Live Stock Waterer	employee	Existing	6,158.98	10	\$4,175.58	0%	0%	\$0.08	0.00	0.00	Ontario Power TRM
Water	Process	Dairy - Milk Precoolers	employee	Existing	0.00	15	\$123.29	0%	0%	\$0.00	0.00	0.00	Ontario Power TRM
Water	Process	Clean Room: Change Filter Strategy	employee	Existing	0.00	15	\$1.57	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Water	Process	Clean Room: Chiller Optimize	employee	Existing	0.00	15	\$7.30	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Water	Process	Clean Room: Clean Room HVAC	employee	Existing	0.00	15	\$8.81	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Water	Process	Elec Chip Fab: Solidstate Chiller	employee	Existing	0.00	15	\$27.68	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Water	Process	Elec Chip Fab: Eliminate Exhaust	employee	Existing	0.00	15	\$5.65	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Water	Process	Elec Chip Fab: Exhaust Injector	employee	Existing	0.00	15	\$27.24	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Water	Process	Elec Chip Fab: Reduce Gas Pressure	employee	Existing	0.00	15	\$0.55	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Water	Motors	Panel: Hydraulic Press	employee	Existing	155.36	10	\$46.20	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Water	Motors	Wood: Replace Pneumatic Conveyor	employee	Existing	175.08	10	\$3.46	0%	0%	-\$0.07	0.00	0.00	7th Power Plan
Water	Process	Metal: New Arc Furnace	employee	Existing	0.00	10	\$25.13	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Water	Process	Paper: Premium Control Large Material	employee	Existing	140.64	10	\$84.34	0%	0%	\$0.08	0.00	0.00	7th Power Plan
Water	Process	Paper: Efficient Pulp Screen	employee	Existing	112.65	10	\$27.78	0%	0%	\$0.03	0.00	0.00	7th Power Plan

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Water	Process	Kraft: Effluent Treatment System	employee	Existing	112.65	10	\$11.39	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Water	Motors	Kraft: Efficient Agitator	employee	Existing	301.06	10	\$34.48	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Water	Process	Mech Pulp: Premium Process	employee	Existing	1.26	5	\$0.19	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Water	Motors	Mech Pulp: Refiner Plate Improvement	employee	Existing	2.39	1	\$0.13	0%	0%	\$0.05	0.00	0.00	7th Power Plan
Water	Cooling	Transformer - High Efficiency	employee	Existing	10.00	10	\$42.01	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Water	Heating	Transformer - High Efficiency	employee	Existing	44.70	10	\$42.01	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Water	Ventilation	Transformer - High Efficiency	employee	Existing	1.27	10	\$42.01	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Water	Interior Lighting	Transformer - High Efficiency	employee	Existing	6.17	10	\$42.01	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Water	Exterior Lighting	Transformer - High Efficiency	employee	Existing	1.31	10	\$42.01	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Water	Motors	Transformer - High Efficiency	employee	Existing	195.57	10	\$42.01	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Water	Process	Transformer - High Efficiency	employee	Existing	11.27	10	\$42.01	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Water	Miscellaneous	Transformer - High Efficiency	employee	Existing	10.07	10	\$42.01	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Water	Cooling	Strategic Energy Management	employee	Existing	27.46	3	\$258.03	0%	5%	\$0.10	0.11	0.15	AEG Research
Water	Heating	Strategic Energy Management	employee	Existing	127.95	3	\$258.03	0%	5%	\$0.10	0.50	0.63	AEG Research
Water	Ventilation	Strategic Energy Management	employee	Existing	3.65	3	\$258.03	0%	5%	\$0.10	0.08	0.12	AEG Research
Water	Interior Lighting	Strategic Energy Management	employee	Existing	17.57	3	\$258.03	0%	5%	\$0.10	0.32	0.57	AEG Research
Water	Exterior Lighting	Strategic Energy Management	employee	Existing	3.76	3	\$258.03	0%	5%	\$0.10	0.07	0.13	AEG Research
Water	Motors	Strategic Energy Management	employee	Existing	559.87	3	\$258.03	0%	5%	\$0.10	12.78	16.70	AEG Research
Water	Process	Strategic Energy Management	employee	Existing	32.24	3	\$258.03	0%	5%	\$0.10	0.77	0.94	AEG Research

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Water	Miscellaneous	Strategic Energy Management	employee	Existing	28.79	3	\$258.03	0%	5%	\$0.10	0.89	0.83	AEG Research
Water	Interior Lighting	Commissioning	employee	Existing	20.25	3	\$448.38	0%	0%	\$0.19	0.00	0.00	AEG Research
Water	Exterior Lighting	Commissioning	employee	Existing	4.34	3	\$448.38	0%	0%	\$0.19	0.00	0.00	AEG Research
Water	Motors	Commissioning	employee	Existing	645.26	3	\$448.38	0%	0%	\$0.19	0.00	0.00	AEG Research
Water	Process	Commissioning	employee	Existing	37.15	3	\$448.38	0%	0%	\$0.19	0.00	0.00	AEG Research
Water	Miscellaneous	Commissioning	employee	Existing	33.18	3	\$448.38	0%	0%	\$0.19	0.00	0.00	AEG Research
Water	Interior Lighting	Retrocommissioning	employee	Existing	20.57	3	\$284.64	5%	39%	\$0.12	2.61	4.54	AEG Research
Water	Exterior Lighting	Retrocommissioning	employee	Existing	4.37	3	\$284.64	5%	39%	\$0.12	0.57	0.99	AEG Research
Water	Motors	Retrocommissioning	employee	Existing	651.90	3	\$284.64	5%	39%	\$0.12	102.02	131.96	AEG Research
Water	Process	Retrocommissioning	employee	Existing	37.55	3	\$284.64	5%	39%	\$0.12	6.17	7.42	AEG Research
Water	Miscellaneous	Retrocommissioning	employee	Existing	33.57	3	\$284.64	5%	39%	\$0.12	7.10	6.53	AEG Research
Water	Motors	Municipal Sewage Treatment	employee	Existing	333.68	12	\$238.36	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Water	Motors	Municipal Water Supply Treatment	employee	Existing	0.00	12	\$0.00	15%	35%	\$0.00	0.00	0.00	7th Power Plan
Water	Cooling	Insulation - Ceiling	sqft	New	0.09	45	\$1.28	15%	25%	\$0.18	0.07	0.08	Building Energy Simulation Tool
Water	Heating	Insulation - Ceiling	sqft	New	0.44	45	\$1.28	15%	25%	\$0.18	0.28	0.31	Building Energy Simulation Tool
Water	Ventilation	Insulation - Ceiling	sqft	New	0.01	45	\$1.28	15%	25%	\$0.18	0.04	0.05	Building Energy Simulation Tool
Water	Cooling	Insulation - Ducting	sqft	New	0.04	20	\$0.84	15%	25%	\$1.32	0.03	0.03	Building Energy Simulation Tool
Water	Heating	Insulation - Ducting	sqft	New	0.02	20	\$0.84	15%	25%	\$1.32	0.01	0.01	Building Energy Simulation Tool
Water	Ventilation	Insulation - Ducting	sqft	New	0.00	20	\$0.84	15%	25%	\$1.32	0.00	0.00	Building Energy Simulation Tool
Water	Cooling	Insulation - Wall Cavity	sqft	New	0.00	45	\$0.15	45%	50%	\$0.02	0.00	0.00	Building Energy Simulation Tool
Water	Heating	Insulation - Wall Cavity	sqft	New	0.59	45	\$0.15	45%	50%	\$0.02	0.19	0.21	Building Energy Simulation Tool
Water	Ventilation	Insulation - Wall Cavity	sqft	New	0.01	45	\$0.15	45%	50%	\$0.02	0.03	0.03	Building Energy Simulation Tool

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Water	Cooling	HVAC - Duct Repair and Sealing	sqft	New	0.01	18	\$0.00	15%	25%	\$0.00	0.01	0.01	Building Energy Simulation Tool
Water	Heating	HVAC - Duct Repair and Sealing	sqft	New	0.04	18	\$0.00	15%	25%	\$0.00	0.03	0.03	Building Energy Simulation Tool
Water	Ventilation	HVAC - Duct Repair and Sealing	sqft	New	0.00	18	\$0.00	15%	25%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Water	Cooling	Chiller - Chilled Water Reset	sqft	New	0.03	10	\$0.01	15%	45%	\$0.04	0.01	0.01	AEG-BEST
Water	Cooling	Chiller - Chilled Water Variable-Flow System	sqft	New	0.17	15	\$0.50	15%	60%	\$0.29	0.07	0.09	AEG-BEST
Water	Cooling	Chiller - Variable Speed Fans	sqft	New	0.06	15	\$0.03	15%	75%	\$0.05	0.03	0.04	New Jersey TRM
Water	Cooling	HVAC - Economizer	sqft	New	0.09	10	\$0.25	18%	30%	\$0.33	0.03	0.04	AEG-BEST
Water	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.25	15%	35%	\$12.99	0.01	0.01	7th Power Plan
Water	Cooling	Destratification Fans (HVLS)	sqft	New	0.12	15	\$0.63	15%	50%	\$0.06	0.15	0.19	AEG Research
Water	Heating	Destratification Fans (HVLS)	sqft	New	1.09	15	\$0.63	15%	50%	\$0.06	1.19	1.48	AEG Research
Water	Cooling	RTU - Maintenance	sqft	New	0.06	3	\$0.07	15%	75%	\$0.33	0.01	0.02	AEG Research
Water	Cooling	Thermostat - WiFi/Interactive	sqft	New	0.21	5	\$0.66	5%	15%	\$0.12	0.02	0.03	7th Power Plan
Water	Heating	Thermostat - WiFi/Interactive	sqft	New	0.96	5	\$0.66	5%	15%	\$0.12	0.08	0.10	7th Power Plan
Water	Ventilation	Thermostat - WiFi/Interactive	sqft	New	0.02	5	\$0.66	5%	15%	\$0.12	0.01	0.02	7th Power Plan
Water	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.15	15	\$0.35	22%	41%	\$0.17	1.89	2.58	7th Power Plan
Water	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.20	15	\$0.58	22%	41%	\$0.20	2.55	3.52	7th Power Plan
Water	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	New	0.02	15	\$0.00	1%	2%	\$0.01	0.00	0.00	7th Power Plan
Water	Interior Lighting	Interior Lighting - Timeclocks and Timers	sqft	New	0.00	8	\$0.00	7%	7%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Water	Interior Lighting	Interior Lighting - Skylights	sqft	New	0.00	15	\$1.01	18%	24%	\$0.00	0.00	0.00	AEG Research
Water	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	sqft	New	0.02	16	\$1.81	5%	40%	\$5.13	0.10	0.16	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Water	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	New	0.02	11	\$0.00	15%	50%	\$0.01	0.08	0.14	Illinois TRM
Water	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	sqft	New	0.03	8	\$0.03	15%	25%	\$0.11	0.07	0.13	7th Power Plan
Water	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	New	0.02	8	\$0.02	44%	60%	\$0.11	0.06	0.11	Pacific Gas and Electric Research
Water	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	New	0.02	7	\$1.19	15%	30%	\$6.12	0.06	0.11	AEG Research
Water	Process	Process - Conductivity Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Water	Process	Process - Timers and Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Water	Motors	Process - Timers and Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Water	Process	Refrigeration - Floating Head Pressure	employee	New	0.00	15	\$27.38	20%	50%	\$0.00	0.00	0.00	RTF Workbook
Water	Process	Refrigeration - System Optimization	employee	New	0.00	15	\$9.57	20%	50%	\$0.00	0.00	0.00	AEG Research
Water	Motors	Pumping System - Equipment Upgrade	employee	New	2,780.58	10	\$474.13	9%	38%	\$0.06	22.79	29.04	7th Power Plan
Water	Motors	Pumping System - System Optimization	employee	New	2,048.08	12	\$722.58	9%	38%	-\$0.03	27.88	33.94	UNIDO Study on Industrial Energy Efficiency
Water	Motors	Pumping System - Variable Speed Drive	employee	New	2,017.81	10	\$751.75	9%	38%	\$0.05	25.31	30.91	UNIDO Study on Industrial Energy Efficiency
Water	Motors	Fan System - Equipment Upgrade	employee	New	0.00	10	\$5.70	9%	38%	\$0.00	0.00	0.00	UNIDO Study on Industrial Energy Efficiency
Water	Motors	Fan System - Flow Optimization	employee	New	0.00	10	\$9.43	9%	38%	\$0.00	0.00	0.00	UNIDO Study on Industrial Energy Efficiency
Water	Motors	Fan System - Variable Speed Drive	employee	New	0.00	10	\$47.48	9%	38%	\$0.00	0.00	0.00	UNIDO Study on Industrial Energy Efficiency
Water	Motors	Compressed Air - Equipment Upgrade	employee	New	71.01	10	\$6.19	17%	50%	\$0.04	0.68	0.87	7th Power Plan
Water	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	New	0.00	15	\$0.00	16%	38%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Water	Motors	Compressed Air - Refrigerated Cycling Dryers	employee	New	0.00	10	\$0.00	16%	30%	\$0.00	0.00	0.00	Michigan Energy Measures Database

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Water	Motors	Compressed Air - System Controls	employee	New	15.72	10	\$4.43	9%	38%	\$0.00	0.13	0.16	UNIDO Study on Industrial Energy Efficiency
Water	Motors	Compressed Air - Leak Management Program	employee	New	40.56	10	\$4.45	18%	75%	\$0.05	0.66	0.85	7th Power Plan
Water	Motors	Compressed Air - Variable Speed Drive	employee	New	29.03	15	\$27.15	26%	45%	\$0.10	0.21	0.26	UNIDO Study on Industrial Energy Efficiency
Water	Motors	Compressed Air - Low Pressure-Drop Filters	employee	New	0.97	10	\$0.42	17%	50%	\$0.06	0.01	0.01	Illinois TRM
Water	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	New	5.97	10	\$1.36	17%	50%	\$0.03	0.06	0.07	UNIDO Study on Industrial Energy Efficiency
Water	Motors	Compressed Air - Outside Air Intake	employee	New	0.00	20	\$0.00	17%	50%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Water	Motors	Compressed Air - Receiver Capacity Addition	employee	New	5.88	15	\$3.73	17%	50%	\$0.07	0.08	0.09	UNIDO Study on Industrial Energy Efficiency
Water	Motors	Material Handling - Variable Speed Drive	employee	New	107.89	10	\$46.23	25%	45%	\$0.06	0.95	1.16	7th Power Plan
Water	Motors	Motors - Green Rewind (<100 HP)	employee	New	31.61	10	\$16.26	10%	50%	\$0.07	2.23	2.72	7th Power Plan
Water	Motors	Motors - Green Rewind (100 HP+)	employee	New	17.80	10	\$5.77	6%	25%	\$0.04	0.60	0.73	7th Power Plan
Water	Motors	Switch from Belt Drive to Direct Drive	employee	New	271.62	12	\$71.37	16%	25%	\$0.03	4.93	6.00	2015-mdi-irp-report---volume-iii.pdf
Water	Motors	Motors - Synchronous Belts	employee	New	71.30	10	\$21.47	16%	36%	\$0.04	1.65	2.09	7th Power Plan
Water	Miscellaneous	Agriculture - Engine Block Timer	employee	New	270.53	3	\$4.00	0%	0%	\$0.01	0.00	0.00	Vermont TRM
Water	Motors	Agriculture - Live Stock Waterer	employee	New	6,627.97	10	\$4,175.58	0%	0%	\$0.08	0.00	0.00	Ontario Power TRM
Water	Process	Dairy - Milk Precoolers	employee	New	0.00	15	\$123.29	0%	0%	\$0.00	0.00	0.00	Ontario Power TRM
Water	Process	Clean Room: Change Filter Strategy	employee	New	0.00	15	\$1.57	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Water	Process	Clean Room: Chiller Optimize	employee	New	0.00	15	\$7.30	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Water	Process	Clean Room: Clean Room HVAC	employee	New	0.00	15	\$8.81	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Water	Process	Elec Chip Fab: Solidstate Chiller	employee	New	0.00	15	\$27.68	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Water	Process	Elec Chip Fab: Eliminate Exhaust	employee	New	0.00	15	\$5.65	0%	0%	\$0.00	0.00	0.00	7th Power Plan

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Water	Process	Elec Chip Fab: Exhaust Injector	employee	New	0.00	15	\$27.24	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Water	Process	Elec Chip Fab: Reduce Gas Pressure	employee	New	0.00	15	\$0.55	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Water	Motors	Panel: Hydraulic Press	employee	New	163.67	10	\$46.20	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Water	Motors	Wood: Replace Pneumatic Conveyor	employee	New	175.08	10	\$3.46	0%	0%	-\$0.07	0.00	0.00	7th Power Plan
Water	Process	Metal: New Arc Furnace	employee	New	0.00	10	\$25.13	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Water	Process	Paper: Premium Control Large Material	employee	New	140.64	10	\$84.34	0%	0%	\$0.08	0.00	0.00	7th Power Plan
Water	Process	Paper: Efficient Pulp Screen	employee	New	112.65	10	\$27.78	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Water	Process	Kraft: Effluent Treatment System	employee	New	112.65	10	\$11.39	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Water	Motors	Kraft: Efficient Agitator	employee	New	301.59	10	\$34.48	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Water	Process	Mech Pulp: Premium Process	employee	New	1.26	5	\$0.19	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Water	Motors	Mech Pulp: Refiner Plate Improvement	employee	New	2.57	1	\$0.13	0%	0%	\$0.05	0.00	0.00	7th Power Plan
Water	Cooling	Transformer - High Efficiency	employee	New	9.05	10	\$41.37	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Water	Heating	Transformer - High Efficiency	employee	New	43.40	10	\$41.37	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Water	Ventilation	Transformer - High Efficiency	employee	New	0.81	10	\$41.37	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Water	Interior Lighting	Transformer - High Efficiency	employee	New	4.96	10	\$41.37	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Water	Exterior Lighting	Transformer - High Efficiency	employee	New	1.06	10	\$41.37	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Water	Motors	Transformer - High Efficiency	employee	New	210.46	10	\$41.37	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Water	Process	Transformer - High Efficiency	employee	New	11.27	10	\$41.37	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Water	Miscellaneous	Transformer - High Efficiency	employee	New	9.56	10	\$41.37	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Water	Cooling	Strategic Energy Management	employee	New	25.77	3	\$254.06	0%	5%	\$0.10	0.00	0.00	AEG Research
Water	Heating	Strategic Energy Management	employee	New	125.02	3	\$254.06	0%	5%	\$0.10	0.00	0.01	AEG Research

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Water	Ventilation	Strategic Energy Management	employee	New	2.35	3	\$254.06	0%	5%	\$0.10	0.00	0.00	AEG Research
Water	Interior Lighting	Strategic Energy Management	employee	New	14.32	3	\$254.06	0%	5%	\$0.10	0.00	0.00	AEG Research
Water	Exterior Lighting	Strategic Energy Management	employee	New	3.06	3	\$254.06	0%	5%	\$0.10	0.00	0.00	AEG Research
Water	Motors	Strategic Energy Management	employee	New	608.00	3	\$254.06	0%	5%	\$0.10	0.11	0.15	AEG Research
Water	Process	Strategic Energy Management	employee	New	32.54	3	\$254.06	0%	5%	\$0.10	0.01	0.01	AEG Research
Water	Miscellaneous	Strategic Energy Management	employee	New	27.60	3	\$254.06	0%	5%	\$0.10	0.01	0.01	AEG Research
Water	Interior Lighting	Commissioning	employee	New	16.48	3	\$447.40	5%	39%	\$0.19	0.02	0.04	AEG Research
Water	Exterior Lighting	Commissioning	employee	New	3.53	3	\$447.40	5%	39%	\$0.19	0.00	0.01	AEG Research
Water	Motors	Commissioning	employee	New	701.39	3	\$447.40	5%	39%	\$0.19	0.86	1.16	AEG Research
Water	Process	Commissioning	employee	New	37.54	3	\$447.40	5%	39%	\$0.19	0.05	0.06	AEG Research
Water	Miscellaneous	Commissioning	employee	New	31.84	3	\$447.40	5%	39%	\$0.19	0.05	0.04	AEG Research
Water	Interior Lighting	Retrocommissioning	employee	New	16.52	3	\$284.02	0%	0%	\$0.12	0.00	0.00	AEG Research
Water	Exterior Lighting	Retrocommissioning	employee	New	3.53	3	\$284.02	0%	0%	\$0.12	0.00	0.00	AEG Research
Water	Motors	Retrocommissioning	employee	New	701.54	3	\$284.02	0%	0%	\$0.12	0.00	0.00	AEG Research
Water	Process	Retrocommissioning	employee	New	37.55	3	\$284.02	0%	0%	\$0.12	0.00	0.00	AEG Research
Water	Miscellaneous	Retrocommissioning	employee	New	31.85	3	\$284.02	0%	0%	\$0.12	0.00	0.00	AEG Research
Water	Motors	Municipal Sewage Treatment	employee	New	358.58	12	\$238.36	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Water	Motors	Municipal Water Supply Treatment	employee	New	0.00	12	\$0.00	15%	35%	\$0.00	0.00	0.00	7th Power Plan
Chemical Mfg	Cooling	Insulation - Ceiling	sqft	Existing	0.10	45	\$1.28	15%	25%	\$0.17	0.01	0.02	Building Energy Simulation Tool
Chemical Mfg	Heating	Insulation - Ceiling	sqft	Existing	0.45	45	\$1.28	15%	25%	\$0.17	0.05	0.06	Building Energy Simulation Tool
Chemical Mfg	Ventilation	Insulation - Ceiling	sqft	Existing	0.01	45	\$1.28	15%	25%	\$0.17	0.01	0.01	Building Energy Simulation Tool
Chemical Mfg	Cooling	Insulation - Ducting	sqft	Existing	0.04	20	\$0.84	15%	25%	\$1.23	0.00	0.01	Building Energy Simulation Tool

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Chemical Mfg	Heating	Insulation - Ducting	sqft	Existing	0.02	20	\$0.84	15%	25%	\$1.23	0.00	0.00	Building Energy Simulation Tool
Chemical Mfg	Ventilation	Insulation - Ducting	sqft	Existing	0.00	20	\$0.84	15%	25%	\$1.23	0.00	0.00	Building Energy Simulation Tool
Chemical Mfg	Cooling	Insulation - Wall Cavity	sqft	Existing	0.00	45	\$0.15	45%	50%	\$0.02	0.00	0.00	Building Energy Simulation Tool
Chemical Mfg	Heating	Insulation - Wall Cavity	sqft	Existing	0.64	45	\$0.15	45%	50%	\$0.02	0.04	0.04	Building Energy Simulation Tool
Chemical Mfg	Ventilation	Insulation - Wall Cavity	sqft	Existing	0.02	45	\$0.15	45%	50%	\$0.02	0.01	0.01	Building Energy Simulation Tool
Chemical Mfg	Cooling	HVAC - Duct Repair and Sealing	sqft	Existing	0.01	18	\$0.00	15%	25%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Chemical Mfg	Heating	HVAC - Duct Repair and Sealing	sqft	Existing	0.04	18	\$0.00	15%	25%	\$0.00	0.01	0.01	Building Energy Simulation Tool
Chemical Mfg	Ventilation	HVAC - Duct Repair and Sealing	sqft	Existing	0.00	18	\$0.00	15%	25%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Chemical Mfg	Cooling	Chiller - Chilled Water Reset	sqft	Existing	0.04	10	\$0.01	15%	45%	\$0.03	0.00	0.01	AEG-BEST
Chemical Mfg	Cooling	Chiller - Chilled Water Variable-Flow System	sqft	Existing	0.21	15	\$0.50	15%	60%	\$0.24	0.03	0.05	AEG-BEST
Chemical Mfg	Cooling	Chiller - Variable Speed Fans	sqft	Existing	0.08	15	\$0.03	15%	75%	\$0.04	0.02	0.02	New Jersey TRM
Chemical Mfg	Cooling	HVAC - Economizer	sqft	Existing	0.10	10	\$0.25	18%	30%	\$0.30	0.02	0.02	AEG-BEST
Chemical Mfg	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.25	15%	35%	\$11.12	0.00	0.00	7th Power Plan
Chemical Mfg	Cooling	Destratification Fans (HVLS)	sqft	Existing	0.13	15	\$0.63	15%	50%	\$0.05	0.06	0.09	AEG Research
Chemical Mfg	Heating	Destratification Fans (HVLS)	sqft	Existing	1.16	15	\$0.63	15%	50%	\$0.05	0.50	0.66	AEG Research
Chemical Mfg	Cooling	RTU - Maintenance	sqft	Existing	0.07	3	\$0.07	15%	75%	\$0.32	0.03	0.05	AEG Research
Chemical Mfg	Cooling	Thermostat - WiFi/Interactive	sqft	Existing	0.22	5	\$0.66	5%	15%	\$0.11	0.03	0.04	7th Power Plan
Chemical Mfg	Heating	Thermostat - WiFi/Interactive	sqft	Existing	0.99	5	\$0.66	5%	15%	\$0.11	0.11	0.14	7th Power Plan
Chemical Mfg	Ventilation	Thermostat - WiFi/Interactive	sqft	Existing	0.03	5	\$0.66	5%	15%	\$0.11	0.02	0.03	7th Power Plan
Chemical Mfg	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.18	15	\$0.35	7%	33%	\$0.17	0.18	0.27	7th Power Plan
Chemical Mfg	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.25	15	\$0.58	7%	33%	\$0.20	0.24	0.37	7th Power Plan

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Chemical Mfg	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	Existing	0.02	15	\$0.00	1%	2%	\$0.01	0.00	0.00	7th Power Plan
Chemical Mfg	Interior Lighting	Interior Lighting - Timeclocks and Timers	sqft	Existing	0.00	8	\$0.00	7%	7%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Chemical Mfg	Interior Lighting	Interior Lighting - Skylights	sqft	Existing	0.00	15	\$1.01	15%	23%	\$0.00	0.00	0.00	AEG Research
Chemical Mfg	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	sqft	Existing	0.03	16	\$1.81	5%	40%	\$5.03	0.03	0.06	7th Power Plan
Chemical Mfg	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	Existing	0.03	11	\$0.00	15%	50%	\$0.01	0.03	0.06	Illinois TRM
Chemical Mfg	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	sqft	Existing	0.04	8	\$0.03	15%	25%	\$0.10	0.04	0.07	7th Power Plan
Chemical Mfg	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	Existing	0.02	8	\$0.02	33%	60%	\$0.11	0.05	0.10	Pacific Gas and Electric Research
Chemical Mfg	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	Existing	0.03	7	\$1.19	15%	30%	\$5.85	0.03	0.07	AEG Research
Chemical Mfg	Process	Process - Conductivity Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Chemical Mfg	Process	Process - Timers and Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Chemical Mfg	Motors	Process - Timers and Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Chemical Mfg	Process	Refrigeration - Floating Head Pressure	employee	Existing	20.42	15	\$23.85	20%	50%	\$0.13	0.16	0.21	RTF Workbook
Chemical Mfg	Process	Refrigeration - System Optimization	employee	Existing	32.78	15	\$16.79	20%	50%	\$0.06	0.26	0.34	AEG Research
Chemical Mfg	Motors	Pumping System - Equipment Upgrade	employee	Existing	216.83	10	\$39.38	9%	38%	\$0.06	1.61	2.20	7th Power Plan
Chemical Mfg	Motors	Pumping System - System Optimization	employee	Existing	159.27	12	\$60.01	9%	38%	-\$0.03	1.15	1.53	UNIDO Study on Industrial Energy Efficiency
Chemical Mfg	Motors	Pumping System - Variable Speed Drive	employee	Existing	156.04	10	\$62.44	9%	38%	\$0.05	1.11	1.51	UNIDO Study on Industrial Energy Efficiency
Chemical Mfg	Motors	Fan System - Equipment Upgrade	employee	Existing	54.84	10	\$6.79	9%	38%	\$0.05	0.40	0.52	UNIDO Study on Industrial Energy Efficiency
Chemical Mfg	Motors	Fan System - Flow Optimization	employee	Existing	64.62	10	\$11.23	9%	38%	\$0.02	0.47	0.61	UNIDO Study on Industrial Energy Efficiency
Chemical Mfg	Motors	Fan System - Variable Speed Drive	employee	Existing	92.67	10	\$56.50	9%	38%	\$0.07	0.65	0.90	UNIDO Study on Industrial Energy Efficiency

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Chemical Mfg	Motors	Compressed Air - Equipment Upgrade	employee	Existing	428.63	10	\$37.39	17%	50%	\$0.04	3.80	4.93	7th Power Plan
Chemical Mfg	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	Existing	0.00	15	\$0.00	16%	38%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Chemical Mfg	Motors	Compressed Air - Refrigerated Cycling Dryers	employee	Existing	0.00	10	\$0.00	16%	30%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Chemical Mfg	Motors	Compressed Air - System Controls	employee	Existing	89.24	10	\$26.73	9%	38%	\$0.00	0.66	0.92	UNIDO Study on Industrial Energy Efficiency
Chemical Mfg	Motors	Compressed Air - Leak Management Program	employee	Existing	237.88	10	\$26.87	18%	75%	\$0.05	3.58	4.75	7th Power Plan
Chemical Mfg	Motors	Compressed Air - Variable Speed Drive	employee	Existing	162.70	15	\$163.89	26%	45%	\$0.10	0.79	1.13	UNIDO Study on Industrial Energy Efficiency
Chemical Mfg	Motors	Compressed Air - Low Pressure-Drop Filters	employee	Existing	5.43	10	\$2.53	17%	50%	\$0.06	0.05	0.07	Illinois TRM
Chemical Mfg	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	Existing	33.84	10	\$8.19	17%	50%	\$0.03	0.29	0.40	UNIDO Study on Industrial Energy Efficiency
Chemical Mfg	Motors	Compressed Air - Outside Air Intake	employee	Existing	0.00	20	\$0.00	17%	50%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Chemical Mfg	Motors	Compressed Air - Receiver Capacity Addition	employee	Existing	33.15	15	\$22.53	17%	50%	\$0.07	0.28	0.40	UNIDO Study on Industrial Energy Efficiency
Chemical Mfg	Motors	Material Handling - Variable Speed Drive	employee	Existing	185.48	10	\$84.98	25%	45%	\$0.06	0.92	1.26	7th Power Plan
Chemical Mfg	Motors	Motors - Green Rewind (<100 HP)	employee	Existing	6.59	10	\$3.68	10%	50%	\$0.07	0.33	0.45	7th Power Plan
Chemical Mfg	Motors	Motors - Green Rewind (100 HP+)	employee	Existing	3.76	10	\$1.31	6%	25%	\$0.04	0.09	0.12	7th Power Plan
Chemical Mfg	Motors	Switch from Belt Drive to Direct Drive	employee	Existing	57.82	12	\$16.14	16%	25%	\$0.03	0.70	0.92	2015-mdu-irp-report---volume-iii.pdf
Chemical Mfg	Motors	Motors - Synchronous Belts	employee	Existing	15.09	10	\$4.86	16%	36%	\$0.04	0.39	0.55	7th Power Plan
Chemical Mfg	Miscellaneous	Agriculture - Engine Block Timer	employee	Existing	131.06	3	\$1.94	0%	0%	\$0.01	0.00	0.00	Vermont TRM
Chemical Mfg	Motors	Agriculture - Live Stock Waterer	employee	Existing	504.39	10	\$346.81	0%	0%	\$0.08	0.00	0.00	Ontario Power TRM
Chemical Mfg	Process	Dairy - Milk Precoolers	employee	Existing	136.12	15	\$75.88	0%	0%	\$0.06	0.00	0.00	Ontario Power TRM
Chemical Mfg	Process	Clean Room: Change Filter Strategy	employee	Existing	559.09	15	\$4.94	0%	0%	\$0.00	0.00	0.00	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Chemical Mfg	Process	Clean Room: Chiller Optimize	employee	Existing	40.49	15	\$4.49	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Chemical Mfg	Process	Clean Room: Clean Room HVAC	employee	Existing	24.58	15	\$5.42	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Chemical Mfg	Process	Elec Chip Fab: Solidstate Chiller	employee	Existing	24.50	15	\$17.04	0%	0%	-\$0.08	0.00	0.00	7th Power Plan
Chemical Mfg	Process	Elec Chip Fab: Eliminate Exhaust	employee	Existing	69.89	15	\$17.78	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Chemical Mfg	Process	Elec Chip Fab: Exhaust Injector	employee	Existing	139.32	15	\$85.78	0%	0%	-\$0.11	0.00	0.00	7th Power Plan
Chemical Mfg	Process	Elec Chip Fab: Reduce Gas Pressure	employee	Existing	139.77	15	\$1.72	0%	0%	-\$0.02	0.00	0.00	7th Power Plan
Chemical Mfg	Motors	Panel: Hydraulic Press	employee	Existing	281.49	10	\$84.93	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Chemical Mfg	Motors	Wood: Replace Pneumatic Conveyor	employee	Existing	321.86	10	\$6.36	0%	0%	-\$0.07	0.00	0.00	7th Power Plan
Chemical Mfg	Process	Metal: New Arc Furnace	employee	Existing	219.02	10	\$27.56	0%	0%	-\$2.50	0.00	0.00	7th Power Plan
Chemical Mfg	Process	Paper: Premium Control Large Material	employee	Existing	93.80	10	\$56.55	0%	0%	\$0.08	0.00	0.00	7th Power Plan
Chemical Mfg	Process	Paper: Efficient Pulp Screen	employee	Existing	75.53	10	\$18.63	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Chemical Mfg	Process	Kraft: Effluent Treatment System	employee	Existing	75.53	10	\$7.64	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Chemical Mfg	Motors	Kraft: Efficient Agitator	employee	Existing	523.84	10	\$63.38	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Chemical Mfg	Process	Mech Pulp: Premium Process	employee	Existing	0.84	5	\$0.13	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Chemical Mfg	Motors	Mech Pulp: Refiner Plate Improvement	employee	Existing	4.32	1	\$0.24	0%	0%	\$0.05	0.00	0.00	7th Power Plan
Chemical Mfg	Cooling	Transformer - High Efficiency	employee	Existing	5.71	10	\$19.27	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Chemical Mfg	Heating	Transformer - High Efficiency	employee	Existing	25.54	10	\$19.27	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Chemical Mfg	Ventilation	Transformer - High Efficiency	employee	Existing	0.73	10	\$19.27	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Chemical Mfg	Interior Lighting	Transformer - High Efficiency	employee	Existing	2.41	10	\$19.27	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Chemical Mfg	Exterior Lighting	Transformer - High Efficiency	employee	Existing	0.51	10	\$19.27	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Chemical Mfg	Motors	Transformer - High Efficiency	employee	Existing	54.52	10	\$19.27	15%	15%	\$0.02	0.00	0.00	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Chemical Mfg	Process	Transformer - High Efficiency	employee	Existing	37.57	10	\$19.27	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Chemical Mfg	Miscellaneous	Transformer - High Efficiency	employee	Existing	4.88	10	\$19.27	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Chemical Mfg	Cooling	Strategic Energy Management	employee	Existing	15.69	3	\$118.34	0%	5%	\$0.10	0.00	0.00	AEG Research
Chemical Mfg	Heating	Strategic Energy Management	employee	Existing	73.11	3	\$118.34	0%	5%	\$0.10	0.01	0.02	AEG Research
Chemical Mfg	Ventilation	Strategic Energy Management	employee	Existing	2.08	3	\$118.34	0%	5%	\$0.10	0.00	0.00	AEG Research
Chemical Mfg	Interior Lighting	Strategic Energy Management	employee	Existing	6.85	3	\$118.34	0%	5%	\$0.10	0.01	0.01	AEG Research
Chemical Mfg	Exterior Lighting	Strategic Energy Management	employee	Existing	1.47	3	\$118.34	0%	5%	\$0.10	0.00	0.00	AEG Research
Chemical Mfg	Motors	Strategic Energy Management	employee	Existing	156.07	3	\$118.34	0%	5%	\$0.10	0.18	0.24	AEG Research
Chemical Mfg	Process	Strategic Energy Management	employee	Existing	107.50	3	\$118.34	0%	5%	\$0.10	0.13	0.16	AEG Research
Chemical Mfg	Miscellaneous	Strategic Energy Management	employee	Existing	13.95	3	\$118.34	0%	5%	\$0.10	0.02	0.02	AEG Research
Chemical Mfg	Interior Lighting	Commissioning	employee	Existing	7.90	3	\$192.71	0%	0%	\$0.19	0.00	0.00	AEG Research
Chemical Mfg	Exterior Lighting	Commissioning	employee	Existing	1.69	3	\$192.71	0%	0%	\$0.19	0.00	0.00	AEG Research
Chemical Mfg	Motors	Commissioning	employee	Existing	179.87	3	\$192.71	0%	0%	\$0.19	0.00	0.00	AEG Research
Chemical Mfg	Process	Commissioning	employee	Existing	123.90	3	\$192.71	0%	0%	\$0.19	0.00	0.00	AEG Research
Chemical Mfg	Miscellaneous	Commissioning	employee	Existing	16.07	3	\$192.71	0%	0%	\$0.19	0.00	0.00	AEG Research
Chemical Mfg	Interior Lighting	Retrocommissioning	employee	Existing	8.02	3	\$122.33	5%	39%	\$0.12	0.05	0.09	AEG Research
Chemical Mfg	Exterior Lighting	Retrocommissioning	employee	Existing	1.71	3	\$122.33	5%	39%	\$0.12	0.01	0.02	AEG Research
Chemical Mfg	Motors	Retrocommissioning	employee	Existing	181.72	3	\$122.33	5%	39%	\$0.12	1.44	1.87	AEG Research
Chemical Mfg	Process	Retrocommissioning	employee	Existing	125.22	3	\$122.33	5%	39%	\$0.12	1.05	1.26	AEG Research
Chemical Mfg	Miscellaneous	Retrocommissioning	employee	Existing	16.26	3	\$122.33	5%	39%	\$0.12	0.17	0.16	AEG Research
Chemical Mfg	Motors	Municipal Sewage Treatment	employee	Existing	27.47	12	\$19.80	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Chemical Mfg	Motors	Municipal Water Supply Treatment	employee	Existing	0.00	12	\$0.00	0%	0%	\$0.00	0.00	0.00	7th Power Plan

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Chemical Mfg	Cooling	Insulation - Ceiling	sqft	New	0.10	45	\$1.28	15%	25%	\$0.18	0.00	0.00	Building Energy Simulation Tool
Chemical Mfg	Heating	Insulation - Ceiling	sqft	New	0.43	45	\$1.28	15%	25%	\$0.18	0.01	0.01	Building Energy Simulation Tool
Chemical Mfg	Ventilation	Insulation - Ceiling	sqft	New	0.01	45	\$1.28	15%	25%	\$0.18	0.00	0.00	Building Energy Simulation Tool
Chemical Mfg	Cooling	Insulation - Ducting	sqft	New	0.04	20	\$0.84	15%	25%	\$1.32	0.00	0.00	Building Energy Simulation Tool
Chemical Mfg	Heating	Insulation - Ducting	sqft	New	0.02	20	\$0.84	15%	25%	\$1.32	0.00	0.00	Building Energy Simulation Tool
Chemical Mfg	Ventilation	Insulation - Ducting	sqft	New	0.00	20	\$0.84	15%	25%	\$1.32	0.00	0.00	Building Energy Simulation Tool
Chemical Mfg	Cooling	Insulation - Wall Cavity	sqft	New	0.00	45	\$0.15	45%	50%	\$0.02	0.00	0.00	Building Energy Simulation Tool
Chemical Mfg	Heating	Insulation - Wall Cavity	sqft	New	0.59	45	\$0.15	45%	50%	\$0.02	0.01	0.01	Building Energy Simulation Tool
Chemical Mfg	Ventilation	Insulation - Wall Cavity	sqft	New	0.01	45	\$0.15	45%	50%	\$0.02	0.00	0.00	Building Energy Simulation Tool
Chemical Mfg	Cooling	HVAC - Duct Repair and Sealing	sqft	New	0.01	18	\$0.00	15%	25%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Chemical Mfg	Heating	HVAC - Duct Repair and Sealing	sqft	New	0.04	18	\$0.00	15%	25%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Chemical Mfg	Ventilation	HVAC - Duct Repair and Sealing	sqft	New	0.00	18	\$0.00	15%	25%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Chemical Mfg	Cooling	Chiller - Chilled Water Reset	sqft	New	0.03	10	\$0.01	15%	45%	\$0.04	0.00	0.00	AEG-BEST
Chemical Mfg	Cooling	Chiller - Chilled Water Variable-Flow System	sqft	New	0.17	15	\$0.50	15%	60%	\$0.29	0.00	0.00	AEG-BEST
Chemical Mfg	Cooling	Chiller - Variable Speed Fans	sqft	New	0.06	15	\$0.03	15%	75%	\$0.05	0.00	0.00	New Jersey TRM
Chemical Mfg	Cooling	HVAC - Economizer	sqft	New	0.10	10	\$0.25	18%	30%	\$0.33	0.00	0.00	AEG-BEST
Chemical Mfg	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.25	15%	35%	\$13.02	0.00	0.00	7th Power Plan
Chemical Mfg	Cooling	Destratification Fans (HVLS)	sqft	New	0.12	15	\$0.63	15%	50%	\$0.06	0.01	0.01	AEG Research
Chemical Mfg	Heating	Destratification Fans (HVLS)	sqft	New	1.09	15	\$0.63	15%	50%	\$0.06	0.05	0.06	AEG Research
Chemical Mfg	Cooling	RTU - Maintenance	sqft	New	0.06	3	\$0.07	15%	75%	\$0.33	0.00	0.00	AEG Research
Chemical Mfg	Cooling	Thermostat - WiFi/Interactive	sqft	New	0.21	5	\$0.66	5%	15%	\$0.12	0.00	0.00	7th Power Plan

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Chemical Mfg	Heating	Thermostat - WiFi/Interactive	sqft	New	0.96	5	\$0.66	5%	15%	\$0.12	0.00	0.00	7th Power Plan
Chemical Mfg	Ventilation	Thermostat - WiFi/Interactive	sqft	New	0.02	5	\$0.66	5%	15%	\$0.12	0.00	0.00	7th Power Plan
Chemical Mfg	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.16	15	\$0.35	22%	41%	\$0.17	0.04	0.06	7th Power Plan
Chemical Mfg	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.22	15	\$0.58	22%	41%	\$0.20	0.06	0.08	7th Power Plan
Chemical Mfg	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	New	0.02	15	\$0.00	1%	2%	\$0.01	0.00	0.00	7th Power Plan
Chemical Mfg	Interior Lighting	Interior Lighting - Timeclocks and Timers	sqft	New	0.00	8	\$0.00	7%	7%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Chemical Mfg	Interior Lighting	Interior Lighting - Skylights	sqft	New	0.00	15	\$1.01	18%	24%	\$0.00	0.00	0.00	AEG Research
Chemical Mfg	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	sqft	New	0.03	16	\$1.81	5%	40%	\$5.12	0.00	0.00	7th Power Plan
Chemical Mfg	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	New	0.03	11	\$0.00	15%	50%	\$0.01	0.00	0.00	Illinois TRM
Chemical Mfg	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	sqft	New	0.04	8	\$0.03	15%	25%	\$0.11	0.00	0.00	7th Power Plan
Chemical Mfg	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	New	0.02	8	\$0.02	44%	60%	\$0.11	0.00	0.00	Pacific Gas and Electric Research
Chemical Mfg	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	New	0.02	7	\$1.19	15%	30%	\$6.07	0.00	0.00	AEG Research
Chemical Mfg	Process	Process - Conductivity Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Chemical Mfg	Process	Process - Timers and Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Chemical Mfg	Motors	Process - Timers and Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Chemical Mfg	Process	Refrigeration - Floating Head Pressure	employee	New	20.46	15	\$16.85	20%	50%	\$0.09	0.02	0.02	RTF Workbook
Chemical Mfg	Process	Refrigeration - System Optimization	employee	New	32.78	15	\$5.89	20%	50%	\$0.02	0.03	0.03	AEG Research
Chemical Mfg	Motors	Pumping System - Equipment Upgrade	employee	New	225.11	10	\$39.38	9%	38%	\$0.06	0.13	0.17	7th Power Plan
Chemical Mfg	Motors	Pumping System - System Optimization	employee	New	167.31	12	\$60.01	9%	38%	-\$0.03	0.15	0.18	UNIDO Study on Industrial Energy Efficiency

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Chemical Mfg	Motors	Pumping System - Variable Speed Drive	employee	New	165.73	10	\$62.44	9%	38%	\$0.05	0.13	0.16	UNIDO Study on Industrial Energy Efficiency
Chemical Mfg	Motors	Fan System - Equipment Upgrade	employee	New	56.75	10	\$6.79	9%	38%	\$0.05	0.04	0.05	UNIDO Study on Industrial Energy Efficiency
Chemical Mfg	Motors	Fan System - Flow Optimization	employee	New	66.97	10	\$11.23	9%	38%	\$0.02	0.05	0.06	UNIDO Study on Industrial Energy Efficiency
Chemical Mfg	Motors	Fan System - Variable Speed Drive	employee	New	99.73	10	\$56.50	9%	38%	\$0.07	0.08	0.10	UNIDO Study on Industrial Energy Efficiency
Chemical Mfg	Motors	Compressed Air - Equipment Upgrade	employee	New	428.63	10	\$37.39	17%	50%	\$0.04	0.29	0.37	7th Power Plan
Chemical Mfg	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	New	0.00	15	\$0.00	16%	38%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Chemical Mfg	Motors	Compressed Air - Refrigerated Cycling Dryers	employee	New	0.00	10	\$0.00	16%	30%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Chemical Mfg	Motors	Compressed Air - System Controls	employee	New	94.14	10	\$26.73	9%	38%	\$0.00	0.06	0.07	UNIDO Study on Industrial Energy Efficiency
Chemical Mfg	Motors	Compressed Air - Leak Management Program	employee	New	242.05	10	\$26.87	18%	75%	\$0.05	0.28	0.36	7th Power Plan
Chemical Mfg	Motors	Compressed Air - Variable Speed Drive	employee	New	174.22	15	\$163.89	26%	45%	\$0.10	0.09	0.11	UNIDO Study on Industrial Energy Efficiency
Chemical Mfg	Motors	Compressed Air - Low Pressure-Drop Filters	employee	New	5.81	10	\$2.53	17%	50%	\$0.06	0.00	0.01	Illinois TRM
Chemical Mfg	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	New	35.49	10	\$8.19	17%	50%	\$0.03	0.02	0.03	UNIDO Study on Industrial Energy Efficiency
Chemical Mfg	Motors	Compressed Air - Outside Air Intake	employee	New	0.00	20	\$0.00	17%	50%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Chemical Mfg	Motors	Compressed Air - Receiver Capacity Addition	employee	New	35.16	15	\$22.53	17%	50%	\$0.07	0.03	0.04	UNIDO Study on Industrial Energy Efficiency
Chemical Mfg	Motors	Material Handling - Variable Speed Drive	employee	New	197.85	10	\$84.98	25%	45%	\$0.06	0.11	0.13	7th Power Plan
Chemical Mfg	Motors	Motors - Green Rewind (<100 HP)	employee	New	7.09	10	\$3.68	10%	50%	\$0.07	0.04	0.05	7th Power Plan
Chemical Mfg	Motors	Motors - Green Rewind (100 HP+)	employee	New	3.99	10	\$1.31	6%	25%	\$0.04	0.01	0.01	7th Power Plan
Chemical Mfg	Motors	Switch from Belt Drive to Direct Drive	employee	New	60.49	12	\$16.14	16%	25%	\$0.03	0.09	0.11	2015-mdu-irp-report---volume-iii.pdf
Chemical Mfg	Motors	Motors - Synchronous Belts	employee	New	15.97	10	\$4.86	16%	36%	\$0.04	0.03	0.04	7th Power Plan

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Chemical Mfg	Miscellaneous	Agriculture - Engine Block Timer	employee	New	131.06	3	\$1.94	0%	0%	\$0.01	0.00	0.00	Vermont TRM
Chemical Mfg	Motors	Agriculture - Live Stock Waterer	employee	New	544.25	10	\$346.81	0%	0%	\$0.08	0.00	0.00	Ontario Power TRM
Chemical Mfg	Process	Dairy - Milk Precoolers	employee	New	136.37	15	\$75.88	0%	0%	\$0.06	0.00	0.00	Ontario Power TRM
Chemical Mfg	Process	Clean Room: Change Filter Strategy	employee	New	559.09	15	\$4.94	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Chemical Mfg	Process	Clean Room: Chiller Optimize	employee	New	40.49	15	\$4.49	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Chemical Mfg	Process	Clean Room: Clean Room HVAC	employee	New	24.55	15	\$5.42	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Chemical Mfg	Process	Elec Chip Fab: Solidstate Chiller	employee	New	24.55	15	\$17.04	0%	0%	-\$0.08	0.00	0.00	7th Power Plan
Chemical Mfg	Process	Elec Chip Fab: Eliminate Exhaust	employee	New	69.79	15	\$17.78	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Chemical Mfg	Process	Elec Chip Fab: Exhaust Injector	employee	New	139.57	15	\$85.78	0%	0%	-\$0.11	0.00	0.00	7th Power Plan
Chemical Mfg	Process	Elec Chip Fab: Reduce Gas Pressure	employee	New	139.77	15	\$1.72	0%	0%	-\$0.02	0.00	0.00	7th Power Plan
Chemical Mfg	Motors	Panel: Hydraulic Press	employee	New	297.90	10	\$84.93	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Chemical Mfg	Motors	Wood: Replace Pneumatic Conveyor	employee	New	321.86	10	\$6.36	0%	0%	-\$0.07	0.00	0.00	7th Power Plan
Chemical Mfg	Process	Metal: New Arc Furnace	employee	New	218.71	10	\$27.56	0%	0%	-\$2.50	0.00	0.00	7th Power Plan
Chemical Mfg	Process	Paper: Premium Control Large Material	employee	New	94.08	10	\$56.55	0%	0%	\$0.08	0.00	0.00	7th Power Plan
Chemical Mfg	Process	Paper: Efficient Pulp Screen	employee	New	75.42	10	\$18.63	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Chemical Mfg	Process	Kraft: Effluent Treatment System	employee	New	75.42	10	\$7.64	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Chemical Mfg	Motors	Kraft: Efficient Agitator	employee	New	541.32	10	\$63.38	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Chemical Mfg	Process	Mech Pulp: Premium Process	employee	New	0.84	5	\$0.13	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Chemical Mfg	Motors	Mech Pulp: Refiner Plate Improvement	employee	New	4.67	1	\$0.24	0%	0%	\$0.05	0.00	0.00	7th Power Plan
Chemical Mfg	Cooling	Transformer - High Efficiency	employee	New	5.26	10	\$18.91	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Chemical Mfg	Heating	Transformer - High Efficiency	employee	New	24.70	10	\$18.91	15%	15%	\$0.02	0.00	0.00	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Chemical Mfg	Ventilation	Transformer - High Efficiency	employee	New	0.52	10	\$18.91	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Chemical Mfg	Interior Lighting	Transformer - High Efficiency	employee	New	2.12	10	\$18.91	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Chemical Mfg	Exterior Lighting	Transformer - High Efficiency	employee	New	0.46	10	\$18.91	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Chemical Mfg	Motors	Transformer - High Efficiency	employee	New	58.82	10	\$18.91	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Chemical Mfg	Process	Transformer - High Efficiency	employee	New	37.68	10	\$18.91	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Chemical Mfg	Miscellaneous	Transformer - High Efficiency	employee	New	4.63	10	\$18.91	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Chemical Mfg	Cooling	Strategic Energy Management	employee	New	14.96	3	\$116.13	0%	5%	\$0.10	0.00	0.00	AEG Research
Chemical Mfg	Heating	Strategic Energy Management	employee	New	71.13	3	\$116.13	0%	5%	\$0.10	0.00	0.00	AEG Research
Chemical Mfg	Ventilation	Strategic Energy Management	employee	New	1.51	3	\$116.13	0%	5%	\$0.10	0.00	0.00	AEG Research
Chemical Mfg	Interior Lighting	Strategic Energy Management	employee	New	6.11	3	\$116.13	0%	5%	\$0.10	0.00	0.00	AEG Research
Chemical Mfg	Exterior Lighting	Strategic Energy Management	employee	New	1.33	3	\$116.13	0%	5%	\$0.10	0.00	0.00	AEG Research
Chemical Mfg	Motors	Strategic Energy Management	employee	New	169.93	3	\$116.13	0%	5%	\$0.10	0.00	0.00	AEG Research
Chemical Mfg	Process	Strategic Energy Management	employee	New	108.84	3	\$116.13	0%	5%	\$0.10	0.00	0.00	AEG Research
Chemical Mfg	Miscellaneous	Strategic Energy Management	employee	New	13.37	3	\$116.13	0%	5%	\$0.10	0.00	0.00	AEG Research
Chemical Mfg	Interior Lighting	Commissioning	employee	New	7.03	3	\$192.33	5%	39%	\$0.19	0.00	0.00	AEG Research
Chemical Mfg	Exterior Lighting	Commissioning	employee	New	1.53	3	\$192.33	5%	39%	\$0.19	0.00	0.00	AEG Research
Chemical Mfg	Motors	Commissioning	employee	New	196.03	3	\$192.33	5%	39%	\$0.19	0.01	0.02	AEG Research
Chemical Mfg	Process	Commissioning	employee	New	125.56	3	\$192.33	5%	39%	\$0.19	0.01	0.01	AEG Research
Chemical Mfg	Miscellaneous	Commissioning	employee	New	15.43	3	\$192.33	5%	39%	\$0.19	0.00	0.00	AEG Research
Chemical Mfg	Interior Lighting	Retrocommissioning	employee	New	7.05	3	\$122.09	0%	0%	\$0.12	0.00	0.00	AEG Research

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Chemical Mfg	Exterior Lighting	Retrocommissioning	employee	New	1.53	3	\$122.09	0%	0%	\$0.12	0.00	0.00	AEG Research
Chemical Mfg	Motors	Retrocommissioning	employee	New	196.08	3	\$122.09	0%	0%	\$0.12	0.00	0.00	AEG Research
Chemical Mfg	Process	Retrocommissioning	employee	New	125.59	3	\$122.09	0%	0%	\$0.12	0.00	0.00	AEG Research
Chemical Mfg	Miscellaneous	Retrocommissioning	employee	New	15.43	3	\$122.09	0%	0%	\$0.12	0.00	0.00	AEG Research
Chemical Mfg	Motors	Municipal Sewage Treatment	employee	New	29.52	12	\$19.80	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Chemical Mfg	Motors	Municipal Water Supply Treatment	employee	New	0.00	12	\$0.00	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Cooling	Insulation - Ceiling	sqft	Existing	0.10	45	\$1.28	15%	25%	\$0.17	0.28	0.36	Building Energy Simulation Tool
Electronic Equipment Mfg	Heating	Insulation - Ceiling	sqft	Existing	0.45	45	\$1.28	15%	25%	\$0.17	1.13	1.40	Building Energy Simulation Tool
Electronic Equipment Mfg	Ventilation	Insulation - Ceiling	sqft	Existing	0.01	45	\$1.28	15%	25%	\$0.17	0.19	0.27	Building Energy Simulation Tool
Electronic Equipment Mfg	Cooling	Insulation - Ducting	sqft	Existing	0.04	20	\$0.84	15%	25%	\$1.23	0.10	0.14	Building Energy Simulation Tool
Electronic Equipment Mfg	Heating	Insulation - Ducting	sqft	Existing	0.02	20	\$0.84	15%	25%	\$1.23	0.05	0.06	Building Energy Simulation Tool
Electronic Equipment Mfg	Ventilation	Insulation - Ducting	sqft	Existing	0.00	20	\$0.84	15%	25%	\$1.23	0.01	0.01	Building Energy Simulation Tool
Electronic Equipment Mfg	Cooling	Insulation - Wall Cavity	sqft	Existing	0.00	45	\$0.15	45%	50%	\$0.02	0.00	0.00	Building Energy Simulation Tool
Electronic Equipment Mfg	Heating	Insulation - Wall Cavity	sqft	Existing	0.64	45	\$0.15	45%	50%	\$0.02	0.81	0.98	Building Energy Simulation Tool
Electronic Equipment Mfg	Ventilation	Insulation - Wall Cavity	sqft	Existing	0.02	45	\$0.15	45%	50%	\$0.02	0.13	0.18	Building Energy Simulation Tool
Electronic Equipment Mfg	Cooling	HVAC - Duct Repair and Sealing	sqft	Existing	0.01	18	\$0.00	15%	25%	\$0.00	0.04	0.05	Building Energy Simulation Tool
Electronic Equipment Mfg	Heating	HVAC - Duct Repair and Sealing	sqft	Existing	0.04	18	\$0.00	15%	25%	\$0.00	0.11	0.14	Building Energy Simulation Tool
Electronic Equipment Mfg	Ventilation	HVAC - Duct Repair and Sealing	sqft	Existing	0.00	18	\$0.00	15%	25%	\$0.00	0.02	0.03	Building Energy Simulation Tool
Electronic Equipment Mfg	Cooling	Chiller - Chilled Water Reset	sqft	Existing	0.04	10	\$0.01	15%	45%	\$0.03	0.09	0.13	AEG-BEST
Electronic Equipment Mfg	Cooling	Chiller - Chilled Water Variable-Flow System	sqft	Existing	0.21	15	\$0.50	15%	60%	\$0.24	0.71	1.04	AEG-BEST

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Electronic Equipment Mfg	Cooling	Chiller - Variable Speed Fans	sqft	Existing	0.08	15	\$0.03	15%	75%	\$0.04	0.37	0.52	New Jersey TRM
Electronic Equipment Mfg	Cooling	HVAC - Economizer	sqft	Existing	0.10	10	\$0.25	18%	30%	\$0.30	0.35	0.52	AEG-BEST
Electronic Equipment Mfg	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.25	15%	35%	\$11.12	0.06	0.11	7th Power Plan
Electronic Equipment Mfg	Cooling	Destratification Fans (HVLS)	sqft	Existing	0.13	15	\$0.63	15%	50%	\$0.05	1.38	1.94	AEG Research
Electronic Equipment Mfg	Heating	Destratification Fans (HVLS)	sqft	Existing	1.16	15	\$0.63	15%	50%	\$0.05	11.14	14.56	AEG Research
Electronic Equipment Mfg	Cooling	RTU - Maintenance	sqft	Existing	0.07	3	\$0.07	15%	75%	\$0.32	0.74	1.13	AEG Research
Electronic Equipment Mfg	Cooling	Thermostat - WiFi/Interactive	sqft	Existing	0.22	5	\$0.66	5%	15%	\$0.11	0.60	0.79	7th Power Plan
Electronic Equipment Mfg	Heating	Thermostat - WiFi/Interactive	sqft	Existing	0.99	5	\$0.66	5%	15%	\$0.11	2.48	3.09	7th Power Plan
Electronic Equipment Mfg	Ventilation	Thermostat - WiFi/Interactive	sqft	Existing	0.03	5	\$0.66	5%	15%	\$0.11	0.41	0.60	7th Power Plan
Electronic Equipment Mfg	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.18	15	\$0.35	7%	33%	\$0.17	2.59	3.89	7th Power Plan
Electronic Equipment Mfg	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.25	15	\$0.58	7%	33%	\$0.20	3.44	5.33	7th Power Plan
Electronic Equipment Mfg	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	Existing	0.02	15	\$0.00	1%	2%	\$0.01	0.01	0.03	7th Power Plan
Electronic Equipment Mfg	Interior Lighting	Interior Lighting - Timeclocks and Timers	sqft	Existing	0.00	8	\$0.00	7%	7%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Electronic Equipment Mfg	Interior Lighting	Interior Lighting - Skylights	sqft	Existing	0.00	15	\$1.01	15%	23%	\$0.00	0.00	0.00	AEG Research
Electronic Equipment Mfg	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	sqft	Existing	0.03	16	\$1.81	5%	40%	\$5.03	0.38	0.81	7th Power Plan
Electronic Equipment Mfg	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	Existing	0.03	11	\$0.00	15%	50%	\$0.01	0.44	0.82	Illinois TRM
Electronic Equipment Mfg	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	sqft	Existing	0.04	8	\$0.03	15%	25%	\$0.10	0.51	1.01	7th Power Plan
Electronic Equipment Mfg	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	Existing	0.02	8	\$0.02	33%	60%	\$0.11	0.71	1.45	Pacific Gas and Electric Research
Electronic Equipment Mfg	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	Existing	0.03	7	\$1.19	15%	30%	\$5.85	0.44	0.96	AEG Research

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Electronic Equipment Mfg	Process	Process - Conductivity Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Process	Process - Timers and Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Motors	Process - Timers and Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Process	Refrigeration - Floating Head Pressure	employee	Existing	24.60	15	\$29.99	20%	50%	\$0.13	0.98	1.32	RTF Workbook
Electronic Equipment Mfg	Process	Refrigeration - System Optimization	employee	Existing	39.95	15	\$21.12	20%	50%	\$0.06	1.59	2.13	AEG Research
Electronic Equipment Mfg	Motors	Pumping System - Equipment Upgrade	employee	Existing	18.74	10	\$3.34	9%	38%	\$0.06	0.72	0.96	7th Power Plan
Electronic Equipment Mfg	Motors	Pumping System - System Optimization	employee	Existing	13.91	12	\$5.09	9%	38%	-\$0.03	0.52	0.67	UNIDO Study on Industrial Energy Efficiency
Electronic Equipment Mfg	Motors	Pumping System - Variable Speed Drive	employee	Existing	13.75	10	\$5.29	9%	38%	\$0.05	0.51	0.67	UNIDO Study on Industrial Energy Efficiency
Electronic Equipment Mfg	Motors	Fan System - Equipment Upgrade	employee	Existing	16.58	10	\$2.01	9%	38%	\$0.05	0.62	0.80	UNIDO Study on Industrial Energy Efficiency
Electronic Equipment Mfg	Motors	Fan System - Flow Optimization	employee	Existing	19.55	10	\$3.33	9%	38%	\$0.02	0.73	0.94	UNIDO Study on Industrial Energy Efficiency
Electronic Equipment Mfg	Motors	Fan System - Variable Speed Drive	employee	Existing	28.56	10	\$16.77	9%	38%	\$0.07	1.04	1.40	UNIDO Study on Industrial Energy Efficiency
Electronic Equipment Mfg	Motors	Compressed Air - Equipment Upgrade	employee	Existing	99.23	10	\$8.66	17%	50%	\$0.04	4.49	5.82	7th Power Plan
Electronic Equipment Mfg	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	Existing	0.00	15	\$0.00	16%	38%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Electronic Equipment Mfg	Motors	Compressed Air - Refrigerated Cycling Dryers	employee	Existing	0.00	10	\$0.00	16%	30%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Electronic Equipment Mfg	Motors	Compressed Air - System Controls	employee	Existing	21.43	10	\$6.19	9%	38%	\$0.00	0.81	1.11	UNIDO Study on Industrial Energy Efficiency
Electronic Equipment Mfg	Motors	Compressed Air - Leak Management Program	employee	Existing	55.60	10	\$6.22	18%	75%	\$0.05	4.28	5.64	7th Power Plan
Electronic Equipment Mfg	Motors	Compressed Air - Variable Speed Drive	employee	Existing	39.04	15	\$37.94	26%	45%	\$0.10	0.98	1.36	UNIDO Study on Industrial Energy Efficiency
Electronic Equipment Mfg	Motors	Compressed Air - Low Pressure-Drop Filters	employee	Existing	1.30	10	\$0.58	17%	50%	\$0.06	0.06	0.08	Illinois TRM
Electronic Equipment Mfg	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	Existing	8.07	10	\$1.90	17%	50%	\$0.03	0.36	0.49	UNIDO Study on Industrial Energy Efficiency

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Electronic Equipment Mfg	Motors	Compressed Air - Outside Air Intake	employee	Existing	0.00	20	\$0.00	17%	50%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Electronic Equipment Mfg	Motors	Compressed Air - Receiver Capacity Addition	employee	Existing	7.98	15	\$5.22	17%	50%	\$0.07	0.35	0.48	UNIDO Study on Industrial Energy Efficiency
Electronic Equipment Mfg	Motors	Material Handling - Variable Speed Drive	employee	Existing	155.05	10	\$67.87	25%	45%	\$0.06	4.01	5.30	7th Power Plan
Electronic Equipment Mfg	Motors	Motors - Green Rewind (<100 HP)	employee	Existing	2.93	10	\$1.57	10%	50%	\$0.07	0.60	0.81	7th Power Plan
Electronic Equipment Mfg	Motors	Motors - Green Rewind (100 HP+)	employee	Existing	1.67	10	\$0.56	6%	25%	\$0.04	0.16	0.22	7th Power Plan
Electronic Equipment Mfg	Motors	Switch from Belt Drive to Direct Drive	employee	Existing	25.47	12	\$6.90	16%	25%	\$0.03	1.26	1.64	2015-mdu-irp-report---volume-iii.pdf
Electronic Equipment Mfg	Motors	Motors - Synchronous Belts	employee	Existing	6.71	10	\$2.08	16%	36%	\$0.04	0.71	0.97	7th Power Plan
Electronic Equipment Mfg	Miscellaneous	Agriculture - Engine Block Timer	employee	Existing	355.14	3	\$5.25	0%	0%	\$0.01	0.00	0.00	Vermont TRM
Electronic Equipment Mfg	Motors	Agriculture - Live Stock Waterer	employee	Existing	44.43	10	\$29.39	0%	0%	\$0.08	0.00	0.00	Ontario Power TRM
Electronic Equipment Mfg	Process	Dairy - Milk Precoolers	employee	Existing	165.67	15	\$95.42	0%	0%	\$0.06	0.00	0.00	Ontario Power TRM
Electronic Equipment Mfg	Process	Clean Room: Change Filter Strategy	employee	Existing	51.47	15	\$0.46	15%	75%	\$0.00	4.09	5.17	7th Power Plan
Electronic Equipment Mfg	Process	Clean Room: Chiller Optimize	employee	Existing	50.23	15	\$5.65	15%	75%	\$0.01	3.97	5.06	7th Power Plan
Electronic Equipment Mfg	Process	Clean Room: Clean Room HVAC	employee	Existing	30.19	15	\$6.82	15%	75%	\$0.02	2.38	3.05	7th Power Plan
Electronic Equipment Mfg	Process	Elec Chip Fab: Solidstate Chiller	employee	Existing	29.73	15	\$21.42	15%	75%	-\$0.08	2.39	3.21	7th Power Plan
Electronic Equipment Mfg	Process	Elec Chip Fab: Eliminate Exhaust	employee	Existing	6.26	15	\$1.64	15%	75%	\$0.03	0.50	0.67	7th Power Plan
Electronic Equipment Mfg	Process	Elec Chip Fab: Exhaust Injector	employee	Existing	12.45	15	\$7.92	15%	75%	-\$0.11	1.00	1.34	7th Power Plan
Electronic Equipment Mfg	Process	Elec Chip Fab: Reduce Gas Pressure	employee	Existing	12.91	15	\$0.16	15%	75%	-\$0.02	0.00	1.37	7th Power Plan
Electronic Equipment Mfg	Motors	Panel: Hydraulic Press	employee	Existing	234.52	10	\$67.83	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Motors	Wood: Replace Pneumatic Conveyor	employee	Existing	257.05	10	\$5.08	0%	0%	-\$0.07	0.00	0.00	7th Power Plan

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Electronic Equipment Mfg	Process	Metal: New Arc Furnace	employee	Existing	323.05	10	\$41.88	0%	0%	-\$2.50	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Process	Paper: Premium Control Large Material	employee	Existing	78.65	10	\$49.52	0%	0%	\$0.08	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Process	Paper: Efficient Pulp Screen	employee	Existing	64.11	10	\$16.31	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Process	Kraft: Effluent Treatment System	employee	Existing	64.61	10	\$6.69	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Motors	Kraft: Efficient Agitator	employee	Existing	426.30	10	\$50.62	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Process	Mech Pulp: Premium Process	employee	Existing	0.71	5	\$0.11	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Motors	Mech Pulp: Refiner Plate Improvement	employee	Existing	3.59	1	\$0.19	0%	0%	\$0.05	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Cooling	Transformer - High Efficiency	employee	Existing	24.74	10	\$30.46	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Heating	Transformer - High Efficiency	employee	Existing	110.61	10	\$30.46	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Ventilation	Transformer - High Efficiency	employee	Existing	3.15	10	\$30.46	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Interior Lighting	Transformer - High Efficiency	employee	Existing	6.75	10	\$30.46	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Exterior Lighting	Transformer - High Efficiency	employee	Existing	1.44	10	\$30.46	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Motors	Transformer - High Efficiency	employee	Existing	19.39	10	\$30.46	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Process	Transformer - High Efficiency	employee	Existing	31.50	10	\$30.46	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Miscellaneous	Transformer - High Efficiency	employee	Existing	13.22	10	\$30.46	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Cooling	Strategic Energy Management	employee	Existing	67.95	3	\$187.05	0%	5%	\$0.10	0.07	0.10	AEG Research
Electronic Equipment Mfg	Heating	Strategic Energy Management	employee	Existing	316.64	3	\$187.05	0%	5%	\$0.10	0.32	0.40	AEG Research
Electronic Equipment Mfg	Ventilation	Strategic Energy Management	employee	Existing	9.02	3	\$187.05	0%	5%	\$0.10	0.05	0.08	AEG Research
Electronic Equipment Mfg	Interior Lighting	Strategic Energy Management	employee	Existing	19.23	3	\$187.05	0%	5%	\$0.10	0.09	0.16	AEG Research

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Electronic Equipment Mfg	Exterior Lighting	Strategic Energy Management	employee	Existing	4.12	3	\$187.05	0%	5%	\$0.10	0.02	0.04	AEG Research
Electronic Equipment Mfg	Motors	Strategic Energy Management	employee	Existing	55.50	3	\$187.05	0%	5%	\$0.10	0.33	0.43	AEG Research
Electronic Equipment Mfg	Process	Strategic Energy Management	employee	Existing	90.16	3	\$187.05	0%	5%	\$0.10	0.55	0.69	AEG Research
Electronic Equipment Mfg	Miscellaneous	Strategic Energy Management	employee	Existing	37.79	3	\$187.05	0%	5%	\$0.10	0.30	0.28	AEG Research
Electronic Equipment Mfg	Interior Lighting	Commissioning	employee	Existing	22.16	3	\$122.21	0%	0%	\$0.16	0.00	0.00	AEG Research
Electronic Equipment Mfg	Exterior Lighting	Commissioning	employee	Existing	4.74	3	\$122.21	0%	0%	\$0.16	0.00	0.00	AEG Research
Electronic Equipment Mfg	Motors	Commissioning	employee	Existing	63.96	3	\$122.21	0%	0%	\$0.16	0.00	0.00	AEG Research
Electronic Equipment Mfg	Process	Commissioning	employee	Existing	103.90	3	\$122.21	0%	0%	\$0.16	0.00	0.00	AEG Research
Electronic Equipment Mfg	Miscellaneous	Commissioning	employee	Existing	43.55	3	\$122.21	0%	0%	\$0.16	0.00	0.00	AEG Research
Electronic Equipment Mfg	Interior Lighting	Retrocommissioning	employee	Existing	22.51	3	\$77.58	5%	39%	\$0.10	0.74	1.29	AEG Research
Electronic Equipment Mfg	Exterior Lighting	Retrocommissioning	employee	Existing	4.79	3	\$77.58	5%	39%	\$0.10	0.16	0.28	AEG Research
Electronic Equipment Mfg	Motors	Retrocommissioning	employee	Existing	64.62	3	\$77.58	5%	39%	\$0.10	2.66	3.38	AEG Research
Electronic Equipment Mfg	Process	Retrocommissioning	employee	Existing	105.00	3	\$77.58	5%	39%	\$0.10	4.40	5.44	AEG Research
Electronic Equipment Mfg	Miscellaneous	Retrocommissioning	employee	Existing	44.07	3	\$77.58	5%	39%	\$0.10	2.42	2.22	AEG Research
Electronic Equipment Mfg	Motors	Municipal Sewage Treatment	employee	Existing	2.42	12	\$1.68	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Motors	Municipal Water Supply Treatment	employee	Existing	0.00	12	\$0.00	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Cooling	Insulation - Ceiling	sqft	New	0.09	45	\$1.28	15%	25%	\$0.18	0.04	0.05	Building Energy Simulation Tool
Electronic Equipment Mfg	Heating	Insulation - Ceiling	sqft	New	0.44	45	\$1.28	15%	25%	\$0.18	0.18	0.20	Building Energy Simulation Tool
Electronic Equipment Mfg	Ventilation	Insulation - Ceiling	sqft	New	0.01	45	\$1.28	15%	25%	\$0.18	0.03	0.03	Building Energy Simulation Tool

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Electronic Equipment Mfg	Cooling	Insulation - Ducting	sqft	New	0.04	20	\$0.84	15%	25%	\$1.32	0.02	0.02	Building Energy Simulation Tool
Electronic Equipment Mfg	Heating	Insulation - Ducting	sqft	New	0.02	20	\$0.84	15%	25%	\$1.32	0.01	0.01	Building Energy Simulation Tool
Electronic Equipment Mfg	Ventilation	Insulation - Ducting	sqft	New	0.00	20	\$0.84	15%	25%	\$1.32	0.00	0.00	Building Energy Simulation Tool
Electronic Equipment Mfg	Cooling	Insulation - Wall Cavity	sqft	New	0.00	45	\$0.15	45%	50%	\$0.02	0.00	0.00	Building Energy Simulation Tool
Electronic Equipment Mfg	Heating	Insulation - Wall Cavity	sqft	New	0.59	45	\$0.15	45%	50%	\$0.02	0.12	0.14	Building Energy Simulation Tool
Electronic Equipment Mfg	Ventilation	Insulation - Wall Cavity	sqft	New	0.01	45	\$0.15	45%	50%	\$0.02	0.02	0.02	Building Energy Simulation Tool
Electronic Equipment Mfg	Cooling	HVAC - Duct Repair and Sealing	sqft	New	0.01	18	\$0.00	15%	25%	\$0.00	0.01	0.01	Building Energy Simulation Tool
Electronic Equipment Mfg	Heating	HVAC - Duct Repair and Sealing	sqft	New	0.04	18	\$0.00	15%	25%	\$0.00	0.02	0.02	Building Energy Simulation Tool
Electronic Equipment Mfg	Ventilation	HVAC - Duct Repair and Sealing	sqft	New	0.00	18	\$0.00	15%	25%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Electronic Equipment Mfg	Cooling	Chiller - Chilled Water Reset	sqft	New	0.03	10	\$0.01	15%	45%	\$0.04	0.00	0.01	AEG-BEST
Electronic Equipment Mfg	Cooling	Chiller - Chilled Water Variable-Flow System	sqft	New	0.17	15	\$0.50	15%	60%	\$0.29	0.05	0.06	AEG-BEST
Electronic Equipment Mfg	Cooling	Chiller - Variable Speed Fans	sqft	New	0.06	15	\$0.03	15%	75%	\$0.05	0.02	0.03	New Jersey TRM
Electronic Equipment Mfg	Cooling	HVAC - Economizer	sqft	New	0.09	10	\$0.25	18%	30%	\$0.33	0.02	0.03	AEG-BEST
Electronic Equipment Mfg	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.25	15%	35%	\$13.00	0.00	0.01	7th Power Plan
Electronic Equipment Mfg	Cooling	Destratification Fans (HVLS)	sqft	New	0.12	15	\$0.63	15%	50%	\$0.06	0.10	0.13	AEG Research
Electronic Equipment Mfg	Heating	Destratification Fans (HVLS)	sqft	New	1.09	15	\$0.63	15%	50%	\$0.06	0.81	1.00	AEG Research
Electronic Equipment Mfg	Cooling	RTU - Maintenance	sqft	New	0.06	3	\$0.07	15%	75%	\$0.33	0.01	0.01	AEG Research
Electronic Equipment Mfg	Cooling	Thermostat - WiFi/Interactive	sqft	New	0.21	5	\$0.66	5%	15%	\$0.12	0.01	0.02	7th Power Plan
Electronic Equipment Mfg	Heating	Thermostat - WiFi/Interactive	sqft	New	0.96	5	\$0.66	5%	15%	\$0.12	0.05	0.07	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Electronic Equipment Mfg	Ventilation	Thermostat - WiFi/Interactive	sqft	New	0.02	5	\$0.66	5%	15%	\$0.12	0.01	0.01	7th Power Plan
Electronic Equipment Mfg	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.15	15	\$0.35	22%	41%	\$0.17	0.54	0.75	7th Power Plan
Electronic Equipment Mfg	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.20	15	\$0.58	22%	41%	\$0.20	0.74	1.02	7th Power Plan
Electronic Equipment Mfg	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	New	0.02	15	\$0.00	1%	2%	\$0.01	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Interior Lighting	Interior Lighting - Timeclocks and Timers	sqft	New	0.00	8	\$0.00	7%	7%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Electronic Equipment Mfg	Interior Lighting	Interior Lighting - Skylights	sqft	New	0.00	15	\$1.01	18%	24%	\$0.00	0.00	0.00	AEG Research
Electronic Equipment Mfg	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	sqft	New	0.02	16	\$1.81	5%	40%	\$5.13	0.03	0.05	7th Power Plan
Electronic Equipment Mfg	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	New	0.02	11	\$0.00	15%	50%	\$0.01	0.02	0.04	Illinois TRM
Electronic Equipment Mfg	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	sqft	New	0.03	8	\$0.03	15%	25%	\$0.11	0.02	0.04	7th Power Plan
Electronic Equipment Mfg	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	New	0.02	8	\$0.02	44%	60%	\$0.11	0.02	0.03	Pacific Gas and Electric Research
Electronic Equipment Mfg	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	New	0.02	7	\$1.19	15%	30%	\$6.11	0.02	0.03	AEG Research
Electronic Equipment Mfg	Process	Process - Conductivity Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Process	Process - Timers and Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Motors	Process - Timers and Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Process	Refrigeration - Floating Head Pressure	employee	New	25.26	15	\$21.19	20%	50%	\$0.09	0.08	0.10	RTF Workbook
Electronic Equipment Mfg	Process	Refrigeration - System Optimization	employee	New	40.78	15	\$7.41	20%	50%	\$0.02	0.13	0.16	AEG Research
Electronic Equipment Mfg	Motors	Pumping System - Equipment Upgrade	employee	New	19.27	10	\$3.34	9%	38%	\$0.06	0.04	0.06	7th Power Plan
Electronic Equipment Mfg	Motors	Pumping System - System Optimization	employee	New	14.40	12	\$5.09	9%	38%	-\$0.03	0.05	0.06	UNIDO Study on Industrial Energy Efficiency
Electronic Equipment Mfg	Motors	Pumping System - Variable Speed Drive	employee	New	14.33	10	\$5.29	9%	38%	\$0.05	0.05	0.06	UNIDO Study on Industrial Energy Efficiency

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Electronic Equipment Mfg	Motors	Fan System - Equipment Upgrade	employee	New	17.00	10	\$2.01	9%	38%	\$0.05	0.06	0.07	UNIDO Study on Industrial Energy Efficiency
Electronic Equipment Mfg	Motors	Fan System - Flow Optimization	employee	New	20.07	10	\$3.33	9%	38%	\$0.02	0.07	0.08	UNIDO Study on Industrial Energy Efficiency
Electronic Equipment Mfg	Motors	Fan System - Variable Speed Drive	employee	New	30.22	10	\$16.77	9%	38%	\$0.07	0.10	0.12	UNIDO Study on Industrial Energy Efficiency
Electronic Equipment Mfg	Motors	Compressed Air - Equipment Upgrade	employee	New	99.23	10	\$8.66	17%	50%	\$0.04	0.26	0.33	7th Power Plan
Electronic Equipment Mfg	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	New	0.00	15	\$0.00	16%	38%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Electronic Equipment Mfg	Motors	Compressed Air - Refrigerated Cycling Dryers	employee	New	0.00	10	\$0.00	16%	30%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Electronic Equipment Mfg	Motors	Compressed Air - System Controls	employee	New	22.20	10	\$6.19	9%	38%	\$0.00	0.05	0.06	UNIDO Study on Industrial Energy Efficiency
Electronic Equipment Mfg	Motors	Compressed Air - Leak Management Program	employee	New	56.31	10	\$6.22	18%	75%	\$0.05	0.25	0.32	7th Power Plan
Electronic Equipment Mfg	Motors	Compressed Air - Variable Speed Drive	employee	New	41.13	15	\$37.94	26%	45%	\$0.10	0.08	0.10	UNIDO Study on Industrial Energy Efficiency
Electronic Equipment Mfg	Motors	Compressed Air - Low Pressure-Drop Filters	employee	New	1.37	10	\$0.58	17%	50%	\$0.06	0.00	0.00	Illinois TRM
Electronic Equipment Mfg	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	New	8.34	10	\$1.90	17%	50%	\$0.03	0.02	0.03	UNIDO Study on Industrial Energy Efficiency
Electronic Equipment Mfg	Motors	Compressed Air - Outside Air Intake	employee	New	0.00	20	\$0.00	17%	50%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Electronic Equipment Mfg	Motors	Compressed Air - Receiver Capacity Addition	employee	New	8.30	15	\$5.22	17%	50%	\$0.07	0.03	0.04	UNIDO Study on Industrial Energy Efficiency
Electronic Equipment Mfg	Motors	Material Handling - Variable Speed Drive	employee	New	161.77	10	\$67.87	25%	45%	\$0.06	0.38	0.47	7th Power Plan
Electronic Equipment Mfg	Motors	Motors - Green Rewind (<100 HP)	employee	New	3.09	10	\$1.57	10%	50%	\$0.07	0.06	0.07	7th Power Plan
Electronic Equipment Mfg	Motors	Motors - Green Rewind (100 HP+)	employee	New	1.74	10	\$0.56	6%	25%	\$0.04	0.02	0.02	7th Power Plan
Electronic Equipment Mfg	Motors	Switch from Belt Drive to Direct Drive	employee	New	26.25	12	\$6.90	16%	25%	\$0.03	0.13	0.16	2015-mdu-irp-report---volume-iii.pdf
Electronic Equipment Mfg	Motors	Motors - Synchronous Belts	employee	New	6.96	10	\$2.08	16%	36%	\$0.04	0.04	0.06	7th Power Plan
Electronic Equipment Mfg	Miscellaneous	Agriculture - Engine Block Timer	employee	New	355.14	3	\$5.25	0%	0%	\$0.01	0.00	0.00	Vermont TRM

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Electronic Equipment Mfg	Motors	Agriculture - Live Stock Waterer	employee	New	47.12	10	\$29.39	0%	0%	\$0.08	0.00	0.00	Ontario Power TRM
Electronic Equipment Mfg	Process	Dairy - Milk Precoolers	employee	New	169.03	15	\$95.42	0%	0%	\$0.06	0.00	0.00	Ontario Power TRM
Electronic Equipment Mfg	Process	Clean Room: Change Filter Strategy	employee	New	51.63	15	\$0.46	15%	75%	\$0.00	0.00	0.51	7th Power Plan
Electronic Equipment Mfg	Process	Clean Room: Chiller Optimize	employee	New	50.61	15	\$5.65	15%	75%	\$0.01	0.41	0.50	7th Power Plan
Electronic Equipment Mfg	Process	Clean Room: Clean Room HVAC	employee	New	30.53	15	\$6.82	15%	75%	\$0.02	0.25	0.30	7th Power Plan
Electronic Equipment Mfg	Process	Elec Chip Fab: Solidstate Chiller	employee	New	30.39	15	\$21.42	15%	75%	-\$0.08	0.19	0.24	7th Power Plan
Electronic Equipment Mfg	Process	Elec Chip Fab: Eliminate Exhaust	employee	New	6.36	15	\$1.64	15%	75%	\$0.03	0.04	0.05	7th Power Plan
Electronic Equipment Mfg	Process	Elec Chip Fab: Exhaust Injector	employee	New	12.70	15	\$7.92	15%	75%	-\$0.11	0.08	0.10	7th Power Plan
Electronic Equipment Mfg	Process	Elec Chip Fab: Reduce Gas Pressure	employee	New	12.84	15	\$0.16	15%	75%	-\$0.02	0.08	0.10	7th Power Plan
Electronic Equipment Mfg	Motors	Panel: Hydraulic Press	employee	New	242.62	10	\$67.83	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Motors	Wood: Replace Pneumatic Conveyor	employee	New	257.05	10	\$5.08	0%	0%	-\$0.07	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Process	Metal: New Arc Furnace	employee	New	327.77	10	\$41.88	0%	0%	-\$2.50	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Process	Paper: Premium Control Large Material	employee	New	80.88	10	\$49.52	0%	0%	\$0.08	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Process	Paper: Efficient Pulp Screen	employee	New	65.11	10	\$16.31	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Process	Kraft: Effluent Treatment System	employee	New	65.33	10	\$6.69	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Motors	Kraft: Efficient Agitator	employee	New	436.64	10	\$50.62	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Process	Mech Pulp: Premium Process	employee	New	0.73	5	\$0.11	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Motors	Mech Pulp: Refiner Plate Improvement	employee	New	3.81	1	\$0.19	0%	0%	\$0.05	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Cooling	Transformer - High Efficiency	employee	New	22.48	10	\$28.92	15%	15%	\$0.02	0.00	0.00	7th Power Plan

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Electronic Equipment Mfg	Heating	Transformer - High Efficiency	employee	New	107.32	10	\$28.92	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Ventilation	Transformer - High Efficiency	employee	New	2.07	10	\$28.92	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Interior Lighting	Transformer - High Efficiency	employee	New	5.53	10	\$28.92	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Exterior Lighting	Transformer - High Efficiency	employee	New	1.19	10	\$28.92	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Motors	Transformer - High Efficiency	employee	New	20.56	10	\$28.92	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Process	Transformer - High Efficiency	employee	New	32.39	10	\$28.92	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Miscellaneous	Transformer - High Efficiency	employee	New	12.54	10	\$28.92	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Cooling	Strategic Energy Management	employee	New	64.00	3	\$177.59	0%	5%	\$0.10	0.00	0.00	AEG Research
Electronic Equipment Mfg	Heating	Strategic Energy Management	employee	New	309.14	3	\$177.59	0%	5%	\$0.10	0.00	0.00	AEG Research
Electronic Equipment Mfg	Ventilation	Strategic Energy Management	employee	New	5.96	3	\$177.59	0%	5%	\$0.10	0.00	0.00	AEG Research
Electronic Equipment Mfg	Interior Lighting	Strategic Energy Management	employee	New	15.98	3	\$177.59	0%	5%	\$0.10	0.00	0.00	AEG Research
Electronic Equipment Mfg	Exterior Lighting	Strategic Energy Management	employee	New	3.43	3	\$177.59	0%	5%	\$0.10	0.00	0.00	AEG Research
Electronic Equipment Mfg	Motors	Strategic Energy Management	employee	New	59.40	3	\$177.59	0%	5%	\$0.10	0.00	0.00	AEG Research
Electronic Equipment Mfg	Process	Strategic Energy Management	employee	New	93.58	3	\$177.59	0%	5%	\$0.10	0.00	0.01	AEG Research
Electronic Equipment Mfg	Miscellaneous	Strategic Energy Management	employee	New	36.24	3	\$177.59	0%	5%	\$0.10	0.00	0.00	AEG Research
Electronic Equipment Mfg	Interior Lighting	Commissioning	employee	New	18.38	3	\$121.14	5%	39%	\$0.16	0.01	0.01	AEG Research
Electronic Equipment Mfg	Exterior Lighting	Commissioning	employee	New	3.96	3	\$121.14	5%	39%	\$0.16	0.00	0.00	AEG Research
Electronic Equipment Mfg	Motors	Commissioning	employee	New	68.52	3	\$121.14	5%	39%	\$0.16	0.02	0.03	AEG Research
Electronic Equipment Mfg	Process	Commissioning	employee	New	107.95	3	\$121.14	5%	39%	\$0.16	0.03	0.05	AEG Research

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Electronic Equipment Mfg	Miscellaneous	Commissioning	employee	New	41.80	3	\$121.14	5%	39%	\$0.16	0.02	0.01	AEG Research
Electronic Equipment Mfg	Interior Lighting	Retrocommissioning	employee	New	18.43	3	\$76.90	0%	0%	\$0.10	0.00	0.00	AEG Research
Electronic Equipment Mfg	Exterior Lighting	Retrocommissioning	employee	New	3.96	3	\$76.90	0%	0%	\$0.10	0.00	0.00	AEG Research
Electronic Equipment Mfg	Motors	Retrocommissioning	employee	New	68.53	3	\$76.90	0%	0%	\$0.10	0.00	0.00	AEG Research
Electronic Equipment Mfg	Process	Retrocommissioning	employee	New	107.97	3	\$76.90	0%	0%	\$0.10	0.00	0.00	AEG Research
Electronic Equipment Mfg	Miscellaneous	Retrocommissioning	employee	New	41.81	3	\$76.90	0%	0%	\$0.10	0.00	0.00	AEG Research
Electronic Equipment Mfg	Motors	Municipal Sewage Treatment	employee	New	2.55	12	\$1.68	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Motors	Municipal Water Supply Treatment	employee	New	0.00	12	\$0.00	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Industrial Machinery	Cooling	Insulation - Ceiling	sqft	Existing	0.10	45	\$1.28	15%	25%	\$0.17	1.97	2.55	Building Energy Simulation Tool
Industrial Machinery	Heating	Insulation - Ceiling	sqft	Existing	0.45	45	\$1.28	15%	25%	\$0.17	7.94	9.87	Building Energy Simulation Tool
Industrial Machinery	Ventilation	Insulation - Ceiling	sqft	Existing	0.01	45	\$1.28	15%	25%	\$0.17	1.33	1.93	Building Energy Simulation Tool
Industrial Machinery	Cooling	Insulation - Ducting	sqft	Existing	0.04	20	\$0.84	15%	25%	\$1.23	0.71	0.95	Building Energy Simulation Tool
Industrial Machinery	Heating	Insulation - Ducting	sqft	Existing	0.02	20	\$0.84	15%	25%	\$1.23	0.33	0.41	Building Energy Simulation Tool
Industrial Machinery	Ventilation	Insulation - Ducting	sqft	Existing	0.00	20	\$0.84	15%	25%	\$1.23	0.05	0.08	Building Energy Simulation Tool
Industrial Machinery	Cooling	Insulation - Wall Cavity	sqft	Existing	0.00	45	\$0.15	45%	50%	\$0.02	0.02	0.02	Building Energy Simulation Tool
Industrial Machinery	Heating	Insulation - Wall Cavity	sqft	Existing	0.64	45	\$0.15	45%	50%	\$0.02	5.72	6.89	Building Energy Simulation Tool
Industrial Machinery	Ventilation	Insulation - Wall Cavity	sqft	Existing	0.02	45	\$0.15	45%	50%	\$0.02	0.89	1.29	Building Energy Simulation Tool
Industrial Machinery	Cooling	HVAC - Duct Repair and Sealing	sqft	Existing	0.01	18	\$0.00	15%	25%	\$0.00	0.26	0.33	Building Energy Simulation Tool
Industrial Machinery	Heating	HVAC - Duct Repair and Sealing	sqft	Existing	0.04	18	\$0.00	15%	25%	\$0.00	0.81	0.97	Building Energy Simulation Tool

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Industrial Machinery	Ventilation	HVAC - Duct Repair and Sealing	sqft	Existing	0.00	18	\$0.00	15%	25%	\$0.00	0.13	0.18	Building Energy Simulation Tool
Industrial Machinery	Cooling	Chiller - Chilled Water Reset	sqft	Existing	0.04	10	\$0.01	15%	45%	\$0.03	0.63	0.90	AEG-BEST
Industrial Machinery	Cooling	Chiller - Chilled Water Variable-Flow System	sqft	Existing	0.21	15	\$0.50	15%	60%	\$0.24	5.03	7.34	AEG-BEST
Industrial Machinery	Cooling	Chiller - Variable Speed Fans	sqft	Existing	0.08	15	\$0.03	15%	75%	\$0.04	2.59	3.64	New Jersey TRM
Industrial Machinery	Cooling	HVAC - Economizer	sqft	Existing	0.10	10	\$0.25	18%	30%	\$0.30	2.50	3.66	AEG-BEST
Industrial Machinery	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.25	15%	35%	\$11.12	0.44	0.74	7th Power Plan
Industrial Machinery	Cooling	Destratification Fans (HVLS)	sqft	Existing	0.13	15	\$0.63	15%	50%	\$0.05	9.73	13.71	AEG Research
Industrial Machinery	Heating	Destratification Fans (HVLS)	sqft	Existing	1.16	15	\$0.63	15%	50%	\$0.05	78.52	102.62	AEG Research
Industrial Machinery	Cooling	RTU - Maintenance	sqft	Existing	0.07	3	\$0.07	15%	75%	\$0.32	5.24	7.99	AEG Research
Industrial Machinery	Cooling	Thermostat - WiFi/Interactive	sqft	Existing	0.22	5	\$0.66	5%	15%	\$0.11	4.21	5.54	7th Power Plan
Industrial Machinery	Heating	Thermostat - WiFi/Interactive	sqft	Existing	0.99	5	\$0.66	5%	15%	\$0.11	17.47	21.79	7th Power Plan
Industrial Machinery	Ventilation	Thermostat - WiFi/Interactive	sqft	Existing	0.03	5	\$0.66	5%	15%	\$0.11	2.92	4.26	7th Power Plan
Industrial Machinery	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.18	15	\$0.35	7%	33%	\$0.17	27.25	40.96	7th Power Plan
Industrial Machinery	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.25	15	\$0.58	7%	33%	\$0.20	36.15	56.11	7th Power Plan
Industrial Machinery	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	Existing	0.02	15	\$0.00	1%	2%	\$0.01	0.14	0.26	7th Power Plan
Industrial Machinery	Interior Lighting	Interior Lighting - Timers and Timers	sqft	Existing	0.00	8	\$0.00	7%	7%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Industrial Machinery	Interior Lighting	Interior Lighting - Skylights	sqft	Existing	0.00	15	\$1.01	15%	23%	\$0.00	0.00	0.00	AEG Research
Industrial Machinery	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	sqft	Existing	0.03	16	\$1.81	5%	40%	\$5.03	4.02	8.54	7th Power Plan
Industrial Machinery	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	Existing	0.03	11	\$0.00	15%	50%	\$0.01	4.59	8.58	Illinois TRM

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Industrial Machinery	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	sqft	Existing	0.04	8	\$0.03	15%	25%	\$0.10	5.37	10.66	7th Power Plan
Industrial Machinery	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	Existing	0.02	8	\$0.02	33%	60%	\$0.11	7.45	15.24	Pacific Gas and Electric Research
Industrial Machinery	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	Existing	0.03	7	\$1.19	15%	30%	\$5.85	4.64	10.09	AEG Research
Industrial Machinery	Process	Process - Conductivity Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Industrial Machinery	Process	Process - Timers and Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Industrial Machinery	Motors	Process - Timers and Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Industrial Machinery	Process	Refrigeration - Floating Head Pressure	employee	Existing	16.60	15	\$19.38	20%	50%	\$0.13	2.36	3.06	RTF Workbook
Industrial Machinery	Process	Refrigeration - System Optimization	employee	Existing	26.64	15	\$13.65	20%	50%	\$0.06	3.79	4.91	AEG Research
Industrial Machinery	Motors	Pumping System - Equipment Upgrade	employee	Existing	161.15	10	\$29.13	9%	38%	\$0.06	21.50	29.27	7th Power Plan
Industrial Machinery	Motors	Pumping System - System Optimization	employee	Existing	119.34	12	\$44.39	9%	38%	-\$0.03	15.43	20.43	UNIDO Study on Industrial Energy Efficiency
Industrial Machinery	Motors	Pumping System - Variable Speed Drive	employee	Existing	117.69	10	\$46.18	9%	38%	\$0.05	15.14	20.24	UNIDO Study on Industrial Energy Efficiency
Industrial Machinery	Motors	Fan System - Equipment Upgrade	employee	Existing	209.11	10	\$25.57	9%	38%	\$0.05	27.35	35.47	UNIDO Study on Industrial Energy Efficiency
Industrial Machinery	Motors	Fan System - Flow Optimization	employee	Existing	245.59	10	\$42.30	9%	38%	\$0.02	32.02	41.76	UNIDO Study on Industrial Energy Efficiency
Industrial Machinery	Motors	Fan System - Variable Speed Drive	employee	Existing	357.18	10	\$212.85	9%	38%	\$0.07	45.51	61.91	UNIDO Study on Industrial Energy Efficiency
Industrial Machinery	Motors	Compressed Air - Equipment Upgrade	employee	Existing	592.97	10	\$51.72	17%	50%	\$0.04	94.19	122.17	7th Power Plan
Industrial Machinery	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	Existing	0.00	15	\$0.00	16%	38%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Industrial Machinery	Motors	Compressed Air - Refrigerated Cycling Dryers	employee	Existing	0.00	10	\$0.00	16%	30%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Industrial Machinery	Motors	Compressed Air - System Controls	employee	Existing	125.68	10	\$36.98	9%	38%	\$0.00	16.66	23.02	UNIDO Study on Industrial Energy Efficiency
Industrial Machinery	Motors	Compressed Air - Leak Management Program	employee	Existing	331.13	10	\$37.17	18%	75%	\$0.05	89.54	118.18	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Industrial Machinery	Motors	Compressed Air - Variable Speed Drive	employee	Existing	229.96	15	\$226.73	26%	45%	\$0.10	20.12	28.44	UNIDO Study on Industrial Energy Efficiency
Industrial Machinery	Motors	Compressed Air - Low Pressure-Drop Filters	employee	Existing	7.67	10	\$3.49	17%	50%	\$0.06	1.17	1.66	Illinois TRM
Industrial Machinery	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	Existing	47.39	10	\$11.34	17%	50%	\$0.03	7.35	10.10	UNIDO Study on Industrial Energy Efficiency
Industrial Machinery	Motors	Compressed Air - Outside Air Intake	employee	Existing	0.00	20	\$0.00	17%	50%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Industrial Machinery	Motors	Compressed Air - Receiver Capacity Addition	employee	Existing	46.74	15	\$31.17	17%	50%	\$0.07	7.21	10.03	UNIDO Study on Industrial Energy Efficiency
Industrial Machinery	Motors	Material Handling - Variable Speed Drive	employee	Existing	469.74	10	\$210.02	25%	45%	\$0.06	42.34	56.77	7th Power Plan
Industrial Machinery	Motors	Motors - Green Rewind (<100 HP)	employee	Existing	14.74	10	\$8.04	10%	50%	\$0.07	10.56	14.33	7th Power Plan
Industrial Machinery	Motors	Motors - Green Rewind (100 HP+)	employee	Existing	8.38	10	\$2.85	6%	25%	\$0.04	2.88	3.84	7th Power Plan
Industrial Machinery	Motors	Switch from Belt Drive to Direct Drive	employee	Existing	127.97	12	\$35.28	16%	25%	\$0.03	22.13	29.14	2015-mdu-irp-report---volume-iii.pdf
Industrial Machinery	Motors	Motors - Synchronous Belts	employee	Existing	33.61	10	\$10.61	16%	36%	\$0.04	12.46	17.27	7th Power Plan
Industrial Machinery	Miscellaneous	Agriculture - Engine Block Timer	employee	Existing	723.84	3	\$10.70	0%	0%	\$0.01	0.00	0.00	Vermont TRM
Industrial Machinery	Motors	Agriculture - Live Stock Waterer	employee	Existing	379.41	10	\$256.52	0%	0%	\$0.08	0.00	0.00	Ontario Power TRM
Industrial Machinery	Process	Dairy - Milk Precoolers	employee	Existing	110.67	15	\$61.67	0%	0%	\$0.06	0.00	0.00	Ontario Power TRM
Industrial Machinery	Process	Clean Room: Change Filter Strategy	employee	Existing	60.15	15	\$0.53	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Industrial Machinery	Process	Clean Room: Chiller Optimize	employee	Existing	32.91	15	\$3.65	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Industrial Machinery	Process	Clean Room: Clean Room HVAC	employee	Existing	19.98	15	\$4.41	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Industrial Machinery	Process	Elec Chip Fab: Solidstate Chiller	employee	Existing	19.92	15	\$13.85	0%	0%	-\$0.08	0.00	0.00	7th Power Plan
Industrial Machinery	Process	Elec Chip Fab: Eliminate Exhaust	employee	Existing	7.52	15	\$1.91	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Industrial Machinery	Process	Elec Chip Fab: Exhaust Injector	employee	Existing	14.99	15	\$9.23	0%	0%	-\$0.11	0.00	0.00	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Industrial Machinery	Process	Elec Chip Fab: Reduce Gas Pressure	employee	Existing	15.04	15	\$0.19	0%	0%	-\$0.02	0.00	0.00	7th Power Plan
Industrial Machinery	Motors	Panel: Hydraulic Press	employee	Existing	712.18	10	\$209.90	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Industrial Machinery	Motors	Wood: Replace Pneumatic Conveyor	employee	Existing	795.44	10	\$15.72	0%	0%	-\$0.07	0.00	0.00	7th Power Plan
Industrial Machinery	Process	Metal: New Arc Furnace	employee	Existing	509.94	10	\$64.17	0%	0%	-\$2.50	0.00	0.00	7th Power Plan
Industrial Machinery	Process	Paper: Premium Control Large Material	employee	Existing	83.24	10	\$50.16	0%	0%	\$0.08	0.00	0.00	7th Power Plan
Industrial Machinery	Process	Paper: Efficient Pulp Screen	employee	Existing	66.99	10	\$16.52	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Industrial Machinery	Process	Kraft: Effluent Treatment System	employee	Existing	66.99	10	\$6.77	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Industrial Machinery	Motors	Kraft: Efficient Agitator	employee	Existing	1,302.27	10	\$156.63	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Industrial Machinery	Process	Mech Pulp: Premium Process	employee	Existing	0.75	5	\$0.12	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Industrial Machinery	Motors	Mech Pulp: Refiner Plate Improvement	employee	Existing	10.87	1	\$0.60	0%	0%	\$0.05	0.00	0.00	7th Power Plan
Industrial Machinery	Cooling	Transformer - High Efficiency	employee	Existing	49.63	10	\$67.25	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Industrial Machinery	Heating	Transformer - High Efficiency	employee	Existing	221.93	10	\$67.25	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Industrial Machinery	Ventilation	Transformer - High Efficiency	employee	Existing	6.32	10	\$67.25	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Industrial Machinery	Interior Lighting	Transformer - High Efficiency	employee	Existing	20.21	10	\$67.25	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Industrial Machinery	Exterior Lighting	Transformer - High Efficiency	employee	Existing	4.30	10	\$67.25	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Industrial Machinery	Motors	Transformer - High Efficiency	employee	Existing	96.95	10	\$67.25	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Industrial Machinery	Process	Transformer - High Efficiency	employee	Existing	33.34	10	\$67.25	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Industrial Machinery	Miscellaneous	Transformer - High Efficiency	employee	Existing	26.94	10	\$67.25	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Industrial Machinery	Cooling	Strategic Energy Management	employee	Existing	136.34	3	\$413.05	0%	5%	\$0.10	0.52	0.69	AEG Research

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Industrial Machinery	Heating	Strategic Energy Management	employee	Existing	635.28	3	\$413.05	0%	5%	\$0.10	2.26	2.85	AEG Research
Industrial Machinery	Ventilation	Strategic Energy Management	employee	Existing	18.10	3	\$413.05	0%	5%	\$0.10	0.38	0.56	AEG Research
Industrial Machinery	Interior Lighting	Strategic Energy Management	employee	Existing	57.57	3	\$413.05	0%	5%	\$0.10	0.97	1.71	AEG Research
Industrial Machinery	Exterior Lighting	Strategic Energy Management	employee	Existing	12.32	3	\$413.05	0%	5%	\$0.10	0.21	0.37	AEG Research
Industrial Machinery	Motors	Strategic Energy Management	employee	Existing	277.54	3	\$413.05	0%	5%	\$0.10	5.80	7.54	AEG Research
Industrial Machinery	Process	Strategic Energy Management	employee	Existing	95.40	3	\$413.05	0%	5%	\$0.10	2.08	2.53	AEG Research
Industrial Machinery	Miscellaneous	Strategic Energy Management	employee	Existing	77.03	3	\$413.05	0%	5%	\$0.10	2.17	2.01	AEG Research
Industrial Machinery	Interior Lighting	Commissioning	employee	Existing	66.36	3	\$328.47	0%	0%	\$0.17	0.00	0.00	AEG Research
Industrial Machinery	Exterior Lighting	Commissioning	employee	Existing	14.20	3	\$328.47	0%	0%	\$0.17	0.00	0.00	AEG Research
Industrial Machinery	Motors	Commissioning	employee	Existing	319.87	3	\$328.47	0%	0%	\$0.17	0.00	0.00	AEG Research
Industrial Machinery	Process	Commissioning	employee	Existing	109.94	3	\$328.47	0%	0%	\$0.17	0.00	0.00	AEG Research
Industrial Machinery	Miscellaneous	Commissioning	employee	Existing	88.77	3	\$328.47	0%	0%	\$0.17	0.00	0.00	AEG Research
Industrial Machinery	Interior Lighting	Retrocommissioning	employee	Existing	67.38	3	\$208.52	5%	39%	\$0.11	7.78	13.55	AEG Research
Industrial Machinery	Exterior Lighting	Retrocommissioning	employee	Existing	14.33	3	\$208.52	5%	39%	\$0.11	1.70	2.95	AEG Research
Industrial Machinery	Motors	Retrocommissioning	employee	Existing	323.17	3	\$208.52	5%	39%	\$0.11	46.28	59.56	AEG Research
Industrial Machinery	Process	Retrocommissioning	employee	Existing	111.12	3	\$208.52	5%	39%	\$0.11	16.63	20.04	AEG Research
Industrial Machinery	Miscellaneous	Retrocommissioning	employee	Existing	89.81	3	\$208.52	5%	39%	\$0.11	17.32	15.92	AEG Research
Industrial Machinery	Motors	Municipal Sewage Treatment	employee	Existing	20.79	12	\$14.64	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Industrial Machinery	Motors	Municipal Water Supply Treatment	employee	Existing	0.00	12	\$0.00	0%	0%	\$0.00	0.00	0.00	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Industrial Machinery	Cooling	Insulation - Ceiling	sqft	New	0.09	45	\$1.28	15%	25%	\$0.18	0.30	0.34	Building Energy Simulation Tool
Industrial Machinery	Heating	Insulation - Ceiling	sqft	New	0.44	45	\$1.28	15%	25%	\$0.18	1.26	1.40	Building Energy Simulation Tool
Industrial Machinery	Ventilation	Insulation - Ceiling	sqft	New	0.01	45	\$1.28	15%	25%	\$0.18	0.17	0.22	Building Energy Simulation Tool
Industrial Machinery	Cooling	Insulation - Ducting	sqft	New	0.04	20	\$0.84	15%	25%	\$1.32	0.12	0.13	Building Energy Simulation Tool
Industrial Machinery	Heating	Insulation - Ducting	sqft	New	0.02	20	\$0.84	15%	25%	\$1.32	0.05	0.06	Building Energy Simulation Tool
Industrial Machinery	Ventilation	Insulation - Ducting	sqft	New	0.00	20	\$0.84	15%	25%	\$1.32	0.01	0.01	Building Energy Simulation Tool
Industrial Machinery	Cooling	Insulation - Wall Cavity	sqft	New	0.00	45	\$0.15	45%	50%	\$0.02	0.00	0.00	Building Energy Simulation Tool
Industrial Machinery	Heating	Insulation - Wall Cavity	sqft	New	0.59	45	\$0.15	45%	50%	\$0.02	0.85	0.95	Building Energy Simulation Tool
Industrial Machinery	Ventilation	Insulation - Wall Cavity	sqft	New	0.01	45	\$0.15	45%	50%	\$0.02	0.12	0.14	Building Energy Simulation Tool
Industrial Machinery	Cooling	HVAC - Duct Repair and Sealing	sqft	New	0.01	18	\$0.00	15%	25%	\$0.00	0.04	0.04	Building Energy Simulation Tool
Industrial Machinery	Heating	HVAC - Duct Repair and Sealing	sqft	New	0.04	18	\$0.00	15%	25%	\$0.00	0.12	0.13	Building Energy Simulation Tool
Industrial Machinery	Ventilation	HVAC - Duct Repair and Sealing	sqft	New	0.00	18	\$0.00	15%	25%	\$0.00	0.02	0.02	Building Energy Simulation Tool
Industrial Machinery	Cooling	Chiller - Chilled Water Reset	sqft	New	0.03	10	\$0.01	15%	45%	\$0.04	0.03	0.04	AEG-BEST
Industrial Machinery	Cooling	Chiller - Chilled Water Variable-Flow System	sqft	New	0.17	15	\$0.50	15%	60%	\$0.29	0.32	0.41	AEG-BEST
Industrial Machinery	Cooling	Chiller - Variable Speed Fans	sqft	New	0.06	15	\$0.03	15%	75%	\$0.05	0.16	0.20	New Jersey TRM
Industrial Machinery	Cooling	HVAC - Economizer	sqft	New	0.09	10	\$0.25	18%	30%	\$0.33	0.13	0.17	AEG-BEST
Industrial Machinery	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.25	15%	35%	\$12.99	0.03	0.04	7th Power Plan
Industrial Machinery	Cooling	Destratification Fans (HVLS)	sqft	New	0.12	15	\$0.63	15%	50%	\$0.06	0.66	0.85	AEG Research
Industrial Machinery	Heating	Destratification Fans (HVLS)	sqft	New	1.09	15	\$0.63	15%	50%	\$0.06	5.39	6.71	AEG Research

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Industrial Machinery	Cooling	RTU - Maintenance	sqft	New	0.06	3	\$0.07	15%	75%	\$0.33	0.06	0.09	AEG Research
Industrial Machinery	Cooling	Thermostat - WiFi/Interactive	sqft	New	0.21	5	\$0.66	5%	15%	\$0.12	0.09	0.12	7th Power Plan
Industrial Machinery	Heating	Thermostat - WiFi/Interactive	sqft	New	0.96	5	\$0.66	5%	15%	\$0.12	0.37	0.47	7th Power Plan
Industrial Machinery	Ventilation	Thermostat - WiFi/Interactive	sqft	New	0.02	5	\$0.66	5%	15%	\$0.12	0.05	0.08	7th Power Plan
Industrial Machinery	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.15	15	\$0.35	22%	41%	\$0.17	5.63	7.71	7th Power Plan
Industrial Machinery	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.20	15	\$0.58	22%	41%	\$0.20	7.63	10.51	7th Power Plan
Industrial Machinery	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	New	0.02	15	\$0.00	1%	2%	\$0.01	0.01	0.01	7th Power Plan
Industrial Machinery	Interior Lighting	Interior Lighting - Timeclocks and Timers	sqft	New	0.00	8	\$0.00	7%	7%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Industrial Machinery	Interior Lighting	Interior Lighting - Skylights	sqft	New	0.00	15	\$1.01	18%	24%	\$0.00	0.00	0.00	AEG Research
Industrial Machinery	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	sqft	New	0.02	16	\$1.81	5%	40%	\$5.13	0.30	0.49	7th Power Plan
Industrial Machinery	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	New	0.02	11	\$0.00	15%	50%	\$0.01	0.25	0.42	Illinois TRM
Industrial Machinery	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	sqft	New	0.03	8	\$0.03	15%	25%	\$0.11	0.21	0.39	7th Power Plan
Industrial Machinery	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	New	0.02	8	\$0.02	44%	60%	\$0.11	0.18	0.33	Pacific Gas and Electric Research
Industrial Machinery	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	New	0.02	7	\$1.19	15%	30%	\$6.12	0.18	0.34	AEG Research
Industrial Machinery	Process	Process - Conductivity Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Industrial Machinery	Process	Process - Timers and Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Industrial Machinery	Motors	Process - Timers and Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Industrial Machinery	Process	Refrigeration - Floating Head Pressure	employee	New	16.63	15	\$13.70	20%	50%	\$0.09	0.17	0.21	RTF Workbook
Industrial Machinery	Process	Refrigeration - System Optimization	employee	New	26.64	15	\$4.79	20%	50%	\$0.02	0.28	0.34	AEG Research

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Industrial Machinery	Motors	Pumping System - Equipment Upgrade	employee	New	167.33	10	\$29.13	9%	38%	\$0.06	1.26	1.60	7th Power Plan
Industrial Machinery	Motors	Pumping System - System Optimization	employee	New	124.88	12	\$44.39	9%	38%	-\$0.03	1.55	1.89	UNIDO Study on Industrial Energy Efficiency
Industrial Machinery	Motors	Pumping System - Variable Speed Drive	employee	New	124.21	10	\$46.18	9%	38%	\$0.05	1.42	1.74	UNIDO Study on Industrial Energy Efficiency
Industrial Machinery	Motors	Fan System - Equipment Upgrade	employee	New	215.47	10	\$25.57	9%	38%	\$0.05	2.46	3.01	UNIDO Study on Industrial Energy Efficiency
Industrial Machinery	Motors	Fan System - Flow Optimization	employee	New	253.94	10	\$42.30	9%	38%	\$0.02	2.90	3.55	UNIDO Study on Industrial Energy Efficiency
Industrial Machinery	Motors	Fan System - Variable Speed Drive	employee	New	381.82	10	\$212.85	9%	38%	\$0.07	4.38	5.34	UNIDO Study on Industrial Energy Efficiency
Industrial Machinery	Motors	Compressed Air - Equipment Upgrade	employee	New	592.97	10	\$51.72	17%	50%	\$0.04	5.18	6.60	7th Power Plan
Industrial Machinery	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	New	0.00	15	\$0.00	16%	38%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Industrial Machinery	Motors	Compressed Air - Refrigerated Cycling Dryers	employee	New	0.00	10	\$0.00	16%	30%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Industrial Machinery	Motors	Compressed Air - System Controls	employee	New	131.78	10	\$36.98	9%	38%	\$0.00	1.00	1.26	UNIDO Study on Industrial Energy Efficiency
Industrial Machinery	Motors	Compressed Air - Leak Management Program	employee	New	336.18	10	\$37.17	18%	75%	\$0.05	5.05	6.41	7th Power Plan
Industrial Machinery	Motors	Compressed Air - Variable Speed Drive	employee	New	244.64	15	\$226.73	26%	45%	\$0.10	1.64	2.01	UNIDO Study on Industrial Energy Efficiency
Industrial Machinery	Motors	Compressed Air - Low Pressure-Drop Filters	employee	New	8.16	10	\$3.49	17%	50%	\$0.06	0.07	0.09	Illinois TRM
Industrial Machinery	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	New	49.53	10	\$11.34	17%	50%	\$0.03	0.44	0.55	UNIDO Study on Industrial Energy Efficiency
Industrial Machinery	Motors	Compressed Air - Outside Air Intake	employee	New	0.00	20	\$0.00	17%	50%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Industrial Machinery	Motors	Compressed Air - Receiver Capacity Addition	employee	New	49.27	15	\$31.17	17%	50%	\$0.07	0.58	0.71	UNIDO Study on Industrial Energy Efficiency
Industrial Machinery	Motors	Material Handling - Variable Speed Drive	employee	New	496.77	10	\$210.02	25%	45%	\$0.06	3.99	4.87	7th Power Plan
Industrial Machinery	Motors	Motors - Green Rewind (<100 HP)	employee	New	15.74	10	\$8.04	10%	50%	\$0.07	1.01	1.23	7th Power Plan
Industrial Machinery	Motors	Motors - Green Rewind (100 HP+)	employee	New	8.83	10	\$2.85	6%	25%	\$0.04	0.27	0.33	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Industrial Machinery	Motors	Switch from Belt Drive to Direct Drive	employee	New	133.36	12	\$35.28	16%	25%	\$0.03	2.21	2.69	2015-mdi-irp-report---volume-iii.pdf
Industrial Machinery	Motors	Motors - Synchronous Belts	employee	New	35.34	10	\$10.61	16%	36%	\$0.04	0.75	0.95	7th Power Plan
Industrial Machinery	Miscellaneous	Agriculture - Engine Block Timer	employee	New	723.84	3	\$10.70	0%	0%	\$0.01	0.00	0.00	Vermont TRM
Industrial Machinery	Motors	Agriculture - Live Stock Waterer	employee	New	408.12	10	\$256.52	0%	0%	\$0.08	0.00	0.00	Ontario Power TRM
Industrial Machinery	Process	Dairy - Milk Precoolers	employee	New	110.87	15	\$61.67	0%	0%	\$0.06	0.00	0.00	Ontario Power TRM
Industrial Machinery	Process	Clean Room: Change Filter Strategy	employee	New	60.15	15	\$0.53	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Industrial Machinery	Process	Clean Room: Chiller Optimize	employee	New	32.91	15	\$3.65	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Industrial Machinery	Process	Clean Room: Clean Room HVAC	employee	New	19.96	15	\$4.41	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Industrial Machinery	Process	Elec Chip Fab: Solidstate Chiller	employee	New	19.96	15	\$13.85	0%	0%	-\$0.08	0.00	0.00	7th Power Plan
Industrial Machinery	Process	Elec Chip Fab: Eliminate Exhaust	employee	New	7.51	15	\$1.91	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Industrial Machinery	Process	Elec Chip Fab: Exhaust Injector	employee	New	15.02	15	\$9.23	0%	0%	-\$0.11	0.00	0.00	7th Power Plan
Industrial Machinery	Process	Elec Chip Fab: Reduce Gas Pressure	employee	New	15.04	15	\$0.19	0%	0%	-\$0.02	0.00	0.00	7th Power Plan
Industrial Machinery	Motors	Panel: Hydraulic Press	employee	New	745.56	10	\$209.90	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Industrial Machinery	Motors	Wood: Replace Pneumatic Conveyor	employee	New	795.44	10	\$15.72	0%	0%	-\$0.07	0.00	0.00	7th Power Plan
Industrial Machinery	Process	Metal: New Arc Furnace	employee	New	509.38	10	\$64.17	0%	0%	-\$2.50	0.00	0.00	7th Power Plan
Industrial Machinery	Process	Paper: Premium Control Large Material	employee	New	83.49	10	\$50.16	0%	0%	\$0.08	0.00	0.00	7th Power Plan
Industrial Machinery	Process	Paper: Efficient Pulp Screen	employee	New	66.92	10	\$16.52	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Industrial Machinery	Process	Kraft: Effluent Treatment System	employee	New	66.92	10	\$6.77	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Industrial Machinery	Motors	Kraft: Efficient Agitator	employee	New	1,346.56	10	\$156.63	0%	0%	\$0.02	0.00	0.00	7th Power Plan

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Industrial Machinery	Process	Mech Pulp: Premium Process	employee	New	0.75	5	\$0.12	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Industrial Machinery	Motors	Mech Pulp: Refiner Plate Improvement	employee	New	11.69	1	\$0.60	0%	0%	\$0.05	0.00	0.00	7th Power Plan
Industrial Machinery	Cooling	Transformer - High Efficiency	employee	New	44.94	10	\$64.09	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Industrial Machinery	Heating	Transformer - High Efficiency	employee	New	215.48	10	\$64.09	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Industrial Machinery	Ventilation	Transformer - High Efficiency	employee	New	4.05	10	\$64.09	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Industrial Machinery	Interior Lighting	Transformer - High Efficiency	employee	New	16.26	10	\$64.09	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Industrial Machinery	Exterior Lighting	Transformer - High Efficiency	employee	New	3.48	10	\$64.09	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Industrial Machinery	Motors	Transformer - High Efficiency	employee	New	104.29	10	\$64.09	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Industrial Machinery	Process	Transformer - High Efficiency	employee	New	33.44	10	\$64.09	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Industrial Machinery	Miscellaneous	Transformer - High Efficiency	employee	New	25.57	10	\$64.09	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Industrial Machinery	Cooling	Strategic Energy Management	employee	New	127.98	3	\$393.61	0%	5%	\$0.10	0.00	0.01	AEG Research
Industrial Machinery	Heating	Strategic Energy Management	employee	New	620.70	3	\$393.61	0%	5%	\$0.10	0.02	0.02	AEG Research
Industrial Machinery	Ventilation	Strategic Energy Management	employee	New	11.66	3	\$393.61	0%	5%	\$0.10	0.00	0.00	AEG Research
Industrial Machinery	Interior Lighting	Strategic Energy Management	employee	New	46.97	3	\$393.61	0%	5%	\$0.10	0.01	0.01	AEG Research
Industrial Machinery	Exterior Lighting	Strategic Energy Management	employee	New	10.05	3	\$393.61	0%	5%	\$0.10	0.00	0.00	AEG Research
Industrial Machinery	Motors	Strategic Energy Management	employee	New	301.27	3	\$393.61	0%	5%	\$0.10	0.05	0.07	AEG Research
Industrial Machinery	Process	Strategic Energy Management	employee	New	96.60	3	\$393.61	0%	5%	\$0.10	0.02	0.02	AEG Research
Industrial Machinery	Miscellaneous	Strategic Energy Management	employee	New	73.86	3	\$393.61	0%	5%	\$0.10	0.02	0.01	AEG Research
Industrial Machinery	Interior Lighting	Commissioning	employee	New	54.05	3	\$325.25	5%	39%	\$0.17	0.06	0.11	AEG Research

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Industrial Machinery	Exterior Lighting	Commissioning	employee	New	11.59	3	\$325.25	5%	39%	\$0.17	0.01	0.02	AEG Research
Industrial Machinery	Motors	Commissioning	employee	New	347.55	3	\$325.25	5%	39%	\$0.17	0.39	0.52	AEG Research
Industrial Machinery	Process	Commissioning	employee	New	111.43	3	\$325.25	5%	39%	\$0.17	0.12	0.16	AEG Research
Industrial Machinery	Miscellaneous	Commissioning	employee	New	85.20	3	\$325.25	5%	39%	\$0.17	0.12	0.11	AEG Research
Industrial Machinery	Interior Lighting	Retrocommissioning	employee	New	54.20	3	\$206.48	0%	0%	\$0.11	0.00	0.00	AEG Research
Industrial Machinery	Exterior Lighting	Retrocommissioning	employee	New	11.59	3	\$206.48	0%	0%	\$0.11	0.00	0.00	AEG Research
Industrial Machinery	Motors	Retrocommissioning	employee	New	347.62	3	\$206.48	0%	0%	\$0.11	0.00	0.00	AEG Research
Industrial Machinery	Process	Retrocommissioning	employee	New	111.46	3	\$206.48	0%	0%	\$0.11	0.00	0.00	AEG Research
Industrial Machinery	Miscellaneous	Retrocommissioning	employee	New	85.22	3	\$206.48	0%	0%	\$0.11	0.00	0.00	AEG Research
Industrial Machinery	Motors	Municipal Sewage Treatment	employee	New	22.19	12	\$14.64	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Industrial Machinery	Motors	Municipal Water Supply Treatment	employee	New	0.00	12	\$0.00	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Lumber Wood Products	Cooling	Insulation - Ceiling	sqft	Existing	0.10	45	\$1.28	15%	25%	\$0.17	0.26	0.34	Building Energy Simulation Tool
Lumber Wood Products	Heating	Insulation - Ceiling	sqft	Existing	0.45	45	\$1.28	15%	25%	\$0.17	1.06	1.32	Building Energy Simulation Tool
Lumber Wood Products	Ventilation	Insulation - Ceiling	sqft	Existing	0.01	45	\$1.28	15%	25%	\$0.17	0.18	0.26	Building Energy Simulation Tool
Lumber Wood Products	Cooling	Insulation - Ducting	sqft	Existing	0.04	20	\$0.84	15%	25%	\$1.23	0.10	0.13	Building Energy Simulation Tool
Lumber Wood Products	Heating	Insulation - Ducting	sqft	Existing	0.02	20	\$0.84	15%	25%	\$1.23	0.04	0.06	Building Energy Simulation Tool
Lumber Wood Products	Ventilation	Insulation - Ducting	sqft	Existing	0.00	20	\$0.84	15%	25%	\$1.23	0.01	0.01	Building Energy Simulation Tool
Lumber Wood Products	Cooling	Insulation - Wall Cavity	sqft	Existing	0.00	45	\$0.15	45%	50%	\$0.02	0.00	0.00	Building Energy Simulation Tool
Lumber Wood Products	Heating	Insulation - Wall Cavity	sqft	Existing	0.64	45	\$0.15	45%	50%	\$0.02	0.76	0.92	Building Energy Simulation Tool

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Lumber Wood Products	Ventilation	Insulation - Wall Cavity	sqft	Existing	0.02	45	\$0.15	45%	50%	\$0.02	0.12	0.17	Building Energy Simulation Tool
Lumber Wood Products	Cooling	HVAC - Duct Repair and Sealing	sqft	Existing	0.01	18	\$0.00	15%	25%	\$0.00	0.03	0.04	Building Energy Simulation Tool
Lumber Wood Products	Heating	HVAC - Duct Repair and Sealing	sqft	Existing	0.04	18	\$0.00	15%	25%	\$0.00	0.11	0.13	Building Energy Simulation Tool
Lumber Wood Products	Ventilation	HVAC - Duct Repair and Sealing	sqft	Existing	0.00	18	\$0.00	15%	25%	\$0.00	0.02	0.02	Building Energy Simulation Tool
Lumber Wood Products	Cooling	Chiller - Chilled Water Reset	sqft	Existing	0.04	10	\$0.01	15%	45%	\$0.03	0.08	0.12	AEG-BEST
Lumber Wood Products	Cooling	Chiller - Chilled Water Variable-Flow System	sqft	Existing	0.21	15	\$0.50	15%	60%	\$0.24	0.67	0.98	AEG-BEST
Lumber Wood Products	Cooling	Chiller - Variable Speed Fans	sqft	Existing	0.08	15	\$0.03	15%	75%	\$0.04	0.35	0.49	New Jersey TRM
Lumber Wood Products	Cooling	HVAC - Economizer	sqft	Existing	0.10	10	\$0.25	18%	30%	\$0.30	0.33	0.49	AEG-BEST
Lumber Wood Products	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.25	15%	35%	\$11.12	0.06	0.10	7th Power Plan
Lumber Wood Products	Cooling	Destratification Fans (HVLS)	sqft	Existing	0.13	15	\$0.63	15%	50%	\$0.05	1.30	1.83	AEG Research
Lumber Wood Products	Heating	Destratification Fans (HVLS)	sqft	Existing	1.16	15	\$0.63	15%	50%	\$0.05	10.48	13.70	AEG Research
Lumber Wood Products	Cooling	RTU - Maintenance	sqft	Existing	0.07	3	\$0.07	15%	75%	\$0.32	0.70	1.07	AEG Research
Lumber Wood Products	Cooling	Thermostat - WiFi/Interactive	sqft	Existing	0.22	5	\$0.66	5%	15%	\$0.11	0.56	0.74	7th Power Plan
Lumber Wood Products	Heating	Thermostat - WiFi/Interactive	sqft	Existing	0.99	5	\$0.66	5%	15%	\$0.11	2.33	2.91	7th Power Plan
Lumber Wood Products	Ventilation	Thermostat - WiFi/Interactive	sqft	Existing	0.03	5	\$0.66	5%	15%	\$0.11	0.39	0.57	7th Power Plan
Lumber Wood Products	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.18	15	\$0.35	7%	33%	\$0.17	8.66	13.02	7th Power Plan
Lumber Wood Products	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.25	15	\$0.58	7%	33%	\$0.20	11.49	17.83	7th Power Plan
Lumber Wood Products	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	Existing	0.02	15	\$0.00	1%	2%	\$0.01	0.04	0.08	7th Power Plan
Lumber Wood Products	Interior Lighting	Interior Lighting - Timers and Timers	sqft	Existing	0.00	8	\$0.00	7%	7%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx

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Lumber Wood Products	Interior Lighting	Interior Lighting - Skylights	sqft	Existing	0.00	15	\$1.01	15%	23%	\$0.00	0.00	0.00	AEG Research
Lumber Wood Products	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	sqft	Existing	0.03	16	\$1.81	5%	40%	\$5.03	1.28	2.72	7th Power Plan
Lumber Wood Products	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	Existing	0.03	11	\$0.00	15%	50%	\$0.01	1.46	2.73	Illinois TRM
Lumber Wood Products	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	sqft	Existing	0.04	8	\$0.03	15%	25%	\$0.10	1.71	3.39	7th Power Plan
Lumber Wood Products	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	Existing	0.02	8	\$0.02	33%	60%	\$0.11	2.37	4.85	Pacific Gas and Electric Research
Lumber Wood Products	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	Existing	0.03	7	\$1.19	15%	30%	\$5.85	1.47	3.20	AEG Research
Lumber Wood Products	Process	Process - Conductivity Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Process	Process - Timers and Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Motors	Process - Timers and Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Process	Refrigeration - Floating Head Pressure	employee	Existing	16.26	15	\$18.96	20%	50%	\$0.13	0.72	0.94	RTF Workbook
Lumber Wood Products	Process	Refrigeration - System Optimization	employee	Existing	26.06	15	\$13.35	20%	50%	\$0.06	1.16	1.51	AEG Research
Lumber Wood Products	Motors	Pumping System - Equipment Upgrade	employee	Existing	629.99	10	\$119.66	9%	38%	\$0.06	25.56	37.03	7th Power Plan
Lumber Wood Products	Motors	Pumping System - System Optimization	employee	Existing	466.90	12	\$182.37	9%	38%	-\$0.03	18.36	25.61	UNIDO Study on Industrial Energy Efficiency
Lumber Wood Products	Motors	Pumping System - Variable Speed Drive	employee	Existing	462.50	10	\$189.73	9%	38%	\$0.05	18.11	25.45	UNIDO Study on Industrial Energy Efficiency
Lumber Wood Products	Motors	Fan System - Equipment Upgrade	employee	Existing	256.58	10	\$33.26	9%	38%	\$0.05	10.16	13.99	UNIDO Study on Industrial Energy Efficiency
Lumber Wood Products	Motors	Fan System - Flow Optimization	employee	Existing	302.55	10	\$55.02	9%	38%	\$0.02	11.97	16.51	UNIDO Study on Industrial Energy Efficiency
Lumber Wood Products	Motors	Fan System - Variable Speed Drive	employee	Existing	442.49	10	\$276.87	9%	38%	\$0.07	17.10	24.58	UNIDO Study on Industrial Energy Efficiency
Lumber Wood Products	Motors	Compressed Air - Equipment Upgrade	employee	Existing	424.27	10	\$40.66	17%	50%	\$0.04	20.19	28.89	7th Power Plan

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Lumber Wood Products	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	Existing	0.00	15	\$0.00	16%	38%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Lumber Wood Products	Motors	Compressed Air - Refrigerated Cycling Dryers	employee	Existing	0.00	10	\$0.00	16%	30%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Lumber Wood Products	Motors	Compressed Air - System Controls	employee	Existing	94.03	10	\$29.07	9%	38%	\$0.00	3.79	5.57	UNIDO Study on Industrial Energy Efficiency
Lumber Wood Products	Motors	Compressed Air - Leak Management Program	employee	Existing	241.23	10	\$29.22	18%	75%	\$0.05	19.65	28.22	7th Power Plan
Lumber Wood Products	Motors	Compressed Air - Variable Speed Drive	employee	Existing	171.41	15	\$178.22	26%	45%	\$0.10	4.54	6.88	UNIDO Study on Industrial Energy Efficiency
Lumber Wood Products	Motors	Compressed Air - Low Pressure-Drop Filters	employee	Existing	5.71	10	\$2.75	17%	50%	\$0.06	0.26	0.40	Illinois TRM
Lumber Wood Products	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	Existing	35.42	10	\$8.91	17%	50%	\$0.03	1.67	2.44	UNIDO Study on Industrial Energy Efficiency
Lumber Wood Products	Motors	Compressed Air - Outside Air Intake	employee	Existing	0.00	20	\$0.00	17%	50%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Lumber Wood Products	Motors	Compressed Air - Receiver Capacity Addition	employee	Existing	35.09	15	\$24.51	17%	50%	\$0.07	1.65	2.43	UNIDO Study on Industrial Energy Efficiency
Lumber Wood Products	Motors	Material Handling - Variable Speed Drive	employee	Existing	2,933.26	10	\$1,371.77	25%	45%	\$0.06	80.44	113.43	7th Power Plan
Lumber Wood Products	Motors	Motors - Green Rewind (<100 HP)	employee	Existing	39.52	10	\$22.63	10%	50%	\$0.07	10.73	15.39	7th Power Plan
Lumber Wood Products	Motors	Motors - Green Rewind (100 HP+)	employee	Existing	22.52	10	\$8.03	6%	25%	\$0.04	2.94	4.13	7th Power Plan
Lumber Wood Products	Motors	Switch from Belt Drive to Direct Drive	employee	Existing	342.45	12	\$99.32	16%	25%	\$0.03	22.50	31.24	2015-mdu-irp-report---volume-iii.pdf
Lumber Wood Products	Motors	Motors - Synchronous Belts	employee	Existing	90.36	10	\$29.88	16%	36%	\$0.04	12.74	18.75	7th Power Plan
Lumber Wood Products	Miscellaneous	Agriculture - Engine Block Timer	employee	Existing	940.38	3	\$13.91	0%	0%	\$0.01	0.00	0.00	Vermont TRM
Lumber Wood Products	Motors	Agriculture - Live Stock Waterer	employee	Existing	1,495.18	10	\$1,053.86	0%	0%	\$0.08	0.00	0.00	Ontario Power TRM
Lumber Wood Products	Process	Dairy - Milk Precoolers	employee	Existing	108.41	15	\$60.34	0%	0%	\$0.06	0.00	0.00	Ontario Power TRM
Lumber Wood Products	Process	Clean Room: Change Filter Strategy	employee	Existing	100.98	15	\$0.89	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Lumber Wood Products	Process	Clean Room: Chiller Optimize	employee	Existing	32.19	15	\$3.57	0%	0%	\$0.01	0.00	0.00	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Lumber Wood Products	Process	Clean Room: Clean Room HVAC	employee	Existing	19.55	15	\$4.31	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Lumber Wood Products	Process	Elec Chip Fab: Solidstate Chiller	employee	Existing	19.51	15	\$13.55	0%	0%	-\$0.08	0.00	0.00	7th Power Plan
Lumber Wood Products	Process	Elec Chip Fab: Eliminate Exhaust	employee	Existing	12.62	15	\$3.21	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Lumber Wood Products	Process	Elec Chip Fab: Exhaust Injector	employee	Existing	25.20	15	\$15.49	0%	0%	-\$0.11	0.00	0.00	7th Power Plan
Lumber Wood Products	Process	Elec Chip Fab: Reduce Gas Pressure	employee	Existing	25.25	15	\$0.31	0%	0%	-\$0.02	0.00	0.00	7th Power Plan
Lumber Wood Products	Motors	Panel: Hydraulic Press	employee	Existing	4,423.06	10	\$1,370.95	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Lumber Wood Products	Motors	Wood: Replace Pneumatic Conveyor	employee	Existing	5,195.49	10	\$102.67	15%	75%	-\$0.07	0.00	573.36	7th Power Plan
Lumber Wood Products	Process	Metal: New Arc Furnace	employee	Existing	1,317.35	10	\$165.76	0%	0%	-\$2.50	0.00	0.00	7th Power Plan
Lumber Wood Products	Process	Paper: Premium Control Large Material	employee	Existing	141.80	10	\$85.27	0%	0%	\$0.08	0.00	0.00	7th Power Plan
Lumber Wood Products	Process	Paper: Efficient Pulp Screen	employee	Existing	113.89	10	\$28.09	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Lumber Wood Products	Process	Kraft: Effluent Treatment System	employee	Existing	113.89	10	\$11.52	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Lumber Wood Products	Motors	Kraft: Efficient Agitator	employee	Existing	8,055.41	10	\$1,023.04	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Lumber Wood Products	Process	Mech Pulp: Premium Process	employee	Existing	1.27	5	\$0.20	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Lumber Wood Products	Motors	Mech Pulp: Refiner Plate Improvement	employee	Existing	68.08	1	\$3.90	0%	0%	\$0.05	0.00	0.00	7th Power Plan
Lumber Wood Products	Cooling	Transformer - High Efficiency	employee	Existing	21.14	10	\$85.09	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Lumber Wood Products	Heating	Transformer - High Efficiency	employee	Existing	94.54	10	\$85.09	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Lumber Wood Products	Ventilation	Transformer - High Efficiency	employee	Existing	2.69	10	\$85.09	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Lumber Wood Products	Interior Lighting	Transformer - High Efficiency	employee	Existing	20.51	10	\$85.09	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Lumber Wood Products	Exterior Lighting	Transformer - High Efficiency	employee	Existing	4.36	10	\$85.09	15%	15%	\$0.02	0.00	0.00	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Lumber Wood Products	Motors	Transformer - High Efficiency	employee	Existing	327.20	10	\$85.09	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Lumber Wood Products	Process	Transformer - High Efficiency	employee	Existing	56.79	10	\$85.09	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Lumber Wood Products	Miscellaneous	Transformer - High Efficiency	employee	Existing	35.00	10	\$85.09	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Lumber Wood Products	Cooling	Strategic Energy Management	employee	Existing	58.08	3	\$522.61	0%	24%	\$0.10	0.33	0.44	AEG Research
Lumber Wood Products	Heating	Strategic Energy Management	employee	Existing	270.62	3	\$522.61	0%	24%	\$0.10	1.45	1.83	AEG Research
Lumber Wood Products	Ventilation	Strategic Energy Management	employee	Existing	7.71	3	\$522.61	0%	24%	\$0.10	0.24	0.36	AEG Research
Lumber Wood Products	Interior Lighting	Strategic Energy Management	employee	Existing	58.52	3	\$522.61	0%	24%	\$0.10	1.48	2.61	AEG Research
Lumber Wood Products	Exterior Lighting	Strategic Energy Management	employee	Existing	12.53	3	\$522.61	0%	24%	\$0.10	0.33	0.57	AEG Research
Lumber Wood Products	Motors	Strategic Energy Management	employee	Existing	939.06	3	\$522.61	0%	24%	\$0.10	28.70	38.68	AEG Research
Lumber Wood Products	Process	Strategic Energy Management	employee	Existing	162.92	3	\$522.61	0%	24%	\$0.10	5.36	6.50	AEG Research
Lumber Wood Products	Miscellaneous	Strategic Energy Management	employee	Existing	100.35	3	\$522.61	0%	24%	\$0.10	4.26	3.94	AEG Research
Lumber Wood Products	Interior Lighting	Commissioning	employee	Existing	67.20	3	\$880.30	0%	0%	\$0.18	0.00	0.00	AEG Research
Lumber Wood Products	Exterior Lighting	Commissioning	employee	Existing	14.38	3	\$880.30	0%	0%	\$0.18	0.00	0.00	AEG Research
Lumber Wood Products	Motors	Commissioning	employee	Existing	1,077.66	3	\$880.30	0%	0%	\$0.18	0.00	0.00	AEG Research
Lumber Wood Products	Process	Commissioning	employee	Existing	186.91	3	\$880.30	0%	0%	\$0.18	0.00	0.00	AEG Research
Lumber Wood Products	Miscellaneous	Commissioning	employee	Existing	115.06	3	\$880.30	0%	0%	\$0.18	0.00	0.00	AEG Research
Lumber Wood Products	Interior Lighting	Retrocommissioning	employee	Existing	68.35	3	\$558.83	10%	35%	\$0.12	1.82	3.17	AEG Research
Lumber Wood Products	Exterior Lighting	Retrocommissioning	employee	Existing	14.54	3	\$558.83	10%	35%	\$0.12	0.40	0.69	AEG Research
Lumber Wood Products	Motors	Retrocommissioning	employee	Existing	1,090.65	3	\$558.83	10%	35%	\$0.12	34.94	46.74	AEG Research

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Lumber Wood Products	Process	Retrocommissioning	employee	Existing	189.29	3	\$558.83	10%	35%	\$0.12	6.53	7.86	AEG Research
Lumber Wood Products	Miscellaneous	Retrocommissioning	employee	Existing	116.68	3	\$558.83	10%	35%	\$0.12	5.18	4.76	AEG Research
Lumber Wood Products	Motors	Municipal Sewage Treatment	employee	Existing	81.33	12	\$60.16	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Lumber Wood Products	Motors	Municipal Water Supply Treatment	employee	Existing	0.00	12	\$0.00	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Lumber Wood Products	Cooling	Insulation - Ceiling	sqft	New	0.09	45	\$1.28	15%	25%	\$0.18	0.04	0.05	Building Energy Simulation Tool
Lumber Wood Products	Heating	Insulation - Ceiling	sqft	New	0.44	45	\$1.28	15%	25%	\$0.18	0.17	0.19	Building Energy Simulation Tool
Lumber Wood Products	Ventilation	Insulation - Ceiling	sqft	New	0.01	45	\$1.28	15%	25%	\$0.18	0.02	0.03	Building Energy Simulation Tool
Lumber Wood Products	Cooling	Insulation - Ducting	sqft	New	0.04	20	\$0.84	15%	25%	\$1.32	0.02	0.02	Building Energy Simulation Tool
Lumber Wood Products	Heating	Insulation - Ducting	sqft	New	0.02	20	\$0.84	15%	25%	\$1.32	0.01	0.01	Building Energy Simulation Tool
Lumber Wood Products	Ventilation	Insulation - Ducting	sqft	New	0.00	20	\$0.84	15%	25%	\$1.32	0.00	0.00	Building Energy Simulation Tool
Lumber Wood Products	Cooling	Insulation - Wall Cavity	sqft	New	0.00	45	\$0.15	45%	50%	\$0.02	0.00	0.00	Building Energy Simulation Tool
Lumber Wood Products	Heating	Insulation - Wall Cavity	sqft	New	0.59	45	\$0.15	45%	50%	\$0.02	0.12	0.13	Building Energy Simulation Tool
Lumber Wood Products	Ventilation	Insulation - Wall Cavity	sqft	New	0.01	45	\$0.15	45%	50%	\$0.02	0.02	0.02	Building Energy Simulation Tool
Lumber Wood Products	Cooling	HVAC - Duct Repair and Sealing	sqft	New	0.01	18	\$0.00	15%	25%	\$0.00	0.01	0.01	Building Energy Simulation Tool
Lumber Wood Products	Heating	HVAC - Duct Repair and Sealing	sqft	New	0.04	18	\$0.00	15%	25%	\$0.00	0.02	0.02	Building Energy Simulation Tool
Lumber Wood Products	Ventilation	HVAC - Duct Repair and Sealing	sqft	New	0.00	18	\$0.00	15%	25%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Lumber Wood Products	Cooling	Chiller - Chilled Water Reset	sqft	New	0.03	10	\$0.01	15%	45%	\$0.04	0.00	0.01	AEG-BEST
Lumber Wood Products	Cooling	Chiller - Chilled Water Variable-Flow System	sqft	New	0.17	15	\$0.50	15%	60%	\$0.29	0.04	0.06	AEG-BEST
Lumber Wood Products	Cooling	Chiller - Variable Speed Fans	sqft	New	0.06	15	\$0.03	15%	75%	\$0.05	0.02	0.03	New Jersey TRM

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Lumber Wood Products	Cooling	HVAC - Economizer	sqft	New	0.09	10	\$0.25	18%	30%	\$0.33	0.02	0.02	AEG-BEST
Lumber Wood Products	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.25	15%	35%	\$13.00	0.00	0.01	7th Power Plan
Lumber Wood Products	Cooling	Destratification Fans (HVLS)	sqft	New	0.12	15	\$0.63	15%	50%	\$0.06	0.09	0.12	AEG Research
Lumber Wood Products	Heating	Destratification Fans (HVLS)	sqft	New	1.09	15	\$0.63	15%	50%	\$0.06	0.75	0.94	AEG Research
Lumber Wood Products	Cooling	RTU - Maintenance	sqft	New	0.06	3	\$0.07	15%	75%	\$0.33	0.01	0.01	AEG Research
Lumber Wood Products	Cooling	Thermostat - WiFi/Interactive	sqft	New	0.21	5	\$0.66	5%	15%	\$0.12	0.01	0.02	7th Power Plan
Lumber Wood Products	Heating	Thermostat - WiFi/Interactive	sqft	New	0.96	5	\$0.66	5%	15%	\$0.12	0.05	0.06	7th Power Plan
Lumber Wood Products	Ventilation	Thermostat - WiFi/Interactive	sqft	New	0.02	5	\$0.66	5%	15%	\$0.12	0.01	0.01	7th Power Plan
Lumber Wood Products	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.15	15	\$0.35	22%	41%	\$0.17	1.81	2.49	7th Power Plan
Lumber Wood Products	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.20	15	\$0.58	22%	41%	\$0.20	2.46	3.40	7th Power Plan
Lumber Wood Products	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	New	0.02	15	\$0.00	1%	2%	\$0.01	0.00	0.00	7th Power Plan
Lumber Wood Products	Interior Lighting	Interior Lighting - Timeclocks and Timers	sqft	New	0.00	8	\$0.00	7%	7%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Lumber Wood Products	Interior Lighting	Interior Lighting - Skylights	sqft	New	0.00	15	\$1.01	18%	24%	\$0.00	0.00	0.00	AEG Research
Lumber Wood Products	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	sqft	New	0.02	16	\$1.81	5%	40%	\$5.13	0.10	0.16	7th Power Plan
Lumber Wood Products	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	New	0.02	11	\$0.00	15%	50%	\$0.01	0.08	0.14	Illinois TRM
Lumber Wood Products	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	sqft	New	0.03	8	\$0.03	15%	25%	\$0.11	0.07	0.13	7th Power Plan
Lumber Wood Products	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	New	0.02	8	\$0.02	44%	60%	\$0.11	0.06	0.11	Pacific Gas and Electric Research
Lumber Wood Products	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	New	0.02	7	\$1.19	15%	30%	\$6.11	0.06	0.11	AEG Research
Lumber Wood Products	Process	Process - Conductivity Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A

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Lumber Wood Products	Process	Process - Timers and Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Motors	Process - Timers and Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Process	Refrigeration - Floating Head Pressure	employee	New	16.28	15	\$13.40	20%	50%	\$0.09	0.06	0.07	RTF Workbook
Lumber Wood Products	Process	Refrigeration - System Optimization	employee	New	26.06	15	\$4.69	20%	50%	\$0.02	0.09	0.11	AEG Research
Lumber Wood Products	Motors	Pumping System - Equipment Upgrade	employee	New	670.71	10	\$119.66	9%	38%	\$0.06	1.66	2.12	7th Power Plan
Lumber Wood Products	Motors	Pumping System - System Optimization	employee	New	500.60	12	\$182.37	9%	38%	-\$0.03	2.02	2.45	UNIDO Study on Industrial Energy Efficiency
Lumber Wood Products	Motors	Pumping System - Variable Speed Drive	employee	New	498.63	10	\$189.73	9%	38%	\$0.05	1.84	2.25	UNIDO Study on Industrial Energy Efficiency
Lumber Wood Products	Motors	Fan System - Equipment Upgrade	employee	New	272.43	10	\$33.26	9%	38%	\$0.05	1.00	1.23	UNIDO Study on Industrial Energy Efficiency
Lumber Wood Products	Motors	Fan System - Flow Optimization	employee	New	321.64	10	\$55.02	9%	38%	\$0.02	1.18	1.45	UNIDO Study on Industrial Energy Efficiency
Lumber Wood Products	Motors	Fan System - Variable Speed Drive	employee	New	484.05	10	\$276.87	9%	38%	\$0.07	1.79	2.18	UNIDO Study on Industrial Energy Efficiency
Lumber Wood Products	Motors	Compressed Air - Equipment Upgrade	employee	New	447.65	10	\$40.66	17%	50%	\$0.04	1.29	1.65	7th Power Plan
Lumber Wood Products	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	New	0.00	15	\$0.00	16%	38%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Lumber Wood Products	Motors	Compressed Air - Refrigerated Cycling Dryers	employee	New	0.00	10	\$0.00	16%	30%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Lumber Wood Products	Motors	Compressed Air - System Controls	employee	New	101.04	10	\$29.07	9%	38%	\$0.00	0.25	0.32	UNIDO Study on Industrial Energy Efficiency
Lumber Wood Products	Motors	Compressed Air - Leak Management Program	employee	New	255.34	10	\$29.22	18%	75%	\$0.05	1.26	1.61	7th Power Plan
Lumber Wood Products	Motors	Compressed Air - Variable Speed Drive	employee	New	187.12	15	\$178.22	26%	45%	\$0.10	0.41	0.51	UNIDO Study on Industrial Energy Efficiency
Lumber Wood Products	Motors	Compressed Air - Low Pressure-Drop Filters	employee	New	6.24	10	\$2.75	17%	50%	\$0.06	0.02	0.02	Illinois TRM
Lumber Wood Products	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	New	37.97	10	\$8.91	17%	50%	\$0.03	0.11	0.14	UNIDO Study on Industrial Energy Efficiency
Lumber Wood Products	Motors	Compressed Air - Outside Air Intake	employee	New	0.00	20	\$0.00	17%	50%	\$0.00	0.00	0.00	Michigan Energy Measures Database

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Lumber Wood Products	Motors	Compressed Air - Receiver Capacity Addition	employee	New	37.82	15	\$24.51	17%	50%	\$0.07	0.15	0.18	UNIDO Study on Industrial Energy Efficiency
Lumber Wood Products	Motors	Material Handling - Variable Speed Drive	employee	New	3,169.55	10	\$1,371.77	25%	45%	\$0.06	8.22	10.03	7th Power Plan
Lumber Wood Products	Motors	Motors - Green Rewind (<100 HP)	employee	New	43.17	10	\$22.63	10%	50%	\$0.07	1.12	1.37	7th Power Plan
Lumber Wood Products	Motors	Motors - Green Rewind (100 HP+)	employee	New	24.26	10	\$8.03	6%	25%	\$0.04	0.30	0.36	7th Power Plan
Lumber Wood Products	Motors	Switch from Belt Drive to Direct Drive	employee	New	366.08	12	\$99.32	16%	25%	\$0.03	2.46	2.98	2015-mdu-irp-report---volume-iii.pdf
Lumber Wood Products	Motors	Motors - Synchronous Belts	employee	New	97.15	10	\$29.88	16%	36%	\$0.04	0.84	1.07	7th Power Plan
Lumber Wood Products	Miscellaneous	Agriculture - Engine Block Timer	employee	New	940.38	3	\$13.91	0%	0%	\$0.01	0.00	0.00	Vermont TRM
Lumber Wood Products	Motors	Agriculture - Live Stock Waterer	employee	New	1,639.19	10	\$1,053.86	0%	0%	\$0.08	0.00	0.00	Ontario Power TRM
Lumber Wood Products	Process	Dairy - Milk Precoolers	employee	New	108.52	15	\$60.34	0%	0%	\$0.06	0.00	0.00	Ontario Power TRM
Lumber Wood Products	Process	Clean Room: Change Filter Strategy	employee	New	100.98	15	\$0.89	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Lumber Wood Products	Process	Clean Room: Chiller Optimize	employee	New	32.19	15	\$3.57	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Lumber Wood Products	Process	Clean Room: Clean Room HVAC	employee	New	19.53	15	\$4.31	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Lumber Wood Products	Process	Elec Chip Fab: Solidstate Chiller	employee	New	19.53	15	\$13.55	0%	0%	-\$0.08	0.00	0.00	7th Power Plan
Lumber Wood Products	Process	Elec Chip Fab: Eliminate Exhaust	employee	New	12.61	15	\$3.21	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Lumber Wood Products	Process	Elec Chip Fab: Exhaust Injector	employee	New	25.23	15	\$15.49	0%	0%	-\$0.11	0.00	0.00	7th Power Plan
Lumber Wood Products	Process	Elec Chip Fab: Reduce Gas Pressure	employee	New	25.25	15	\$0.31	0%	0%	-\$0.02	0.00	0.00	7th Power Plan
Lumber Wood Products	Motors	Panel: Hydraulic Press	employee	New	4,757.44	10	\$1,370.95	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Lumber Wood Products	Motors	Wood: Replace Pneumatic Conveyor	employee	New	5,195.49	10	\$102.67	15%	75%	-\$0.07	0.00	49.29	7th Power Plan
Lumber Wood Products	Process	Metal: New Arc Furnace	employee	New	1,316.49	10	\$165.76	0%	0%	-\$2.50	0.00	0.00	7th Power Plan

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Lumber Wood Products	Process	Paper: Premium Control Large Material	employee	New	142.04	10	\$85.27	0%	0%	\$0.08	0.00	0.00	7th Power Plan
Lumber Wood Products	Process	Paper: Efficient Pulp Screen	employee	New	113.82	10	\$28.09	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Lumber Wood Products	Process	Kraft: Effluent Treatment System	employee	New	113.82	10	\$11.52	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Lumber Wood Products	Motors	Kraft: Efficient Agitator	employee	New	8,563.58	10	\$1,023.04	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Lumber Wood Products	Process	Mech Pulp: Premium Process	employee	New	1.27	5	\$0.20	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Lumber Wood Products	Motors	Mech Pulp: Refiner Plate Improvement	employee	New	74.64	1	\$3.90	0%	0%	\$0.05	0.00	0.00	7th Power Plan
Lumber Wood Products	Cooling	Transformer - High Efficiency	employee	New	19.21	10	\$83.68	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Lumber Wood Products	Heating	Transformer - High Efficiency	employee	New	91.74	10	\$83.68	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Lumber Wood Products	Ventilation	Transformer - High Efficiency	employee	New	1.76	10	\$83.68	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Lumber Wood Products	Interior Lighting	Transformer - High Efficiency	employee	New	16.76	10	\$83.68	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Lumber Wood Products	Exterior Lighting	Transformer - High Efficiency	employee	New	3.60	10	\$83.68	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Lumber Wood Products	Motors	Transformer - High Efficiency	employee	New	358.71	10	\$83.68	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Lumber Wood Products	Process	Transformer - High Efficiency	employee	New	56.89	10	\$83.68	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Lumber Wood Products	Miscellaneous	Transformer - High Efficiency	employee	New	33.21	10	\$83.68	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Lumber Wood Products	Cooling	Strategic Energy Management	employee	New	54.68	3	\$513.95	0%	24%	\$0.10	0.00	0.00	AEG Research
Lumber Wood Products	Heating	Strategic Energy Management	employee	New	264.24	3	\$513.95	0%	24%	\$0.10	0.01	0.01	AEG Research
Lumber Wood Products	Ventilation	Strategic Energy Management	employee	New	5.08	3	\$513.95	0%	24%	\$0.10	0.00	0.00	AEG Research
Lumber Wood Products	Interior Lighting	Strategic Energy Management	employee	New	48.42	3	\$513.95	0%	24%	\$0.10	0.01	0.02	AEG Research
Lumber Wood Products	Exterior Lighting	Strategic Energy Management	employee	New	10.40	3	\$513.95	0%	24%	\$0.10	0.00	0.00	AEG Research

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Lumber Wood Products	Motors	Strategic Energy Management	employee	New	1,036.27	3	\$513.95	0%	24%	\$0.10	0.26	0.35	AEG Research
Lumber Wood Products	Process	Strategic Energy Management	employee	New	164.34	3	\$513.95	0%	24%	\$0.10	0.04	0.05	AEG Research
Lumber Wood Products	Miscellaneous	Strategic Energy Management	employee	New	95.95	3	\$513.95	0%	24%	\$0.10	0.03	0.03	AEG Research
Lumber Wood Products	Interior Lighting	Commissioning	employee	New	55.66	3	\$877.04	10%	35%	\$0.18	0.01	0.03	AEG Research
Lumber Wood Products	Exterior Lighting	Commissioning	employee	New	11.98	3	\$877.04	10%	35%	\$0.18	0.00	0.01	AEG Research
Lumber Wood Products	Motors	Commissioning	employee	New	1,194.45	3	\$877.04	10%	35%	\$0.18	0.31	0.42	AEG Research
Lumber Wood Products	Process	Commissioning	employee	New	189.42	3	\$877.04	10%	35%	\$0.18	0.05	0.06	AEG Research
Lumber Wood Products	Miscellaneous	Commissioning	employee	New	110.60	3	\$877.04	10%	35%	\$0.18	0.04	0.03	AEG Research
Lumber Wood Products	Interior Lighting	Retrocommissioning	employee	New	55.87	3	\$556.76	0%	0%	\$0.12	0.00	0.00	AEG Research
Lumber Wood Products	Exterior Lighting	Retrocommissioning	employee	New	12.00	3	\$556.76	0%	0%	\$0.12	0.00	0.00	AEG Research
Lumber Wood Products	Motors	Retrocommissioning	employee	New	1,195.70	3	\$556.76	0%	0%	\$0.12	0.00	0.00	AEG Research
Lumber Wood Products	Process	Retrocommissioning	employee	New	189.62	3	\$556.76	0%	0%	\$0.12	0.00	0.00	AEG Research
Lumber Wood Products	Miscellaneous	Retrocommissioning	employee	New	110.71	3	\$556.76	0%	0%	\$0.12	0.00	0.00	AEG Research
Lumber Wood Products	Motors	Municipal Sewage Treatment	employee	New	88.85	12	\$60.16	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Lumber Wood Products	Motors	Municipal Water Supply Treatment	employee	New	0.00	12	\$0.00	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Metal Mfg	Cooling	Insulation - Ceiling	sqft	Existing	0.10	45	\$1.28	15%	25%	\$0.17	0.69	0.89	Building Energy Simulation Tool
Metal Mfg	Heating	Insulation - Ceiling	sqft	Existing	0.45	45	\$1.28	15%	25%	\$0.17	2.77	3.44	Building Energy Simulation Tool
Metal Mfg	Ventilation	Insulation - Ceiling	sqft	Existing	0.01	45	\$1.28	15%	25%	\$0.17	0.46	0.67	Building Energy Simulation Tool
Metal Mfg	Cooling	Insulation - Ducting	sqft	Existing	0.04	20	\$0.84	15%	25%	\$1.23	0.25	0.33	Building Energy Simulation Tool

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Metal Mfg	Heating	Insulation - Ducting	sqft	Existing	0.02	20	\$0.84	15%	25%	\$1.23	0.11	0.14	Building Energy Simulation Tool
Metal Mfg	Ventilation	Insulation - Ducting	sqft	Existing	0.00	20	\$0.84	15%	25%	\$1.23	0.02	0.03	Building Energy Simulation Tool
Metal Mfg	Cooling	Insulation - Wall Cavity	sqft	Existing	0.00	45	\$0.15	45%	50%	\$0.02	0.01	0.01	Building Energy Simulation Tool
Metal Mfg	Heating	Insulation - Wall Cavity	sqft	Existing	0.64	45	\$0.15	45%	50%	\$0.02	1.99	2.40	Building Energy Simulation Tool
Metal Mfg	Ventilation	Insulation - Wall Cavity	sqft	Existing	0.02	45	\$0.15	45%	50%	\$0.02	0.31	0.45	Building Energy Simulation Tool
Metal Mfg	Cooling	HVAC - Duct Repair and Sealing	sqft	Existing	0.01	18	\$0.00	15%	25%	\$0.00	0.09	0.12	Building Energy Simulation Tool
Metal Mfg	Heating	HVAC - Duct Repair and Sealing	sqft	Existing	0.04	18	\$0.00	15%	25%	\$0.00	0.28	0.34	Building Energy Simulation Tool
Metal Mfg	Ventilation	HVAC - Duct Repair and Sealing	sqft	Existing	0.00	18	\$0.00	15%	25%	\$0.00	0.04	0.06	Building Energy Simulation Tool
Metal Mfg	Cooling	Chiller - Chilled Water Reset	sqft	Existing	0.04	10	\$0.01	15%	45%	\$0.03	0.22	0.31	AEG-BEST
Metal Mfg	Cooling	Chiller - Chilled Water Variable-Flow System	sqft	Existing	0.21	15	\$0.50	15%	60%	\$0.24	1.75	2.56	AEG-BEST
Metal Mfg	Cooling	Chiller - Variable Speed Fans	sqft	Existing	0.08	15	\$0.03	15%	75%	\$0.04	0.90	1.27	New Jersey TRM
Metal Mfg	Cooling	HVAC - Economizer	sqft	Existing	0.10	10	\$0.25	18%	30%	\$0.30	0.87	1.27	AEG-BEST
Metal Mfg	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.25	15%	35%	\$11.12	0.15	0.26	7th Power Plan
Metal Mfg	Cooling	Destratification Fans (HVLS)	sqft	Existing	0.13	15	\$0.63	15%	50%	\$0.05	3.39	4.77	AEG Research
Metal Mfg	Heating	Destratification Fans (HVLS)	sqft	Existing	1.16	15	\$0.63	15%	50%	\$0.05	27.34	35.74	AEG Research
Metal Mfg	Cooling	RTU - Maintenance	sqft	Existing	0.07	3	\$0.07	15%	75%	\$0.32	1.82	2.78	AEG Research
Metal Mfg	Cooling	Thermostat - WiFi/Interactive	sqft	Existing	0.22	5	\$0.66	5%	15%	\$0.11	1.47	1.93	7th Power Plan
Metal Mfg	Heating	Thermostat - WiFi/Interactive	sqft	Existing	0.99	5	\$0.66	5%	15%	\$0.11	6.08	7.59	7th Power Plan
Metal Mfg	Ventilation	Thermostat - WiFi/Interactive	sqft	Existing	0.03	5	\$0.66	5%	15%	\$0.11	1.02	1.48	7th Power Plan
Metal Mfg	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.18	15	\$0.35	7%	33%	\$0.17	14.03	21.09	7th Power Plan
Metal Mfg	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.25	15	\$0.58	7%	33%	\$0.20	18.61	28.89	7th Power Plan

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Metal Mfg	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	Existing	0.02	15	\$0.00	1%	2%	\$0.01	0.07	0.14	7th Power Plan
Metal Mfg	Interior Lighting	Interior Lighting - Timeclocks and Timers	sqft	Existing	0.00	8	\$0.00	7%	7%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Metal Mfg	Interior Lighting	Interior Lighting - Skylights	sqft	Existing	0.00	15	\$1.01	15%	23%	\$0.00	0.00	0.00	AEG Research
Metal Mfg	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	sqft	Existing	0.03	16	\$1.81	5%	40%	\$5.03	2.07	4.40	7th Power Plan
Metal Mfg	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	Existing	0.03	11	\$0.00	15%	50%	\$0.01	2.36	4.42	Illinois TRM
Metal Mfg	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	sqft	Existing	0.04	8	\$0.03	15%	25%	\$0.10	2.76	5.49	7th Power Plan
Metal Mfg	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	Existing	0.02	8	\$0.02	33%	60%	\$0.11	3.84	7.85	Pacific Gas and Electric Research
Metal Mfg	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	Existing	0.03	7	\$1.19	15%	30%	\$5.85	2.39	5.19	AEG Research
Metal Mfg	Process	Process - Conductivity Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Metal Mfg	Process	Process - Timers and Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Metal Mfg	Motors	Process - Timers and Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Metal Mfg	Process	Refrigeration - Floating Head Pressure	employee	Existing	15.55	15	\$20.05	20%	50%	\$0.13	1.90	2.87	RTF Workbook
Metal Mfg	Process	Refrigeration - System Optimization	employee	Existing	24.92	15	\$14.12	20%	50%	\$0.06	3.05	4.59	AEG Research
Metal Mfg	Motors	Pumping System - Equipment Upgrade	employee	Existing	173.43	10	\$30.43	9%	38%	\$0.06	22.05	29.27	7th Power Plan
Metal Mfg	Motors	Pumping System - System Optimization	employee	Existing	128.43	12	\$46.37	9%	38%	-\$0.03	15.83	20.53	UNIDO Study on Industrial Energy Efficiency
Metal Mfg	Motors	Pumping System - Variable Speed Drive	employee	Existing	126.91	10	\$48.25	9%	38%	\$0.05	15.57	20.37	UNIDO Study on Industrial Energy Efficiency
Metal Mfg	Motors	Fan System - Equipment Upgrade	employee	Existing	45.70	10	\$5.48	9%	38%	\$0.05	5.67	7.27	UNIDO Study on Industrial Energy Efficiency
Metal Mfg	Motors	Fan System - Flow Optimization	employee	Existing	53.93	10	\$9.07	9%	38%	\$0.02	6.68	8.58	UNIDO Study on Industrial Energy Efficiency
Metal Mfg	Motors	Fan System - Variable Speed Drive	employee	Existing	78.59	10	\$45.63	9%	38%	\$0.07	9.52	12.74	UNIDO Study on Industrial Energy Efficiency

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Metal Mfg	Motors	Compressed Air - Equipment Upgrade	employee	Existing	315.76	10	\$27.54	17%	50%	\$0.04	47.29	61.33	7th Power Plan
Metal Mfg	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	Existing	0.00	15	\$0.00	16%	38%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Metal Mfg	Motors	Compressed Air - Refrigerated Cycling Dryers	employee	Existing	0.00	10	\$0.00	16%	30%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Metal Mfg	Motors	Compressed Air - System Controls	employee	Existing	68.90	10	\$19.69	9%	38%	\$0.00	8.70	11.73	UNIDO Study on Industrial Energy Efficiency
Metal Mfg	Motors	Compressed Air - Leak Management Program	employee	Existing	178.06	10	\$19.80	18%	75%	\$0.05	45.53	59.64	7th Power Plan
Metal Mfg	Motors	Compressed Air - Variable Speed Drive	employee	Existing	125.39	15	\$120.73	26%	45%	\$0.10	10.42	14.46	UNIDO Study on Industrial Energy Efficiency
Metal Mfg	Motors	Compressed Air - Low Pressure-Drop Filters	employee	Existing	4.18	10	\$1.86	17%	50%	\$0.06	0.61	0.84	Illinois TRM
Metal Mfg	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	Existing	25.98	10	\$6.04	17%	50%	\$0.03	3.84	5.14	UNIDO Study on Industrial Energy Efficiency
Metal Mfg	Motors	Compressed Air - Outside Air Intake	employee	Existing	0.00	20	\$0.00	17%	50%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Metal Mfg	Motors	Compressed Air - Receiver Capacity Addition	employee	Existing	25.67	15	\$16.60	17%	50%	\$0.07	3.77	5.11	UNIDO Study on Industrial Energy Efficiency
Metal Mfg	Motors	Material Handling - Variable Speed Drive	employee	Existing	769.88	10	\$333.65	25%	45%	\$0.06	66.17	86.84	7th Power Plan
Metal Mfg	Motors	Motors - Green Rewind (<100 HP)	employee	Existing	11.12	10	\$5.91	10%	50%	\$0.07	9.47	12.64	7th Power Plan
Metal Mfg	Motors	Motors - Green Rewind (100 HP+)	employee	Existing	6.35	10	\$2.10	6%	25%	\$0.04	2.60	3.39	7th Power Plan
Metal Mfg	Motors	Switch from Belt Drive to Direct Drive	employee	Existing	96.82	12	\$25.94	16%	25%	\$0.03	19.95	25.74	2015-mdu-irp-report---volume-iii.pdf
Metal Mfg	Motors	Motors - Synchronous Belts	employee	Existing	25.48	10	\$7.80	16%	36%	\$0.04	11.26	15.20	7th Power Plan
Metal Mfg	Miscellaneous	Agriculture - Engine Block Timer	employee	Existing	322.96	3	\$4.78	0%	0%	\$0.01	0.00	0.00	Vermont TRM
Metal Mfg	Motors	Agriculture - Live Stock Waterer	employee	Existing	410.29	10	\$267.98	0%	0%	\$0.08	0.00	0.00	Ontario Power TRM
Metal Mfg	Process	Dairy - Milk Precoolers	employee	Existing	103.65	15	\$63.79	0%	0%	\$0.06	0.00	0.00	Ontario Power TRM
Metal Mfg	Process	Clean Room: Change Filter Strategy	employee	Existing	174.88	15	\$1.55	0%	0%	\$0.00	0.00	0.00	7th Power Plan

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Metal Mfg	Process	Clean Room: Chiller Optimize	employee	Existing	34.03	15	\$3.78	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Metal Mfg	Process	Clean Room: Clean Room HVAC	employee	Existing	20.66	15	\$4.56	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Metal Mfg	Process	Elec Chip Fab: Solidstate Chiller	employee	Existing	18.66	15	\$14.32	0%	0%	-\$0.08	0.00	0.00	7th Power Plan
Metal Mfg	Process	Elec Chip Fab: Eliminate Exhaust	employee	Existing	19.77	15	\$5.56	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Metal Mfg	Process	Elec Chip Fab: Exhaust Injector	employee	Existing	39.47	15	\$26.83	0%	0%	-\$0.11	0.00	0.00	7th Power Plan
Metal Mfg	Process	Elec Chip Fab: Reduce Gas Pressure	employee	Existing	43.72	15	\$0.54	0%	0%	-\$0.02	0.00	0.00	7th Power Plan
Metal Mfg	Motors	Panel: Hydraulic Press	employee	Existing	1,161.83	10	\$333.45	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Metal Mfg	Motors	Wood: Replace Pneumatic Conveyor	employee	Existing	1,263.66	10	\$24.97	0%	0%	-\$0.07	0.00	0.00	7th Power Plan
Metal Mfg	Process	Metal: New Arc Furnace	employee	Existing	1,168.44	10	\$147.03	15%	75%	-\$2.50	291.32	350.23	7th Power Plan
Metal Mfg	Process	Paper: Premium Control Large Material	employee	Existing	136.92	10	\$91.04	0%	0%	\$0.08	0.00	0.00	7th Power Plan
Metal Mfg	Process	Paper: Efficient Pulp Screen	employee	Existing	109.96	10	\$29.99	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Metal Mfg	Process	Kraft: Effluent Treatment System	employee	Existing	121.60	10	\$12.29	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Metal Mfg	Motors	Kraft: Efficient Agitator	employee	Existing	2,119.14	10	\$248.83	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Metal Mfg	Process	Mech Pulp: Premium Process	employee	Existing	1.23	5	\$0.21	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Metal Mfg	Motors	Mech Pulp: Refiner Plate Improvement	employee	Existing	17.87	1	\$0.95	0%	0%	\$0.05	0.00	0.00	7th Power Plan
Metal Mfg	Cooling	Transformer - High Efficiency	employee	Existing	18.33	10	\$40.56	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Metal Mfg	Heating	Transformer - High Efficiency	employee	Existing	81.98	10	\$40.56	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Metal Mfg	Ventilation	Transformer - High Efficiency	employee	Existing	2.33	10	\$40.56	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Metal Mfg	Interior Lighting	Transformer - High Efficiency	employee	Existing	11.04	10	\$40.56	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Metal Mfg	Exterior Lighting	Transformer - High Efficiency	employee	Existing	2.35	10	\$40.56	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Metal Mfg	Motors	Transformer - High Efficiency	employee	Existing	92.21	10	\$40.56	15%	15%	\$0.02	0.00	0.00	7th Power Plan

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Metal Mfg	Process	Transformer - High Efficiency	employee	Existing	54.83	10	\$40.56	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Metal Mfg	Miscellaneous	Transformer - High Efficiency	employee	Existing	12.02	10	\$40.56	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Metal Mfg	Cooling	Strategic Energy Management	employee	Existing	50.36	3	\$249.10	0%	5%	\$0.10	0.18	0.24	AEG Research
Metal Mfg	Heating	Strategic Energy Management	employee	Existing	234.66	3	\$249.10	0%	5%	\$0.10	0.79	0.99	AEG Research
Metal Mfg	Ventilation	Strategic Energy Management	employee	Existing	6.68	3	\$249.10	0%	5%	\$0.10	0.13	0.19	AEG Research
Metal Mfg	Interior Lighting	Strategic Energy Management	employee	Existing	31.44	3	\$249.10	0%	5%	\$0.10	0.50	0.88	AEG Research
Metal Mfg	Exterior Lighting	Strategic Energy Management	employee	Existing	6.73	3	\$249.10	0%	5%	\$0.10	0.11	0.19	AEG Research
Metal Mfg	Motors	Strategic Energy Management	employee	Existing	263.94	3	\$249.10	0%	5%	\$0.10	5.27	6.71	AEG Research
Metal Mfg	Process	Strategic Energy Management	employee	Existing	156.98	3	\$249.10	0%	5%	\$0.10	2.95	4.01	AEG Research
Metal Mfg	Miscellaneous	Strategic Energy Management	employee	Existing	34.37	3	\$249.10	0%	5%	\$0.10	0.91	0.85	AEG Research
Metal Mfg	Interior Lighting	Commissioning	employee	Existing	36.24	3	\$332.96	0%	0%	\$0.18	0.00	0.00	AEG Research
Metal Mfg	Exterior Lighting	Commissioning	employee	Existing	7.76	3	\$332.96	0%	0%	\$0.18	0.00	0.00	AEG Research
Metal Mfg	Motors	Commissioning	employee	Existing	304.19	3	\$332.96	0%	0%	\$0.18	0.00	0.00	AEG Research
Metal Mfg	Process	Commissioning	employee	Existing	180.93	3	\$332.96	0%	0%	\$0.18	0.00	0.00	AEG Research
Metal Mfg	Miscellaneous	Commissioning	employee	Existing	39.61	3	\$332.96	0%	0%	\$0.18	0.00	0.00	AEG Research
Metal Mfg	Interior Lighting	Retrocommissioning	employee	Existing	36.80	3	\$211.37	5%	39%	\$0.12	4.01	6.98	AEG Research
Metal Mfg	Exterior Lighting	Retrocommissioning	employee	Existing	7.83	3	\$211.37	5%	39%	\$0.12	0.87	1.52	AEG Research
Metal Mfg	Motors	Retrocommissioning	employee	Existing	307.36	3	\$211.37	5%	39%	\$0.12	42.04	53.06	AEG Research
Metal Mfg	Process	Retrocommissioning	employee	Existing	182.78	3	\$211.37	5%	39%	\$0.12	23.56	31.72	AEG Research
Metal Mfg	Miscellaneous	Retrocommissioning	employee	Existing	40.07	3	\$211.37	5%	39%	\$0.12	7.29	6.70	AEG Research
Metal Mfg	Motors	Municipal Sewage Treatment	employee	Existing	22.29	12	\$15.30	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Metal Mfg	Motors	Municipal Water Supply Treatment	employee	Existing	0.00	12	\$0.00	0%	0%	\$0.00	0.00	0.00	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Metal Mfg	Cooling	Insulation - Ceiling	sqft	New	0.09	45	\$1.28	15%	25%	\$0.18	0.11	0.12	Building Energy Simulation Tool
Metal Mfg	Heating	Insulation - Ceiling	sqft	New	0.44	45	\$1.28	15%	25%	\$0.18	0.44	0.49	Building Energy Simulation Tool
Metal Mfg	Ventilation	Insulation - Ceiling	sqft	New	0.01	45	\$1.28	15%	25%	\$0.18	0.06	0.08	Building Energy Simulation Tool
Metal Mfg	Cooling	Insulation - Ducting	sqft	New	0.04	20	\$0.84	15%	25%	\$1.32	0.04	0.05	Building Energy Simulation Tool
Metal Mfg	Heating	Insulation - Ducting	sqft	New	0.02	20	\$0.84	15%	25%	\$1.32	0.02	0.02	Building Energy Simulation Tool
Metal Mfg	Ventilation	Insulation - Ducting	sqft	New	0.00	20	\$0.84	15%	25%	\$1.32	0.00	0.00	Building Energy Simulation Tool
Metal Mfg	Cooling	Insulation - Wall Cavity	sqft	New	0.00	45	\$0.15	45%	50%	\$0.02	0.00	0.00	Building Energy Simulation Tool
Metal Mfg	Heating	Insulation - Wall Cavity	sqft	New	0.59	45	\$0.15	45%	50%	\$0.02	0.30	0.33	Building Energy Simulation Tool
Metal Mfg	Ventilation	Insulation - Wall Cavity	sqft	New	0.01	45	\$0.15	45%	50%	\$0.02	0.04	0.05	Building Energy Simulation Tool
Metal Mfg	Cooling	HVAC - Duct Repair and Sealing	sqft	New	0.01	18	\$0.00	15%	25%	\$0.00	0.01	0.01	Building Energy Simulation Tool
Metal Mfg	Heating	HVAC - Duct Repair and Sealing	sqft	New	0.04	18	\$0.00	15%	25%	\$0.00	0.04	0.05	Building Energy Simulation Tool
Metal Mfg	Ventilation	HVAC - Duct Repair and Sealing	sqft	New	0.00	18	\$0.00	15%	25%	\$0.00	0.01	0.01	Building Energy Simulation Tool
Metal Mfg	Cooling	Chiller - Chilled Water Reset	sqft	New	0.03	10	\$0.01	15%	45%	\$0.04	0.01	0.01	AEG-BEST
Metal Mfg	Cooling	Chiller - Chilled Water Variable-Flow System	sqft	New	0.17	15	\$0.50	15%	60%	\$0.29	0.11	0.14	AEG-BEST
Metal Mfg	Cooling	Chiller - Variable Speed Fans	sqft	New	0.06	15	\$0.03	15%	75%	\$0.05	0.06	0.07	New Jersey TRM
Metal Mfg	Cooling	HVAC - Economizer	sqft	New	0.09	10	\$0.25	18%	30%	\$0.33	0.05	0.06	AEG-BEST
Metal Mfg	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.25	15%	35%	\$12.99	0.01	0.01	7th Power Plan
Metal Mfg	Cooling	Destratification Fans (HVLS)	sqft	New	0.12	15	\$0.63	15%	50%	\$0.06	0.23	0.30	AEG Research
Metal Mfg	Heating	Destratification Fans (HVLS)	sqft	New	1.09	15	\$0.63	15%	50%	\$0.06	1.88	2.34	AEG Research
Metal Mfg	Cooling	RTU - Maintenance	sqft	New	0.06	3	\$0.07	15%	75%	\$0.33	0.02	0.03	AEG Research
Metal Mfg	Cooling	Thermostat - WiFi/Interactive	sqft	New	0.21	5	\$0.66	5%	15%	\$0.12	0.03	0.04	7th Power Plan

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Metal Mfg	Heating	Thermostat - WiFi/Interactive	sqft	New	0.96	5	\$0.66	5%	15%	\$0.12	0.13	0.16	7th Power Plan
Metal Mfg	Ventilation	Thermostat - WiFi/Interactive	sqft	New	0.02	5	\$0.66	5%	15%	\$0.12	0.02	0.03	7th Power Plan
Metal Mfg	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.15	15	\$0.35	22%	41%	\$0.17	2.90	3.97	7th Power Plan
Metal Mfg	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.20	15	\$0.58	22%	41%	\$0.20	3.93	5.42	7th Power Plan
Metal Mfg	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	New	0.02	15	\$0.00	1%	2%	\$0.01	0.00	0.01	7th Power Plan
Metal Mfg	Interior Lighting	Interior Lighting - Timeclocks and Timers	sqft	New	0.00	8	\$0.00	7%	7%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Metal Mfg	Interior Lighting	Interior Lighting - Skylights	sqft	New	0.00	15	\$1.01	18%	24%	\$0.00	0.00	0.00	AEG Research
Metal Mfg	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	sqft	New	0.02	16	\$1.81	5%	40%	\$5.13	0.15	0.25	7th Power Plan
Metal Mfg	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	New	0.02	11	\$0.00	15%	50%	\$0.01	0.13	0.22	Illinois TRM
Metal Mfg	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	sqft	New	0.03	8	\$0.03	15%	25%	\$0.11	0.11	0.20	7th Power Plan
Metal Mfg	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	New	0.02	8	\$0.02	44%	60%	\$0.11	0.09	0.17	Pacific Gas and Electric Research
Metal Mfg	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	New	0.02	7	\$1.19	15%	30%	\$6.12	0.09	0.17	AEG Research
Metal Mfg	Process	Process - Conductivity Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Metal Mfg	Process	Process - Timers and Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Metal Mfg	Motors	Process - Timers and Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Metal Mfg	Process	Refrigeration - Floating Head Pressure	employee	New	16.50	15	\$14.17	20%	50%	\$0.09	0.16	0.20	RTF Workbook
Metal Mfg	Process	Refrigeration - System Optimization	employee	New	27.55	15	\$4.95	20%	50%	\$0.02	0.27	0.33	AEG Research
Metal Mfg	Motors	Pumping System - Equipment Upgrade	employee	New	176.77	10	\$30.43	9%	38%	\$0.06	1.25	1.59	7th Power Plan
Metal Mfg	Motors	Pumping System - System Optimization	employee	New	131.92	12	\$46.37	9%	38%	-\$0.03	1.54	1.88	UNIDO Study on Industrial Energy Efficiency

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Metal Mfg	Motors	Pumping System - Variable Speed Drive	employee	New	131.31	10	\$48.25	9%	38%	\$0.05	1.41	1.73	UNIDO Study on Industrial Energy Efficiency
Metal Mfg	Motors	Fan System - Equipment Upgrade	employee	New	46.50	10	\$5.48	9%	38%	\$0.05	0.50	0.61	UNIDO Study on Industrial Energy Efficiency
Metal Mfg	Motors	Fan System - Flow Optimization	employee	New	54.92	10	\$9.07	9%	38%	\$0.02	0.59	0.72	UNIDO Study on Industrial Energy Efficiency
Metal Mfg	Motors	Fan System - Variable Speed Drive	employee	New	82.62	10	\$45.63	9%	38%	\$0.07	0.89	1.09	UNIDO Study on Industrial Energy Efficiency
Metal Mfg	Motors	Compressed Air - Equipment Upgrade	employee	New	315.76	10	\$27.54	17%	50%	\$0.04	2.60	3.32	7th Power Plan
Metal Mfg	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	New	0.00	15	\$0.00	16%	38%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Metal Mfg	Motors	Compressed Air - Refrigerated Cycling Dryers	employee	New	0.00	10	\$0.00	16%	30%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Metal Mfg	Motors	Compressed Air - System Controls	employee	New	70.94	10	\$19.69	9%	38%	\$0.00	0.50	0.64	UNIDO Study on Industrial Energy Efficiency
Metal Mfg	Motors	Compressed Air - Leak Management Program	employee	New	179.62	10	\$19.80	18%	75%	\$0.05	2.54	3.23	7th Power Plan
Metal Mfg	Motors	Compressed Air - Variable Speed Drive	employee	New	131.37	15	\$120.73	26%	45%	\$0.10	0.83	1.02	UNIDO Study on Industrial Energy Efficiency
Metal Mfg	Motors	Compressed Air - Low Pressure-Drop Filters	employee	New	4.38	10	\$1.86	17%	50%	\$0.06	0.04	0.05	Illinois TRM
Metal Mfg	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	New	26.66	10	\$6.04	17%	50%	\$0.03	0.22	0.28	UNIDO Study on Industrial Energy Efficiency
Metal Mfg	Motors	Compressed Air - Outside Air Intake	employee	New	0.00	20	\$0.00	17%	50%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Metal Mfg	Motors	Compressed Air - Receiver Capacity Addition	employee	New	26.54	15	\$16.60	17%	50%	\$0.07	0.29	0.36	UNIDO Study on Industrial Energy Efficiency
Metal Mfg	Motors	Material Handling - Variable Speed Drive	employee	New	798.43	10	\$333.65	25%	45%	\$0.06	6.03	7.39	7th Power Plan
Metal Mfg	Motors	Motors - Green Rewind (<100 HP)	employee	New	11.68	10	\$5.91	10%	50%	\$0.07	0.88	1.08	7th Power Plan
Metal Mfg	Motors	Motors - Green Rewind (100 HP+)	employee	New	6.56	10	\$2.10	6%	25%	\$0.04	0.24	0.29	7th Power Plan
Metal Mfg	Motors	Switch from Belt Drive to Direct Drive	employee	New	99.10	12	\$25.94	16%	25%	\$0.03	1.93	2.36	2015-mdu-irp-report---volume-iii.pdf
Metal Mfg	Motors	Motors - Synchronous Belts	employee	New	26.28	10	\$7.80	16%	36%	\$0.04	0.65	0.83	7th Power Plan

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Metal Mfg	Miscellaneous	Agriculture - Engine Block Timer	employee	New	322.96	3	\$4.78	0%	0%	\$0.01	0.00	0.00	Vermont TRM
Metal Mfg	Motors	Agriculture - Live Stock Waterer	employee	New	431.97	10	\$267.98	0%	0%	\$0.08	0.00	0.00	Ontario Power TRM
Metal Mfg	Process	Dairy - Milk Precoolers	employee	New	109.98	15	\$63.79	0%	0%	\$0.06	0.00	0.00	Ontario Power TRM
Metal Mfg	Process	Clean Room: Change Filter Strategy	employee	New	174.88	15	\$1.55	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Metal Mfg	Process	Clean Room: Chiller Optimize	employee	New	34.03	15	\$3.78	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Metal Mfg	Process	Clean Room: Clean Room HVAC	employee	New	20.65	15	\$4.56	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Metal Mfg	Process	Elec Chip Fab: Solidstate Chiller	employee	New	19.80	15	\$14.32	0%	0%	-\$0.08	0.00	0.00	7th Power Plan
Metal Mfg	Process	Elec Chip Fab: Eliminate Exhaust	employee	New	20.94	15	\$5.56	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Metal Mfg	Process	Elec Chip Fab: Exhaust Injector	employee	New	41.88	15	\$26.83	0%	0%	-\$0.11	0.00	0.00	7th Power Plan
Metal Mfg	Process	Elec Chip Fab: Reduce Gas Pressure	employee	New	43.72	15	\$0.54	0%	0%	-\$0.02	0.00	0.00	7th Power Plan
Metal Mfg	Motors	Panel: Hydraulic Press	employee	New	1,199.26	10	\$333.45	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Metal Mfg	Motors	Wood: Replace Pneumatic Conveyor	employee	New	1,263.66	10	\$24.97	0%	0%	-\$0.07	0.00	0.00	7th Power Plan
Metal Mfg	Process	Metal: New Arc Furnace	employee	New	1,167.70	10	\$147.03	15%	75%	-\$2.50	23.43	27.72	7th Power Plan
Metal Mfg	Process	Paper: Premium Control Large Material	employee	New	145.38	10	\$91.04	0%	0%	\$0.08	0.00	0.00	7th Power Plan
Metal Mfg	Process	Paper: Efficient Pulp Screen	employee	New	116.49	10	\$29.99	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Metal Mfg	Process	Kraft: Effluent Treatment System	employee	New	121.52	10	\$12.29	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Metal Mfg	Motors	Kraft: Efficient Agitator	employee	New	2,159.16	10	\$248.83	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Metal Mfg	Process	Mech Pulp: Premium Process	employee	New	1.30	5	\$0.21	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Metal Mfg	Motors	Mech Pulp: Refiner Plate Improvement	employee	New	18.81	1	\$0.95	0%	0%	\$0.05	0.00	0.00	7th Power Plan
Metal Mfg	Cooling	Transformer - High Efficiency	employee	New	16.60	10	\$39.35	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Metal Mfg	Heating	Transformer - High Efficiency	employee	New	79.59	10	\$39.35	15%	15%	\$0.02	0.00	0.00	7th Power Plan

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Metal Mfg	Ventilation	Transformer - High Efficiency	employee	New	1.50	10	\$39.35	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Metal Mfg	Interior Lighting	Transformer - High Efficiency	employee	New	8.88	10	\$39.35	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Metal Mfg	Exterior Lighting	Transformer - High Efficiency	employee	New	1.90	10	\$39.35	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Metal Mfg	Motors	Transformer - High Efficiency	employee	New	97.08	10	\$39.35	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Metal Mfg	Process	Transformer - High Efficiency	employee	New	58.22	10	\$39.35	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Metal Mfg	Miscellaneous	Transformer - High Efficiency	employee	New	11.41	10	\$39.35	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Metal Mfg	Cooling	Strategic Energy Management	employee	New	47.28	3	\$241.70	0%	5%	\$0.10	0.00	0.00	AEG Research
Metal Mfg	Heating	Strategic Energy Management	employee	New	229.27	3	\$241.70	0%	5%	\$0.10	0.01	0.01	AEG Research
Metal Mfg	Ventilation	Strategic Energy Management	employee	New	4.31	3	\$241.70	0%	5%	\$0.10	0.00	0.00	AEG Research
Metal Mfg	Interior Lighting	Strategic Energy Management	employee	New	25.67	3	\$241.70	0%	5%	\$0.10	0.00	0.01	AEG Research
Metal Mfg	Exterior Lighting	Strategic Energy Management	employee	New	5.49	3	\$241.70	0%	5%	\$0.10	0.00	0.00	AEG Research
Metal Mfg	Motors	Strategic Energy Management	employee	New	280.45	3	\$241.70	0%	5%	\$0.10	0.04	0.06	AEG Research
Metal Mfg	Process	Strategic Energy Management	employee	New	168.20	3	\$241.70	0%	5%	\$0.10	0.03	0.04	AEG Research
Metal Mfg	Miscellaneous	Strategic Energy Management	employee	New	32.95	3	\$241.70	0%	5%	\$0.10	0.01	0.01	AEG Research
Metal Mfg	Interior Lighting	Commissioning	employee	New	29.53	3	\$331.20	5%	39%	\$0.18	0.03	0.06	AEG Research
Metal Mfg	Exterior Lighting	Commissioning	employee	New	6.33	3	\$331.20	5%	39%	\$0.18	0.01	0.01	AEG Research
Metal Mfg	Motors	Commissioning	employee	New	323.53	3	\$331.20	5%	39%	\$0.18	0.34	0.45	AEG Research
Metal Mfg	Process	Commissioning	employee	New	194.03	3	\$331.20	5%	39%	\$0.18	0.20	0.28	AEG Research
Metal Mfg	Miscellaneous	Commissioning	employee	New	38.01	3	\$331.20	5%	39%	\$0.18	0.05	0.04	AEG Research
Metal Mfg	Interior Lighting	Retrocommissioning	employee	New	29.62	3	\$210.25	0%	0%	\$0.12	0.00	0.00	AEG Research

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Metal Mfg	Exterior Lighting	Retrocommissioning	employee	New	6.34	3	\$210.25	0%	0%	\$0.12	0.00	0.00	AEG Research
Metal Mfg	Motors	Retrocommissioning	employee	New	323.60	3	\$210.25	0%	0%	\$0.12	0.00	0.00	AEG Research
Metal Mfg	Process	Retrocommissioning	employee	New	194.07	3	\$210.25	0%	0%	\$0.12	0.00	0.00	AEG Research
Metal Mfg	Miscellaneous	Retrocommissioning	employee	New	38.02	3	\$210.25	0%	0%	\$0.12	0.00	0.00	AEG Research
Metal Mfg	Motors	Municipal Sewage Treatment	employee	New	23.40	12	\$15.30	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Metal Mfg	Motors	Municipal Water Supply Treatment	employee	New	0.00	12	\$0.00	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Misc. Mfg	Cooling	Insulation - Ceiling	sqft	Existing	0.10	45	\$1.28	15%	25%	\$0.17	15.65	20.26	Building Energy Simulation Tool
Misc. Mfg	Heating	Insulation - Ceiling	sqft	Existing	0.45	45	\$1.28	15%	25%	\$0.17	63.01	78.28	Building Energy Simulation Tool
Misc. Mfg	Ventilation	Insulation - Ceiling	sqft	Existing	0.01	45	\$1.28	15%	25%	\$0.17	10.55	15.29	Building Energy Simulation Tool
Misc. Mfg	Cooling	Insulation - Ducting	sqft	Existing	0.04	20	\$0.84	15%	25%	\$1.23	5.65	7.57	Building Energy Simulation Tool
Misc. Mfg	Heating	Insulation - Ducting	sqft	Existing	0.02	20	\$0.84	15%	25%	\$1.23	2.60	3.28	Building Energy Simulation Tool
Misc. Mfg	Ventilation	Insulation - Ducting	sqft	Existing	0.00	20	\$0.84	15%	25%	\$1.23	0.44	0.64	Building Energy Simulation Tool
Misc. Mfg	Cooling	Insulation - Wall Cavity	sqft	Existing	0.00	45	\$0.15	45%	50%	\$0.02	0.13	0.16	Building Energy Simulation Tool
Misc. Mfg	Heating	Insulation - Wall Cavity	sqft	Existing	0.64	45	\$0.15	45%	50%	\$0.02	45.34	54.65	Building Energy Simulation Tool
Misc. Mfg	Ventilation	Insulation - Wall Cavity	sqft	Existing	0.02	45	\$0.15	45%	50%	\$0.02	7.07	10.21	Building Energy Simulation Tool
Misc. Mfg	Cooling	HVAC - Duct Repair and Sealing	sqft	Existing	0.01	18	\$0.00	15%	25%	\$0.00	2.07	2.63	Building Energy Simulation Tool
Misc. Mfg	Heating	HVAC - Duct Repair and Sealing	sqft	Existing	0.04	18	\$0.00	15%	25%	\$0.00	6.39	7.70	Building Energy Simulation Tool
Misc. Mfg	Ventilation	HVAC - Duct Repair and Sealing	sqft	Existing	0.00	18	\$0.00	15%	25%	\$0.00	1.00	1.44	Building Energy Simulation Tool
Misc. Mfg	Cooling	Chiller - Chilled Water Reset	sqft	Existing	0.04	10	\$0.01	15%	45%	\$0.03	5.02	7.11	AEG-BEST
Misc. Mfg	Cooling	Chiller - Chilled Water Variable-Flow System	sqft	Existing	0.21	15	\$0.50	15%	60%	\$0.24	39.89	58.22	AEG-BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Misc. Mfg	Cooling	Chiller - Variable Speed Fans	sqft	Existing	0.08	15	\$0.03	15%	75%	\$0.04	20.51	28.90	New Jersey TRM
Misc. Mfg	Cooling	HVAC - Economizer	sqft	Existing	0.10	10	\$0.25	18%	30%	\$0.30	19.82	29.04	AEG-BEST
Misc. Mfg	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.25	15%	35%	\$11.12	3.49	5.89	7th Power Plan
Misc. Mfg	Cooling	Destratification Fans (HVLS)	sqft	Existing	0.13	15	\$0.63	15%	50%	\$0.05	77.22	108.74	AEG Research
Misc. Mfg	Heating	Destratification Fans (HVLS)	sqft	Existing	1.16	15	\$0.63	15%	50%	\$0.05	622.85	814.05	AEG Research
Misc. Mfg	Cooling	RTU - Maintenance	sqft	Existing	0.07	3	\$0.07	15%	75%	\$0.32	41.53	63.36	AEG Research
Misc. Mfg	Cooling	Thermostat - WiFi/Interactive	sqft	Existing	0.22	5	\$0.66	5%	15%	\$0.11	33.40	43.93	7th Power Plan
Misc. Mfg	Heating	Thermostat - WiFi/Interactive	sqft	Existing	0.99	5	\$0.66	5%	15%	\$0.11	138.58	172.88	7th Power Plan
Misc. Mfg	Ventilation	Thermostat - WiFi/Interactive	sqft	Existing	0.03	5	\$0.66	5%	15%	\$0.11	23.20	33.77	7th Power Plan
Misc. Mfg	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.18	15	\$0.35	7%	33%	\$0.17	232.69	349.68	7th Power Plan
Misc. Mfg	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.25	15	\$0.58	7%	33%	\$0.20	308.61	479.02	7th Power Plan
Misc. Mfg	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	Existing	0.02	15	\$0.00	1%	2%	\$0.01	1.16	2.26	7th Power Plan
Misc. Mfg	Interior Lighting	Interior Lighting - Timeclocks and Timers	sqft	Existing	0.00	8	\$0.00	7%	7%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Misc. Mfg	Interior Lighting	Interior Lighting - Skylights	sqft	Existing	0.00	15	\$1.01	15%	23%	\$0.00	0.00	0.00	AEG Research
Misc. Mfg	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	sqft	Existing	0.03	16	\$1.81	5%	40%	\$5.03	34.30	72.90	7th Power Plan
Misc. Mfg	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	Existing	0.03	11	\$0.00	15%	50%	\$0.01	39.18	73.22	Illinois TRM
Misc. Mfg	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	sqft	Existing	0.04	8	\$0.03	15%	25%	\$0.10	45.81	91.01	7th Power Plan
Misc. Mfg	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	Existing	0.02	8	\$0.02	33%	60%	\$0.11	63.59	130.16	Pacific Gas and Electric Research
Misc. Mfg	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	Existing	0.03	7	\$1.19	15%	30%	\$5.85	39.65	86.12	AEG Research
Misc. Mfg	Process	Process - Conductivity Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Misc. Mfg	Process	Process - Timers and Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Misc. Mfg	Motors	Process - Timers and Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Misc. Mfg	Process	Refrigeration - Floating Head Pressure	employee	Existing	244.70	15	\$286.16	20%	50%	\$0.13	36.72	47.79	RTF Workbook
Misc. Mfg	Process	Refrigeration - System Optimization	employee	Existing	393.31	15	\$201.51	20%	50%	\$0.06	59.10	76.65	AEG Research
Misc. Mfg	Motors	Pumping System - Equipment Upgrade	employee	Existing	1,660.53	10	\$293.76	9%	38%	\$0.06	236.04	315.60	7th Power Plan
Misc. Mfg	Motors	Pumping System - System Optimization	employee	Existing	1,224.27	12	\$447.69	9%	38%	-\$0.03	168.46	220.37	UNIDO Study on Industrial Energy Efficiency
Misc. Mfg	Motors	Pumping System - Variable Speed Drive	employee	Existing	1,205.85	10	\$465.76	9%	38%	\$0.05	164.94	218.16	UNIDO Study on Industrial Energy Efficiency
Misc. Mfg	Motors	Fan System - Equipment Upgrade	employee	Existing	609.96	10	\$73.45	9%	38%	\$0.05	84.73	108.88	UNIDO Study on Industrial Energy Efficiency
Misc. Mfg	Motors	Fan System - Flow Optimization	employee	Existing	718.42	10	\$121.52	9%	38%	\$0.02	99.64	128.41	UNIDO Study on Industrial Energy Efficiency
Misc. Mfg	Motors	Fan System - Variable Speed Drive	employee	Existing	1,039.95	10	\$611.49	9%	38%	\$0.07	140.67	189.84	UNIDO Study on Industrial Energy Efficiency
Misc. Mfg	Motors	Compressed Air - Equipment Upgrade	employee	Existing	2,114.28	10	\$184.42	17%	50%	\$0.04	355.06	460.52	7th Power Plan
Misc. Mfg	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	Existing	0.00	15	\$0.00	16%	38%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Misc. Mfg	Motors	Compressed Air - Refrigerated Cycling Dryers	employee	Existing	0.00	10	\$0.00	16%	30%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Misc. Mfg	Motors	Compressed Air - System Controls	employee	Existing	454.33	10	\$131.86	9%	38%	\$0.00	63.98	87.40	UNIDO Study on Industrial Energy Efficiency
Misc. Mfg	Motors	Compressed Air - Leak Management Program	employee	Existing	1,189.77	10	\$132.55	18%	75%	\$0.05	340.94	447.35	7th Power Plan
Misc. Mfg	Motors	Compressed Air - Variable Speed Drive	employee	Existing	829.49	15	\$808.41	26%	45%	\$0.10	76.99	107.88	UNIDO Study on Industrial Energy Efficiency
Misc. Mfg	Motors	Compressed Air - Low Pressure-Drop Filters	employee	Existing	27.66	10	\$12.46	17%	50%	\$0.06	4.49	6.29	Illinois TRM
Misc. Mfg	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	Existing	171.78	10	\$40.42	17%	50%	\$0.03	28.33	38.38	UNIDO Study on Industrial Energy Efficiency
Misc. Mfg	Motors	Compressed Air - Outside Air Intake	employee	Existing	0.00	20	\$0.00	17%	50%	\$0.00	0.00	0.00	Michigan Energy Measures Database

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Misc. Mfg	Motors	Compressed Air - Receiver Capacity Addition	employee	Existing	169.31	15	\$111.16	17%	50%	\$0.07	27.76	38.11	UNIDO Study on Industrial Energy Efficiency
Misc. Mfg	Motors	Material Handling - Variable Speed Drive	employee	Existing	2,794.81	10	\$1,233.99	25%	45%	\$0.06	267.39	355.75	7th Power Plan
Misc. Mfg	Motors	Motors - Green Rewind (<100 HP)	employee	Existing	63.76	10	\$34.30	10%	50%	\$0.07	60.60	81.60	7th Power Plan
Misc. Mfg	Motors	Motors - Green Rewind (100 HP+)	employee	Existing	36.24	10	\$12.17	6%	25%	\$0.04	16.53	21.85	7th Power Plan
Misc. Mfg	Motors	Switch from Belt Drive to Direct Drive	employee	Existing	555.05	12	\$150.55	16%	25%	\$0.03	127.65	166.13	2015-mdu-irp-report---volume-iii.pdf
Misc. Mfg	Motors	Motors - Synchronous Belts	employee	Existing	145.61	10	\$45.29	16%	36%	\$0.04	71.70	98.17	7th Power Plan
Misc. Mfg	Miscellaneous	Agriculture - Engine Block Timer	employee	Existing	4,591.84	3	\$67.90	0%	0%	\$0.01	0.00	0.00	Vermont TRM
Misc. Mfg	Motors	Agriculture - Live Stock Waterer	employee	Existing	3,898.05	10	\$2,587.05	0%	0%	\$0.08	0.00	0.00	Ontario Power TRM
Misc. Mfg	Process	Dairy - Milk Precoolers	employee	Existing	1,631.34	15	\$910.58	0%	0%	\$0.06	0.00	0.00	Ontario Power TRM
Misc. Mfg	Process	Clean Room: Change Filter Strategy	employee	Existing	504.68	15	\$4.46	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Misc. Mfg	Process	Clean Room: Chiller Optimize	employee	Existing	485.83	15	\$53.92	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Misc. Mfg	Process	Clean Room: Clean Room HVAC	employee	Existing	294.98	15	\$65.09	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Misc. Mfg	Process	Elec Chip Fab: Solidstate Chiller	employee	Existing	293.64	15	\$204.44	0%	0%	-\$0.08	0.00	0.00	7th Power Plan
Misc. Mfg	Process	Elec Chip Fab: Eliminate Exhaust	employee	Existing	63.08	15	\$16.05	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Misc. Mfg	Process	Elec Chip Fab: Exhaust Injector	employee	Existing	125.60	15	\$77.43	0%	0%	-\$0.11	0.00	0.00	7th Power Plan
Misc. Mfg	Process	Elec Chip Fab: Reduce Gas Pressure	employee	Existing	126.17	15	\$1.55	0%	0%	-\$0.02	0.00	0.00	7th Power Plan
Misc. Mfg	Motors	Panel: Hydraulic Press	employee	Existing	4,229.85	10	\$1,233.25	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Misc. Mfg	Motors	Wood: Replace Pneumatic Conveyor	employee	Existing	4,673.66	10	\$92.36	0%	0%	-\$0.07	0.00	0.00	7th Power Plan
Misc. Mfg	Process	Metal: New Arc Furnace	employee	Existing	5,617.54	10	\$706.86	0%	0%	-\$2.50	0.00	0.00	7th Power Plan
Misc. Mfg	Process	Paper: Premium Control Large Material	employee	Existing	805.65	10	\$486.70	0%	0%	\$0.08	0.00	0.00	7th Power Plan
Misc. Mfg	Process	Paper: Efficient Pulp Screen	employee	Existing	650.08	10	\$160.32	0%	0%	\$0.03	0.00	0.00	7th Power Plan

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Misc. Mfg	Process	Kraft: Effluent Treatment System	employee	Existing	650.08	10	\$65.73	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Misc. Mfg	Motors	Kraft: Efficient Agitator	employee	Existing	7,817.37	10	\$920.29	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Misc. Mfg	Process	Mech Pulp: Premium Process	employee	Existing	7.24	5	\$1.12	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Misc. Mfg	Motors	Mech Pulp: Refiner Plate Improvement	employee	Existing	65.04	1	\$3.51	0%	0%	\$0.05	0.00	0.00	7th Power Plan
Misc. Mfg	Cooling	Transformer - High Efficiency	employee	Existing	372.42	10	\$482.45	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Misc. Mfg	Heating	Transformer - High Efficiency	employee	Existing	1,665.17	10	\$482.45	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Misc. Mfg	Ventilation	Transformer - High Efficiency	employee	Existing	47.40	10	\$482.45	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Misc. Mfg	Interior Lighting	Transformer - High Efficiency	employee	Existing	163.24	10	\$482.45	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Misc. Mfg	Exterior Lighting	Transformer - High Efficiency	employee	Existing	34.72	10	\$482.45	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Misc. Mfg	Motors	Transformer - High Efficiency	employee	Existing	526.75	10	\$482.45	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Misc. Mfg	Process	Transformer - High Efficiency	employee	Existing	322.65	10	\$482.45	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Misc. Mfg	Miscellaneous	Transformer - High Efficiency	employee	Existing	170.93	10	\$482.45	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Misc. Mfg	Cooling	Strategic Energy Management	employee	Existing	1,022.97	3	\$2,963.04	0%	5%	\$0.10	4.09	5.48	AEG Research
Misc. Mfg	Heating	Strategic Energy Management	employee	Existing	4,766.71	3	\$2,963.04	0%	5%	\$0.10	17.95	22.61	AEG Research
Misc. Mfg	Ventilation	Strategic Energy Management	employee	Existing	135.79	3	\$2,963.04	0%	5%	\$0.10	3.00	4.42	AEG Research
Misc. Mfg	Interior Lighting	Strategic Energy Management	employee	Existing	464.90	3	\$2,963.04	0%	5%	\$0.10	8.25	14.57	AEG Research
Misc. Mfg	Exterior Lighting	Strategic Energy Management	employee	Existing	99.51	3	\$2,963.04	0%	5%	\$0.10	1.81	3.19	AEG Research
Misc. Mfg	Motors	Strategic Energy Management	employee	Existing	1,507.85	3	\$2,963.04	0%	5%	\$0.10	33.52	43.13	AEG Research
Misc. Mfg	Process	Strategic Energy Management	employee	Existing	923.35	3	\$2,963.04	0%	5%	\$0.10	21.30	25.95	AEG Research

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Misc. Mfg	Miscellaneous	Strategic Energy Management	employee	Existing	488.68	3	\$2,963.04	0%	5%	\$0.10	14.55	13.49	AEG Research
Misc. Mfg	Interior Lighting	Commissioning	employee	Existing	535.87	3	\$2,200.46	0%	0%	\$0.17	0.00	0.00	AEG Research
Misc. Mfg	Exterior Lighting	Commissioning	employee	Existing	114.71	3	\$2,200.46	0%	0%	\$0.17	0.00	0.00	AEG Research
Misc. Mfg	Motors	Commissioning	employee	Existing	1,737.81	3	\$2,200.46	0%	0%	\$0.17	0.00	0.00	AEG Research
Misc. Mfg	Process	Commissioning	employee	Existing	1,064.13	3	\$2,200.46	0%	0%	\$0.17	0.00	0.00	AEG Research
Misc. Mfg	Miscellaneous	Commissioning	employee	Existing	563.12	3	\$2,200.46	0%	0%	\$0.17	0.00	0.00	AEG Research
Misc. Mfg	Interior Lighting	Retrocommissioning	employee	Existing	544.14	3	\$1,396.89	5%	39%	\$0.11	66.44	115.71	AEG Research
Misc. Mfg	Exterior Lighting	Retrocommissioning	employee	Existing	115.73	3	\$1,396.89	5%	39%	\$0.11	14.48	25.18	AEG Research
Misc. Mfg	Motors	Retrocommissioning	employee	Existing	1,755.83	3	\$1,396.89	5%	39%	\$0.11	267.63	340.93	AEG Research
Misc. Mfg	Process	Retrocommissioning	employee	Existing	1,075.50	3	\$1,396.89	5%	39%	\$0.11	170.02	205.13	AEG Research
Misc. Mfg	Miscellaneous	Retrocommissioning	employee	Existing	569.76	3	\$1,396.89	5%	39%	\$0.11	116.19	106.76	AEG Research
Misc. Mfg	Motors	Municipal Sewage Treatment	employee	Existing	212.47	12	\$147.68	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Misc. Mfg	Motors	Municipal Water Supply Treatment	employee	Existing	0.00	12	\$0.00	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Misc. Mfg	Cooling	Insulation - Ceiling	sqft	New	0.09	45	\$1.28	15%	25%	\$0.18	2.39	2.71	Building Energy Simulation Tool
Misc. Mfg	Heating	Insulation - Ceiling	sqft	New	0.44	45	\$1.28	15%	25%	\$0.18	9.97	11.13	Building Energy Simulation Tool
Misc. Mfg	Ventilation	Insulation - Ceiling	sqft	New	0.01	45	\$1.28	15%	25%	\$0.18	1.38	1.71	Building Energy Simulation Tool
Misc. Mfg	Cooling	Insulation - Ducting	sqft	New	0.04	20	\$0.84	15%	25%	\$1.32	0.92	1.04	Building Energy Simulation Tool
Misc. Mfg	Heating	Insulation - Ducting	sqft	New	0.02	20	\$0.84	15%	25%	\$1.32	0.42	0.47	Building Energy Simulation Tool
Misc. Mfg	Ventilation	Insulation - Ducting	sqft	New	0.00	20	\$0.84	15%	25%	\$1.32	0.06	0.07	Building Energy Simulation Tool
Misc. Mfg	Cooling	Insulation - Wall Cavity	sqft	New	0.00	45	\$0.15	45%	50%	\$0.02	0.02	0.02	Building Energy Simulation Tool
Misc. Mfg	Heating	Insulation - Wall Cavity	sqft	New	0.59	45	\$0.15	45%	50%	\$0.02	6.75	7.56	Building Energy Simulation Tool
Misc. Mfg	Ventilation	Insulation - Wall Cavity	sqft	New	0.01	45	\$0.15	45%	50%	\$0.02	0.92	1.14	Building Energy Simulation Tool

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Misc. Mfg	Cooling	HVAC - Duct Repair and Sealing	sqft	New	0.01	18	\$0.00	15%	25%	\$0.00	0.30	0.34	Building Energy Simulation Tool
Misc. Mfg	Heating	HVAC - Duct Repair and Sealing	sqft	New	0.04	18	\$0.00	15%	25%	\$0.00	0.93	1.04	Building Energy Simulation Tool
Misc. Mfg	Ventilation	HVAC - Duct Repair and Sealing	sqft	New	0.00	18	\$0.00	15%	25%	\$0.00	0.13	0.16	Building Energy Simulation Tool
Misc. Mfg	Cooling	Chiller - Chilled Water Reset	sqft	New	0.03	10	\$0.01	15%	45%	\$0.04	0.23	0.31	AEG-BEST
Misc. Mfg	Cooling	Chiller - Chilled Water Variable-Flow System	sqft	New	0.17	15	\$0.50	15%	60%	\$0.29	2.54	3.26	AEG-BEST
Misc. Mfg	Cooling	Chiller - Variable Speed Fans	sqft	New	0.06	15	\$0.03	15%	75%	\$0.05	1.25	1.60	New Jersey TRM
Misc. Mfg	Cooling	HVAC - Economizer	sqft	New	0.09	10	\$0.25	18%	30%	\$0.33	1.04	1.37	AEG-BEST
Misc. Mfg	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.25	15%	35%	\$12.99	0.21	0.32	7th Power Plan
Misc. Mfg	Cooling	Destratification Fans (HVLS)	sqft	New	0.12	15	\$0.63	15%	50%	\$0.06	5.26	6.74	AEG Research
Misc. Mfg	Heating	Destratification Fans (HVLS)	sqft	New	1.09	15	\$0.63	15%	50%	\$0.06	42.74	53.15	AEG Research
Misc. Mfg	Cooling	RTU - Maintenance	sqft	New	0.06	3	\$0.07	15%	75%	\$0.33	0.47	0.70	AEG Research
Misc. Mfg	Cooling	Thermostat - WiFi/Interactive	sqft	New	0.21	5	\$0.66	5%	15%	\$0.12	0.69	0.92	7th Power Plan
Misc. Mfg	Heating	Thermostat - WiFi/Interactive	sqft	New	0.96	5	\$0.66	5%	15%	\$0.12	2.91	3.73	7th Power Plan
Misc. Mfg	Ventilation	Thermostat - WiFi/Interactive	sqft	New	0.02	5	\$0.66	5%	15%	\$0.12	0.40	0.63	7th Power Plan
Misc. Mfg	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.15	15	\$0.35	22%	41%	\$0.17	48.09	65.77	7th Power Plan
Misc. Mfg	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.20	15	\$0.58	22%	41%	\$0.20	65.15	89.71	7th Power Plan
Misc. Mfg	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	New	0.02	15	\$0.00	1%	2%	\$0.01	0.06	0.10	7th Power Plan
Misc. Mfg	Interior Lighting	Interior Lighting - Timeclocks and Timers	sqft	New	0.00	8	\$0.00	7%	7%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Misc. Mfg	Interior Lighting	Interior Lighting - Skylights	sqft	New	0.00	15	\$1.01	18%	24%	\$0.00	0.00	0.00	AEG Research
Misc. Mfg	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	sqft	New	0.02	16	\$1.81	5%	40%	\$5.13	2.55	4.14	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Misc. Mfg	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	New	0.02	11	\$0.00	15%	50%	\$0.01	2.13	3.57	Illinois TRM
Misc. Mfg	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	sqft	New	0.03	8	\$0.03	15%	25%	\$0.11	1.82	3.29	7th Power Plan
Misc. Mfg	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	New	0.02	8	\$0.02	44%	60%	\$0.11	1.56	2.80	Pacific Gas and Electric Research
Misc. Mfg	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	New	0.02	7	\$1.19	15%	30%	\$6.12	1.57	2.87	AEG Research
Misc. Mfg	Process	Process - Conductivity Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Misc. Mfg	Process	Process - Timers and Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Misc. Mfg	Motors	Process - Timers and Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Misc. Mfg	Process	Refrigeration - Floating Head Pressure	employee	New	245.40	15	\$202.23	20%	50%	\$0.09	2.68	3.32	RTF Workbook
Misc. Mfg	Process	Refrigeration - System Optimization	employee	New	393.31	15	\$70.72	20%	50%	\$0.02	4.29	5.33	AEG Research
Misc. Mfg	Motors	Pumping System - Equipment Upgrade	employee	New	1,701.02	10	\$293.76	9%	38%	\$0.06	13.51	17.15	7th Power Plan
Misc. Mfg	Motors	Pumping System - System Optimization	employee	New	1,267.57	12	\$447.69	9%	38%	-\$0.03	16.63	20.25	UNIDO Study on Industrial Energy Efficiency
Misc. Mfg	Motors	Pumping System - Variable Speed Drive	employee	New	1,259.89	10	\$465.76	9%	38%	\$0.05	15.21	18.60	UNIDO Study on Industrial Energy Efficiency
Misc. Mfg	Motors	Fan System - Equipment Upgrade	employee	New	622.23	10	\$73.45	9%	38%	\$0.05	7.48	9.19	UNIDO Study on Industrial Energy Efficiency
Misc. Mfg	Motors	Fan System - Flow Optimization	employee	New	734.28	10	\$121.52	9%	38%	\$0.02	8.83	10.84	UNIDO Study on Industrial Energy Efficiency
Misc. Mfg	Motors	Fan System - Variable Speed Drive	employee	New	1,101.94	10	\$611.49	9%	38%	\$0.07	13.34	16.27	UNIDO Study on Industrial Energy Efficiency
Misc. Mfg	Motors	Compressed Air - Equipment Upgrade	employee	New	2,114.28	10	\$184.42	17%	50%	\$0.04	19.49	24.84	7th Power Plan
Misc. Mfg	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	New	0.00	15	\$0.00	16%	38%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Misc. Mfg	Motors	Compressed Air - Refrigerated Cycling Dryers	employee	New	0.00	10	\$0.00	16%	30%	\$0.00	0.00	0.00	Michigan Energy Measures Database

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Misc. Mfg	Motors	Compressed Air - System Controls	employee	New	472.20	10	\$131.86	9%	38%	\$0.00	3.76	4.77	UNIDO Study on Industrial Energy Efficiency
Misc. Mfg	Motors	Compressed Air - Leak Management Program	employee	New	1,201.83	10	\$132.55	18%	75%	\$0.05	19.03	24.21	7th Power Plan
Misc. Mfg	Motors	Compressed Air - Variable Speed Drive	employee	New	875.66	15	\$808.41	26%	45%	\$0.10	6.17	7.60	UNIDO Study on Industrial Energy Efficiency
Misc. Mfg	Motors	Compressed Air - Low Pressure-Drop Filters	employee	New	29.19	10	\$12.46	17%	50%	\$0.06	0.27	0.34	Illinois TRM
Misc. Mfg	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	New	177.70	10	\$40.42	17%	50%	\$0.03	1.65	2.09	UNIDO Study on Industrial Energy Efficiency
Misc. Mfg	Motors	Compressed Air - Outside Air Intake	employee	New	0.00	20	\$0.00	17%	50%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Misc. Mfg	Motors	Compressed Air - Receiver Capacity Addition	employee	New	176.69	15	\$111.16	17%	50%	\$0.07	2.18	2.68	UNIDO Study on Industrial Energy Efficiency
Misc. Mfg	Motors	Material Handling - Variable Speed Drive	employee	New	2,931.37	10	\$1,233.99	25%	45%	\$0.06	24.85	30.37	7th Power Plan
Misc. Mfg	Motors	Motors - Green Rewind (<100 HP)	employee	New	67.46	10	\$34.30	10%	50%	\$0.07	5.73	6.99	7th Power Plan
Misc. Mfg	Motors	Motors - Green Rewind (100 HP+)	employee	New	37.85	10	\$12.17	6%	25%	\$0.04	1.52	1.86	7th Power Plan
Misc. Mfg	Motors	Switch from Belt Drive to Direct Drive	employee	New	572.55	12	\$150.55	16%	25%	\$0.03	12.51	15.25	2015-mdu-irp-report---volume-iii.pdf
Misc. Mfg	Motors	Motors - Synchronous Belts	employee	New	151.63	10	\$45.29	16%	36%	\$0.04	4.23	5.36	7th Power Plan
Misc. Mfg	Miscellaneous	Agriculture - Engine Block Timer	employee	New	4,591.84	3	\$67.90	0%	0%	\$0.01	0.00	0.00	Vermont TRM
Misc. Mfg	Motors	Agriculture - Live Stock Waterer	employee	New	4,144.33	10	\$2,587.05	0%	0%	\$0.08	0.00	0.00	Ontario Power TRM
Misc. Mfg	Process	Dairy - Milk Precoolers	employee	New	1,636.02	15	\$910.58	0%	0%	\$0.06	0.00	0.00	Ontario Power TRM
Misc. Mfg	Process	Clean Room: Change Filter Strategy	employee	New	504.68	15	\$4.46	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Misc. Mfg	Process	Clean Room: Chiller Optimize	employee	New	485.83	15	\$53.92	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Misc. Mfg	Process	Clean Room: Clean Room HVAC	employee	New	294.48	15	\$65.09	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Misc. Mfg	Process	Elec Chip Fab: Solidstate Chiller	employee	New	294.48	15	\$204.44	0%	0%	-\$0.08	0.00	0.00	7th Power Plan
Misc. Mfg	Process	Elec Chip Fab: Eliminate Exhaust	employee	New	62.98	15	\$16.05	0%	0%	\$0.03	0.00	0.00	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Misc. Mfg	Process	Elec Chip Fab: Exhaust Injector	employee	New	125.96	15	\$77.43	0%	0%	-\$0.11	0.00	0.00	7th Power Plan
Misc. Mfg	Process	Elec Chip Fab: Reduce Gas Pressure	employee	New	126.17	15	\$1.55	0%	0%	-\$0.02	0.00	0.00	7th Power Plan
Misc. Mfg	Motors	Panel: Hydraulic Press	employee	New	4,409.15	10	\$1,233.25	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Misc. Mfg	Motors	Wood: Replace Pneumatic Conveyor	employee	New	4,673.66	10	\$92.36	0%	0%	-\$0.07	0.00	0.00	7th Power Plan
Misc. Mfg	Process	Metal: New Arc Furnace	employee	New	5,608.09	10	\$706.86	0%	0%	-\$2.50	0.00	0.00	7th Power Plan
Misc. Mfg	Process	Paper: Premium Control Large Material	employee	New	809.40	10	\$486.70	0%	0%	\$0.08	0.00	0.00	7th Power Plan
Misc. Mfg	Process	Paper: Efficient Pulp Screen	employee	New	648.99	10	\$160.32	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Misc. Mfg	Process	Kraft: Effluent Treatment System	employee	New	648.99	10	\$65.73	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Misc. Mfg	Motors	Kraft: Efficient Agitator	employee	New	7,962.97	10	\$920.29	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Misc. Mfg	Process	Mech Pulp: Premium Process	employee	New	7.26	5	\$1.12	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Misc. Mfg	Motors	Mech Pulp: Refiner Plate Improvement	employee	New	69.15	1	\$3.51	0%	0%	\$0.05	0.00	0.00	7th Power Plan
Misc. Mfg	Cooling	Transformer - High Efficiency	employee	New	337.16	10	\$458.46	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Misc. Mfg	Heating	Transformer - High Efficiency	employee	New	1,616.82	10	\$458.46	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Misc. Mfg	Ventilation	Transformer - High Efficiency	employee	New	30.34	10	\$458.46	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Misc. Mfg	Interior Lighting	Transformer - High Efficiency	employee	New	131.20	10	\$458.46	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Misc. Mfg	Exterior Lighting	Transformer - High Efficiency	employee	New	28.07	10	\$458.46	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Misc. Mfg	Motors	Transformer - High Efficiency	employee	New	560.03	10	\$458.46	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Misc. Mfg	Process	Transformer - High Efficiency	employee	New	324.15	10	\$458.46	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Misc. Mfg	Miscellaneous	Transformer - High Efficiency	employee	New	162.18	10	\$458.46	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Misc. Mfg	Cooling	Strategic Energy Management	employee	New	960.20	3	\$2,815.70	0%	5%	\$0.10	0.03	0.04	AEG Research
Misc. Mfg	Heating	Strategic Energy Management	employee	New	4,657.35	3	\$2,815.70	0%	5%	\$0.10	0.13	0.18	AEG Research

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Misc. Mfg	Ventilation	Strategic Energy Management	employee	New	87.42	3	\$2,815.70	0%	5%	\$0.10	0.02	0.03	AEG Research
Misc. Mfg	Interior Lighting	Strategic Energy Management	employee	New	379.01	3	\$2,815.70	0%	5%	\$0.10	0.06	0.12	AEG Research
Misc. Mfg	Exterior Lighting	Strategic Energy Management	employee	New	81.08	3	\$2,815.70	0%	5%	\$0.10	0.01	0.03	AEG Research
Misc. Mfg	Motors	Strategic Energy Management	employee	New	1,617.86	3	\$2,815.70	0%	5%	\$0.10	0.28	0.38	AEG Research
Misc. Mfg	Process	Strategic Energy Management	employee	New	936.44	3	\$2,815.70	0%	5%	\$0.10	0.16	0.21	AEG Research
Misc. Mfg	Miscellaneous	Strategic Energy Management	employee	New	468.53	3	\$2,815.70	0%	5%	\$0.10	0.10	0.09	AEG Research
Misc. Mfg	Interior Lighting	Commissioning	employee	New	436.13	3	\$2,174.51	5%	39%	\$0.17	0.47	0.96	AEG Research
Misc. Mfg	Exterior Lighting	Commissioning	employee	New	93.53	3	\$2,174.51	5%	39%	\$0.17	0.11	0.21	AEG Research
Misc. Mfg	Motors	Commissioning	employee	New	1,866.36	3	\$2,174.51	5%	39%	\$0.17	2.20	2.95	AEG Research
Misc. Mfg	Process	Commissioning	employee	New	1,080.27	3	\$2,174.51	5%	39%	\$0.17	1.26	1.68	AEG Research
Misc. Mfg	Miscellaneous	Commissioning	employee	New	540.50	3	\$2,174.51	5%	39%	\$0.17	0.79	0.71	AEG Research
Misc. Mfg	Interior Lighting	Retrocommissioning	employee	New	437.32	3	\$1,380.42	0%	0%	\$0.11	0.00	0.00	AEG Research
Misc. Mfg	Exterior Lighting	Retrocommissioning	employee	New	93.55	3	\$1,380.42	0%	0%	\$0.11	0.00	0.00	AEG Research
Misc. Mfg	Motors	Retrocommissioning	employee	New	1,866.77	3	\$1,380.42	0%	0%	\$0.11	0.00	0.00	AEG Research
Misc. Mfg	Process	Retrocommissioning	employee	New	1,080.51	3	\$1,380.42	0%	0%	\$0.11	0.00	0.00	AEG Research
Misc. Mfg	Miscellaneous	Retrocommissioning	employee	New	540.61	3	\$1,380.42	0%	0%	\$0.11	0.00	0.00	AEG Research
Misc. Mfg	Motors	Municipal Sewage Treatment	employee	New	224.81	12	\$147.68	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Misc. Mfg	Motors	Municipal Water Supply Treatment	employee	New	0.00	12	\$0.00	0%	0%	\$0.00	0.00	0.00	7th Power Plan

Wyoming Industrial Measures Assumptions

Table H-15 Comparison of 7th Plan and RTF Industrial Measures in Wyoming

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Agriculture	Cooling	Air-Cooled Chiller	1 kBTU/hr	Existing	21.38	20	\$26.36	3%	at stock turnover	\$0.12	1.24	1.24	Annual Energy Outlook, 2015
Agriculture	Cooling	Water-Cooled Chiller	1 kBTU/hr	Existing	31.90	25	\$12.65	3%	at stock turnover	\$0.04	1.85	1.85	Annual Energy Outlook, 2015
Agriculture	Cooling	RTU	1 kBTU/hr	Existing	3.22	15	\$6.75	11%	at stock turnover	\$0.24	1.00	1.00	Annual Energy Outlook, 2015
Agriculture	Cooling	Air-Source Heat Pump	1 kBTU/hr	Existing	6.21	15	\$21.65	3%	at stock turnover	\$0.14	0.38	0.38	Annual Energy Outlook, 2015
Agriculture	Heating	Air-Source Heat Pump	1 kBTU/hr	Existing	11.39	15	\$21.65	3%	at stock turnover	\$0.14	0.69	0.69	Annual Energy Outlook, 2015
Agriculture	Cooling	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Agriculture	Heating	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Agriculture	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	3%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Agriculture	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	15%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Agriculture	Ventilation	Ventilation	1000 CFM	Existing	2,269.39	20	\$1,219.71	100%	at stock turnover	\$0.05	6.75	6.75	AEG-BEST
Agriculture	Interior Lighting	Screw-in	lamps	Existing	37.14	8	\$4.05	100%	at stock turnover	\$0.00	4.64	6.87	7th Power Plan
Agriculture	Interior Lighting	High-Bay Fixtures	lamps	Existing	378.07	15	\$127.03	100%	at stock turnover	\$0.04	104.45	98.92	Annual Energy Outlook, 2015
Agriculture	Interior Lighting	Linear Lighting	lamps	Existing	55.29	17	\$54.19	100%	at stock turnover	\$0.07	19.63	19.01	7th Power Plan
Agriculture	Exterior Lighting	Screw-in	lamps	Existing	37.14	8	\$4.05	100%	at stock turnover	\$0.00	1.42	2.10	7th Power Plan
Agriculture	Exterior Lighting	Area Lighting	lamps	Existing	593.44	15	\$45.69	100%	at stock turnover	-\$0.04	27.08	26.12	Annual Energy Outlook, 2015
Agriculture	Exterior Lighting	Linear Lighting	lamps	Existing	55.29	17	\$54.19	100%	at stock turnover	\$0.07	5.30	5.14	7th Power Plan
Agriculture	Motors	Pumps	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Agriculture	Motors	Fans & Blowers	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Agriculture	Motors	Compressed Air	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Agriculture	Motors	Material Handling	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Agriculture	Motors	Other Motors	1 unit	Existing	0.00	10	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	N/A
Agriculture	Process	Process Heating	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Agriculture	Process	Process Cooling	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Agriculture	Process	Process Refrigeration	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Agriculture	Process	Process Electrochemical	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Agriculture	Process	Process Other	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Agriculture	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Agriculture	Cooling	Air-Cooled Chiller	1 kBTU/hr	New	18.40	20	\$26.36	3%	at stock turnover	\$0.14	1.35	1.35	Annual Energy Outlook, 2015
Agriculture	Cooling	Water-Cooled Chiller	1 kBTU/hr	New	27.76	25	\$12.65	3%	at stock turnover	\$0.04	1.81	1.81	Annual Energy Outlook, 2015
Agriculture	Cooling	RTU	1 kBTU/hr	New	3.13	15	\$6.75	11%	at stock turnover	\$0.24	0.96	0.96	Annual Energy Outlook, 2015
Agriculture	Cooling	Air-Source Heat Pump	1 kBTU/hr	New	6.04	15	\$21.65	3%	at stock turnover	\$0.14	0.38	0.38	Annual Energy Outlook, 2015
Agriculture	Heating	Air-Source Heat Pump	1 kBTU/hr	New	10.92	15	\$21.65	3%	at stock turnover	\$0.14	0.69	0.69	Annual Energy Outlook, 2015
Agriculture	Cooling	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Agriculture	Heating	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Agriculture	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	3%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Agriculture	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	15%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Agriculture	Ventilation	Ventilation	1000 CFM	New	1,964.09	20	\$1,219.71	100%	at stock turnover	\$0.06	6.26	6.26	AEG-BEST
Agriculture	Interior Lighting	Screw-in	lamps	New	37.18	8	\$4.05	100%	at stock turnover	\$0.00	4.11	4.28	7th Power Plan
Agriculture	Interior Lighting	High-Bay Fixtures	lamps	New	378.61	15	\$127.03	100%	at stock turnover	\$0.04	104.25	100.93	Annual Energy Outlook, 2015
Agriculture	Interior Lighting	Linear Lighting	lamps	New	55.29	17	\$54.19	100%	at stock turnover	\$0.07	16.36	16.01	7th Power Plan
Agriculture	Exterior Lighting	Screw-in	lamps	New	37.18	8	\$4.05	100%	at stock turnover	\$0.00	1.26	1.31	7th Power Plan
Agriculture	Exterior Lighting	Area Lighting	lamps	New	593.44	15	\$45.69	100%	at stock turnover	-\$0.04	26.85	26.28	Annual Energy Outlook, 2015
Agriculture	Exterior Lighting	Linear Lighting	lamps	New	55.29	17	\$54.19	100%	at stock turnover	\$0.07	4.42	4.33	7th Power Plan
Agriculture	Motors	Pumps	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Agriculture	Motors	Fans & Blowers	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Agriculture	Motors	Compressed Air	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Agriculture	Motors	Material Handling	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Agriculture	Motors	Other Motors	1 unit	New	0.00	10	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	N/A
Agriculture	Process	Process Heating	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Agriculture	Process	Process Cooling	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Agriculture	Process	Process Refrigeration	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Agriculture	Process	Process Electrochemical	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Agriculture	Process	Process Other	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Agriculture	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Mining and Extraction	Cooling	Air-Cooled Chiller	1 kBTU/hr	Existing	21.38	20	\$26.36	3%	at stock turnover	\$0.12	264.84	264.84	Annual Energy Outlook, 2015

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Mining and Extraction	Cooling	Water-Cooled Chiller	1 kBTU/hr	Existing	31.90	25	\$12.65	3%	at stock turnover	\$0.04	395.14	395.14	Annual Energy Outlook, 2015
Mining and Extraction	Cooling	RTU	1 kBTU/hr	Existing	3.22	15	\$6.75	11%	at stock turnover	\$0.24	214.31	214.31	Annual Energy Outlook, 2015
Mining and Extraction	Cooling	Air-Source Heat Pump	1 kBTU/hr	Existing	6.21	15	\$21.65	3%	at stock turnover	\$0.14	80.29	80.29	Annual Energy Outlook, 2015
Mining and Extraction	Heating	Air-Source Heat Pump	1 kBTU/hr	Existing	11.39	15	\$21.65	3%	at stock turnover	\$0.14	147.25	147.25	Annual Energy Outlook, 2015
Mining and Extraction	Cooling	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Mining and Extraction	Heating	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Mining and Extraction	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	3%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Mining and Extraction	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	15%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Mining and Extraction	Ventilation	Ventilation	1000 CFM	Existing	2,269.39	20	\$1,219.71	100%	at stock turnover	\$0.05	1,441.76	1,441.76	AEG-BEST
Mining and Extraction	Interior Lighting	Screw-in	lamps	Existing	36.23	8	\$4.05	100%	at stock turnover	\$0.00	1,510.46	2,237.69	7th Power Plan
Mining and Extraction	Interior Lighting	High-Bay Fixtures	lamps	Existing	191.34	15	\$127.03	100%	at stock turnover	\$0.07	33,998.11	32,197.60	Annual Energy Outlook, 2015
Mining and Extraction	Interior Lighting	Linear Lighting	lamps	Existing	28.60	17	\$54.19	100%	at stock turnover	\$0.14	6,387.68	6,185.82	7th Power Plan
Mining and Extraction	Exterior Lighting	Screw-in	lamps	Existing	206.91	8	\$4.05	100%	at stock turnover	\$0.00	462.25	684.81	7th Power Plan
Mining and Extraction	Exterior Lighting	Area Lighting	lamps	Existing	2,507.81	15	\$45.69	100%	at stock turnover	-\$0.01	8,812.57	8,501.54	Annual Energy Outlook, 2015
Mining and Extraction	Exterior Lighting	Linear Lighting	lamps	Existing	196.34	17	\$54.19	100%	at stock turnover	\$0.02	1,726.28	1,671.73	7th Power Plan
Mining and Extraction	Motors	Pumps	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Mining and Extraction	Motors	Fans & Blowers	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Mining and Extraction	Motors	Compressed Air	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Mining and Extraction	Motors	Material Handling	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Mining and Extraction	Motors	Other Motors	1 unit	Existing	0.00	10	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	N/A
Mining and Extraction	Process	Process Heating	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Mining and Extraction	Process	Process Cooling	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Mining and Extraction	Process	Process Refrigeration	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Mining and Extraction	Process	Process Electrochemical	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Mining and Extraction	Process	Process Other	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Mining and Extraction	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Mining and Extraction	Cooling	Air-Cooled Chiller	1 kBTU/hr	New	18.40	20	\$26.36	3%	at stock turnover	\$0.14	289.33	289.33	Annual Energy Outlook, 2015
Mining and Extraction	Cooling	Water-Cooled Chiller	1 kBTU/hr	New	27.76	25	\$12.65	3%	at stock turnover	\$0.04	386.75	386.75	Annual Energy Outlook, 2015
Mining and Extraction	Cooling	RTU	1 kBTU/hr	New	3.13	15	\$6.75	11%	at stock turnover	\$0.24	204.51	204.51	Annual Energy Outlook, 2015
Mining and Extraction	Cooling	Air-Source Heat Pump	1 kBTU/hr	New	6.04	15	\$21.65	3%	at stock turnover	\$0.14	81.64	81.64	Annual Energy Outlook, 2015
Mining and Extraction	Heating	Air-Source Heat Pump	1 kBTU/hr	New	10.92	15	\$21.65	3%	at stock turnover	\$0.14	147.72	147.72	Annual Energy Outlook, 2015
Mining and Extraction	Cooling	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Mining and Extraction	Heating	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Mining and Extraction	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	3%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Mining and Extraction	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	15%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Mining and Extraction	Ventilation	Ventilation	1000 CFM	New	1,964.09	20	\$1,219.71	100%	at stock turnover	\$0.06	1,337.17	1,337.17	AEG-BEST
Mining and Extraction	Interior Lighting	Screw-in	lamps	New	36.27	8	\$4.05	100%	at stock turnover	\$0.00	1,337.79	1,393.46	7th Power Plan
Mining and Extraction	Interior Lighting	High-Bay Fixtures	lamps	New	191.61	15	\$127.03	100%	at stock turnover	\$0.07	33,930.78	32,851.48	Annual Energy Outlook, 2015

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Mining and Extraction	Interior Lighting	Linear Lighting	lamps	New	28.60	17	\$54.19	100%	at stock turnover	\$0.14	5,325.95	5,211.90	7th Power Plan
Mining and Extraction	Exterior Lighting	Screw-in	lamps	New	207.12	8	\$4.05	100%	at stock turnover	\$0.00	409.41	426.45	7th Power Plan
Mining and Extraction	Exterior Lighting	Area Lighting	lamps	New	2,507.81	15	\$45.69	100%	at stock turnover	-\$0.01	8,740.29	8,553.84	Annual Energy Outlook, 2015
Mining and Extraction	Exterior Lighting	Linear Lighting	lamps	New	196.34	17	\$54.19	100%	at stock turnover	\$0.02	1,439.35	1,408.53	7th Power Plan
Mining and Extraction	Motors	Pumps	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Mining and Extraction	Motors	Fans & Blowers	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Mining and Extraction	Motors	Compressed Air	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Mining and Extraction	Motors	Material Handling	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Mining and Extraction	Motors	Other Motors	1 unit	New	0.00	10	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	N/A
Mining and Extraction	Process	Process Heating	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Mining and Extraction	Process	Process Cooling	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Mining and Extraction	Process	Process Refrigeration	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Mining and Extraction	Process	Process Electrochemical	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Mining and Extraction	Process	Process Other	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Mining and Extraction	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Food Mfg	Cooling	Air-Cooled Chiller	1 kBTU/hr	Existing	21.38	20	\$26.36	3%	at stock turnover	\$0.12	3.08	3.08	Annual Energy Outlook, 2015
Food Mfg	Cooling	Water-Cooled Chiller	1 kBTU/hr	Existing	31.90	25	\$12.65	3%	at stock turnover	\$0.04	4.59	4.59	Annual Energy Outlook, 2015
Food Mfg	Cooling	RTU	1 kBTU/hr	Existing	3.22	15	\$6.75	11%	at stock turnover	\$0.24	2.49	2.49	Annual Energy Outlook, 2015
Food Mfg	Cooling	Air-Source Heat Pump	1 kBTU/hr	Existing	6.21	15	\$21.65	3%	at stock turnover	\$0.14	0.93	0.93	Annual Energy Outlook, 2015

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Food Mfg	Heating	Air-Source Heat Pump	1 kBTU/hr	Existing	11.39	15	\$21.65	3%	at stock turnover	\$0.14	1.71	1.71	Annual Energy Outlook, 2015
Food Mfg	Cooling	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Food Mfg	Heating	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Food Mfg	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	3%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Food Mfg	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	15%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Food Mfg	Ventilation	Ventilation	1000 CFM	Existing	2,269.39	20	\$1,219.71	100%	at stock turnover	\$0.05	16.74	16.74	AEG-BEST
Food Mfg	Interior Lighting	Screw-in	lamps	Existing	36.23	8	\$4.05	100%	at stock turnover	\$0.00	11.52	17.07	7th Power Plan
Food Mfg	Interior Lighting	High-Bay Fixtures	lamps	Existing	191.34	15	\$127.03	100%	at stock turnover	\$0.07	259.30	245.57	Annual Energy Outlook, 2015
Food Mfg	Interior Lighting	Linear Lighting	lamps	Existing	28.60	17	\$54.19	100%	at stock turnover	\$0.14	48.72	47.18	7th Power Plan
Food Mfg	Exterior Lighting	Screw-in	lamps	Existing	206.91	8	\$4.05	100%	at stock turnover	\$0.00	3.53	5.22	7th Power Plan
Food Mfg	Exterior Lighting	Area Lighting	lamps	Existing	2,507.81	15	\$45.69	100%	at stock turnover	-\$0.01	67.21	64.84	Annual Energy Outlook, 2015
Food Mfg	Exterior Lighting	Linear Lighting	lamps	Existing	196.34	17	\$54.19	100%	at stock turnover	\$0.02	13.17	12.75	7th Power Plan
Food Mfg	Motors	Pumps	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Food Mfg	Motors	Fans & Blowers	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Food Mfg	Motors	Compressed Air	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Food Mfg	Motors	Material Handling	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Food Mfg	Motors	Other Motors	1 unit	Existing	0.00	10	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	N/A
Food Mfg	Process	Process Heating	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Food Mfg	Process	Process Cooling	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Food Mfg	Process	Process Refrigeration	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Food Mfg	Process	Process Electrochemical	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Food Mfg	Process	Process Other	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Food Mfg	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Food Mfg	Cooling	Air-Cooled Chiller	1 kBTU/hr	New	18.40	20	\$26.36	3%	at stock turnover	\$0.14	3.36	3.36	Annual Energy Outlook, 2015
Food Mfg	Cooling	Water-Cooled Chiller	1 kBTU/hr	New	27.76	25	\$12.65	3%	at stock turnover	\$0.04	4.49	4.49	Annual Energy Outlook, 2015
Food Mfg	Cooling	RTU	1 kBTU/hr	New	3.13	15	\$6.75	11%	at stock turnover	\$0.24	2.38	2.38	Annual Energy Outlook, 2015
Food Mfg	Cooling	Air-Source Heat Pump	1 kBTU/hr	New	6.04	15	\$21.65	3%	at stock turnover	\$0.14	0.95	0.95	Annual Energy Outlook, 2015
Food Mfg	Heating	Air-Source Heat Pump	1 kBTU/hr	New	10.92	15	\$21.65	3%	at stock turnover	\$0.14	1.72	1.72	Annual Energy Outlook, 2015
Food Mfg	Cooling	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Food Mfg	Heating	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Food Mfg	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	3%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Food Mfg	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	15%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Food Mfg	Ventilation	Ventilation	1000 CFM	New	1,964.09	20	\$1,219.71	100%	at stock turnover	\$0.06	15.53	15.53	AEG-BEST
Food Mfg	Interior Lighting	Screw-in	lamps	New	36.27	8	\$4.05	100%	at stock turnover	\$0.00	10.20	10.63	7th Power Plan
Food Mfg	Interior Lighting	High-Bay Fixtures	lamps	New	191.61	15	\$127.03	100%	at stock turnover	\$0.07	258.79	250.56	Annual Energy Outlook, 2015
Food Mfg	Interior Lighting	Linear Lighting	lamps	New	28.60	17	\$54.19	100%	at stock turnover	\$0.14	40.62	39.75	7th Power Plan
Food Mfg	Exterior Lighting	Screw-in	lamps	New	207.12	8	\$4.05	100%	at stock turnover	\$0.00	3.12	3.25	7th Power Plan
Food Mfg	Exterior Lighting	Area Lighting	lamps	New	2,507.81	15	\$45.69	100%	at stock turnover	-\$0.01	66.66	65.24	Annual Energy Outlook, 2015

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Food Mfg	Exterior Lighting	Linear Lighting	lamps	New	196.34	17	\$54.19	100%	at stock turnover	\$0.02	10.98	10.74	7th Power Plan
Food Mfg	Motors	Pumps	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Food Mfg	Motors	Fans & Blowers	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Food Mfg	Motors	Compressed Air	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Food Mfg	Motors	Material Handling	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Food Mfg	Motors	Other Motors	1 unit	New	0.00	10	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	N/A
Food Mfg	Process	Process Heating	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Food Mfg	Process	Process Cooling	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Food Mfg	Process	Process Refrigeration	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Food Mfg	Process	Process Electrochemical	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Food Mfg	Process	Process Other	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Food Mfg	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Paper Mfg	Cooling	Air-Cooled Chiller	1 kBTU/hr	Existing	21.38	20	\$26.36	3%	at stock turnover	\$0.12	0.00	0.00	Annual Energy Outlook, 2015
Paper Mfg	Cooling	Water-Cooled Chiller	1 kBTU/hr	Existing	31.90	25	\$12.65	3%	at stock turnover	\$0.04	0.00	0.00	Annual Energy Outlook, 2015
Paper Mfg	Cooling	RTU	1 kBTU/hr	Existing	3.22	15	\$6.75	11%	at stock turnover	\$0.24	0.00	0.00	Annual Energy Outlook, 2015
Paper Mfg	Cooling	Air-Source Heat Pump	1 kBTU/hr	Existing	6.21	15	\$21.65	3%	at stock turnover	\$0.14	0.00	0.00	Annual Energy Outlook, 2015
Paper Mfg	Heating	Air-Source Heat Pump	1 kBTU/hr	Existing	11.39	15	\$21.65	3%	at stock turnover	\$0.14	0.00	0.00	Annual Energy Outlook, 2015
Paper Mfg	Cooling	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Paper Mfg	Heating	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Paper Mfg	Heating	Electric Furnace	1 kBtu/hr	Existing	0.00	18	\$0.00	3%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Paper Mfg	Heating	Electric Room Heat	3.5 kBtu/hr	Existing	0.00	18	\$0.00	15%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Paper Mfg	Ventilation	Ventilation	1000 CFM	Existing	2,269.39	20	\$1,219.71	100%	at stock turnover	\$0.05	0.01	0.01	AEG-BEST
Paper Mfg	Interior Lighting	Screw-in	lamps	Existing	36.23	8	\$4.05	100%	at stock turnover	\$0.00	0.01	0.01	7th Power Plan
Paper Mfg	Interior Lighting	High-Bay Fixtures	lamps	Existing	191.34	15	\$127.03	100%	at stock turnover	\$0.07	0.16	0.15	Annual Energy Outlook, 2015
Paper Mfg	Interior Lighting	Linear Lighting	lamps	Existing	28.60	17	\$54.19	100%	at stock turnover	\$0.14	0.03	0.03	7th Power Plan
Paper Mfg	Exterior Lighting	Screw-in	lamps	Existing	206.91	8	\$4.05	100%	at stock turnover	\$0.00	0.00	0.00	7th Power Plan
Paper Mfg	Exterior Lighting	Area Lighting	lamps	Existing	2,507.81	15	\$45.69	100%	at stock turnover	-\$0.01	0.04	0.04	Annual Energy Outlook, 2015
Paper Mfg	Exterior Lighting	Linear Lighting	lamps	Existing	196.34	17	\$54.19	100%	at stock turnover	\$0.02	0.01	0.01	7th Power Plan
Paper Mfg	Motors	Pumps	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Paper Mfg	Motors	Fans & Blowers	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Paper Mfg	Motors	Compressed Air	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Paper Mfg	Motors	Material Handling	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Paper Mfg	Motors	Other Motors	1 unit	Existing	0.00	10	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	N/A
Paper Mfg	Process	Process Heating	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Paper Mfg	Process	Process Cooling	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Paper Mfg	Process	Process Refrigeration	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Paper Mfg	Process	Process Electrochemical	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Paper Mfg	Process	Process Other	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Paper Mfg	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Paper Mfg	Cooling	Air-Cooled Chiller	1 kBTU/hr	New	18.40	20	\$26.36	3%	at stock turnover	\$0.14	0.00	0.00	Annual Energy Outlook, 2015
Paper Mfg	Cooling	Water-Cooled Chiller	1 kBTU/hr	New	27.76	25	\$12.65	3%	at stock turnover	\$0.04	0.00	0.00	Annual Energy Outlook, 2015
Paper Mfg	Cooling	RTU	1 kBTU/hr	New	3.13	15	\$6.75	11%	at stock turnover	\$0.24	0.00	0.00	Annual Energy Outlook, 2015
Paper Mfg	Cooling	Air-Source Heat Pump	1 kBTU/hr	New	6.04	15	\$21.65	3%	at stock turnover	\$0.14	0.00	0.00	Annual Energy Outlook, 2015
Paper Mfg	Heating	Air-Source Heat Pump	1 kBTU/hr	New	10.92	15	\$21.65	3%	at stock turnover	\$0.14	0.00	0.00	Annual Energy Outlook, 2015
Paper Mfg	Cooling	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Paper Mfg	Heating	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Paper Mfg	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	3%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Paper Mfg	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	15%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Paper Mfg	Ventilation	Ventilation	1000 CFM	New	1,964.09	20	\$1,219.71	100%	at stock turnover	\$0.06	0.01	0.01	AEG-BEST
Paper Mfg	Interior Lighting	Screw-in	lamps	New	36.27	8	\$4.05	100%	at stock turnover	\$0.00	0.01	0.01	7th Power Plan
Paper Mfg	Interior Lighting	High-Bay Fixtures	lamps	New	191.61	15	\$127.03	100%	at stock turnover	\$0.07	0.16	0.15	Annual Energy Outlook, 2015
Paper Mfg	Interior Lighting	Linear Lighting	lamps	New	28.60	17	\$54.19	100%	at stock turnover	\$0.14	0.02	0.02	7th Power Plan
Paper Mfg	Exterior Lighting	Screw-in	lamps	New	207.12	8	\$4.05	100%	at stock turnover	\$0.00	0.00	0.00	7th Power Plan
Paper Mfg	Exterior Lighting	Area Lighting	lamps	New	2,507.81	15	\$45.69	100%	at stock turnover	-\$0.01	0.04	0.04	Annual Energy Outlook, 2015
Paper Mfg	Exterior Lighting	Linear Lighting	lamps	New	196.34	17	\$54.19	100%	at stock turnover	\$0.02	0.01	0.01	7th Power Plan
Paper Mfg	Motors	Pumps	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Paper Mfg	Motors	Fans & Blowers	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Paper Mfg	Motors	Compressed Air	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Paper Mfg	Motors	Material Handling	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Paper Mfg	Motors	Other Motors	1 unit	New	0.00	10	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	N/A
Paper Mfg	Process	Process Heating	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Paper Mfg	Process	Process Cooling	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Paper Mfg	Process	Process Refrigeration	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Paper Mfg	Process	Process Electrochemical	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Paper Mfg	Process	Process Other	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Paper Mfg	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Petroleum Refining	Cooling	Air-Cooled Chiller	1 kBTU/hr	Existing	21.38	20	\$26.36	3%	at stock turnover	\$0.12	15.61	15.61	Annual Energy Outlook, 2015
Petroleum Refining	Cooling	Water-Cooled Chiller	1 kBTU/hr	Existing	31.90	25	\$12.65	3%	at stock turnover	\$0.04	23.29	23.29	Annual Energy Outlook, 2015
Petroleum Refining	Cooling	RTU	1 kBTU/hr	Existing	3.22	15	\$6.75	11%	at stock turnover	\$0.24	12.63	12.63	Annual Energy Outlook, 2015
Petroleum Refining	Cooling	Air-Source Heat Pump	1 kBTU/hr	Existing	6.21	15	\$21.65	3%	at stock turnover	\$0.14	4.73	4.73	Annual Energy Outlook, 2015
Petroleum Refining	Heating	Air-Source Heat Pump	1 kBTU/hr	Existing	11.39	15	\$21.65	3%	at stock turnover	\$0.14	8.68	8.68	Annual Energy Outlook, 2015
Petroleum Refining	Cooling	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Petroleum Refining	Heating	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Petroleum Refining	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	3%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Petroleum Refining	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	15%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Petroleum Refining	Ventilation	Ventilation	1000 CFM	Existing	2,269.39	20	\$1,219.71	100%	at stock turnover	\$0.05	84.99	84.99	AEG-BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Petroleum Refining	Interior Lighting	Screw-in	lamps	Existing	36.23	8	\$4.05	100%	at stock turnover	\$0.00	45.94	68.06	7th Power Plan
Petroleum Refining	Interior Lighting	High-Bay Fixtures	lamps	Existing	191.34	15	\$127.03	100%	at stock turnover	\$0.07	1,034.06	979.29	Annual Energy Outlook, 2015
Petroleum Refining	Interior Lighting	Linear Lighting	lamps	Existing	28.60	17	\$54.19	100%	at stock turnover	\$0.14	194.28	188.14	7th Power Plan
Petroleum Refining	Exterior Lighting	Screw-in	lamps	Existing	206.91	8	\$4.05	100%	at stock turnover	\$0.00	14.06	20.83	7th Power Plan
Petroleum Refining	Exterior Lighting	Area Lighting	lamps	Existing	2,507.81	15	\$45.69	100%	at stock turnover	-\$0.01	268.04	258.58	Annual Energy Outlook, 2015
Petroleum Refining	Exterior Lighting	Linear Lighting	lamps	Existing	196.34	17	\$54.19	100%	at stock turnover	\$0.02	52.51	50.85	7th Power Plan
Petroleum Refining	Motors	Pumps	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Petroleum Refining	Motors	Fans & Blowers	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Petroleum Refining	Motors	Compressed Air	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Petroleum Refining	Motors	Material Handling	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Petroleum Refining	Motors	Other Motors	1 unit	Existing	0.00	10	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	N/A
Petroleum Refining	Process	Process Heating	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Petroleum Refining	Process	Process Cooling	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Petroleum Refining	Process	Process Refrigeration	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Petroleum Refining	Process	Process Electrochemical	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Petroleum Refining	Process	Process Other	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Petroleum Refining	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Petroleum Refining	Cooling	Air-Cooled Chiller	1 kBTU/hr	New	18.40	20	\$26.36	3%	at stock turnover	\$0.14	17.06	17.06	Annual Energy Outlook, 2015
Petroleum Refining	Cooling	Water-Cooled Chiller	1 kBTU/hr	New	27.76	25	\$12.65	3%	at stock turnover	\$0.04	22.80	22.80	Annual Energy Outlook, 2015

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Petroleum Refining	Cooling	RTU	1 kBTU/hr	New	3.13	15	\$6.75	11%	at stock turnover	\$0.24	12.06	12.06	Annual Energy Outlook, 2015
Petroleum Refining	Cooling	Air-Source Heat Pump	1 kBTU/hr	New	6.04	15	\$21.65	3%	at stock turnover	\$0.14	4.81	4.81	Annual Energy Outlook, 2015
Petroleum Refining	Heating	Air-Source Heat Pump	1 kBTU/hr	New	10.92	15	\$21.65	3%	at stock turnover	\$0.14	8.71	8.71	Annual Energy Outlook, 2015
Petroleum Refining	Cooling	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Petroleum Refining	Heating	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Petroleum Refining	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	3%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Petroleum Refining	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	15%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Petroleum Refining	Ventilation	Ventilation	1000 CFM	New	1,964.09	20	\$1,219.71	100%	at stock turnover	\$0.06	78.82	78.82	AEG-BEST
Petroleum Refining	Interior Lighting	Screw-in	lamps	New	36.27	8	\$4.05	100%	at stock turnover	\$0.00	40.69	42.38	7th Power Plan
Petroleum Refining	Interior Lighting	High-Bay Fixtures	lamps	New	191.61	15	\$127.03	100%	at stock turnover	\$0.07	1,032.01	999.18	Annual Energy Outlook, 2015
Petroleum Refining	Interior Lighting	Linear Lighting	lamps	New	28.60	17	\$54.19	100%	at stock turnover	\$0.14	161.99	158.52	7th Power Plan
Petroleum Refining	Exterior Lighting	Screw-in	lamps	New	207.12	8	\$4.05	100%	at stock turnover	\$0.00	12.45	12.97	7th Power Plan
Petroleum Refining	Exterior Lighting	Area Lighting	lamps	New	2,507.81	15	\$45.69	100%	at stock turnover	-\$0.01	265.84	260.17	Annual Energy Outlook, 2015
Petroleum Refining	Exterior Lighting	Linear Lighting	lamps	New	196.34	17	\$54.19	100%	at stock turnover	\$0.02	43.78	42.84	7th Power Plan
Petroleum Refining	Motors	Pumps	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Petroleum Refining	Motors	Fans & Blowers	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Petroleum Refining	Motors	Compressed Air	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Petroleum Refining	Motors	Material Handling	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Petroleum Refining	Motors	Other Motors	1 unit	New	0.00	10	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Petroleum Refining	Process	Process Heating	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Petroleum Refining	Process	Process Cooling	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Petroleum Refining	Process	Process Refrigeration	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Petroleum Refining	Process	Process Electrochemical	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Petroleum Refining	Process	Process Other	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Petroleum Refining	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Cooling	Air-Cooled Chiller	1 kBTU/hr	Existing	21.38	20	\$26.36	3%	at stock turnover	\$0.12	12.27	12.27	Annual Energy Outlook, 2015
Stone Clay Glass Products	Cooling	Water-Cooled Chiller	1 kBTU/hr	Existing	31.90	25	\$12.65	3%	at stock turnover	\$0.04	18.30	18.30	Annual Energy Outlook, 2015
Stone Clay Glass Products	Cooling	RTU	1 kBTU/hr	Existing	3.22	15	\$6.75	11%	at stock turnover	\$0.24	9.93	9.93	Annual Energy Outlook, 2015
Stone Clay Glass Products	Cooling	Air-Source Heat Pump	1 kBTU/hr	Existing	6.21	15	\$21.65	3%	at stock turnover	\$0.14	3.72	3.72	Annual Energy Outlook, 2015
Stone Clay Glass Products	Heating	Air-Source Heat Pump	1 kBTU/hr	Existing	11.39	15	\$21.65	3%	at stock turnover	\$0.14	6.82	6.82	Annual Energy Outlook, 2015
Stone Clay Glass Products	Cooling	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Stone Clay Glass Products	Heating	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Stone Clay Glass Products	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	3%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Stone Clay Glass Products	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	15%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Stone Clay Glass Products	Ventilation	Ventilation	1000 CFM	Existing	2,269.39	20	\$1,219.71	100%	at stock turnover	\$0.05	66.78	66.78	AEG-BEST
Stone Clay Glass Products	Interior Lighting	Screw-in	lamps	Existing	36.23	8	\$4.05	100%	at stock turnover	\$0.00	44.19	65.46	7th Power Plan
Stone Clay Glass Products	Interior Lighting	High-Bay Fixtures	lamps	Existing	191.34	15	\$127.03	100%	at stock turnover	\$0.07	994.60	941.92	Annual Energy Outlook, 2015
Stone Clay Glass Products	Interior Lighting	Linear Lighting	lamps	Existing	28.60	17	\$54.19	100%	at stock turnover	\$0.14	186.87	180.96	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Stone Clay Glass Products	Exterior Lighting	Screw-in	lamps	Existing	206.91	8	\$4.05	100%	at stock turnover	\$0.00	13.52	20.03	7th Power Plan
Stone Clay Glass Products	Exterior Lighting	Area Lighting	lamps	Existing	2,507.81	15	\$45.69	100%	at stock turnover	-\$0.01	257.81	248.71	Annual Energy Outlook, 2015
Stone Clay Glass Products	Exterior Lighting	Linear Lighting	lamps	Existing	196.34	17	\$54.19	100%	at stock turnover	\$0.02	50.50	48.91	7th Power Plan
Stone Clay Glass Products	Motors	Pumps	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Motors	Fans & Blowers	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Motors	Compressed Air	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Motors	Material Handling	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Motors	Other Motors	1 unit	Existing	0.00	10	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Process	Process Heating	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Process	Process Cooling	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Process	Process Refrigeration	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Process	Process Electrochemical	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Process	Process Other	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Cooling	Air-Cooled Chiller	1 kBTU/hr	New	18.40	20	\$26.36	3%	at stock turnover	\$0.14	13.40	13.40	Annual Energy Outlook, 2015
Stone Clay Glass Products	Cooling	Water-Cooled Chiller	1 kBTU/hr	New	27.76	25	\$12.65	3%	at stock turnover	\$0.04	17.92	17.92	Annual Energy Outlook, 2015
Stone Clay Glass Products	Cooling	RTU	1 kBTU/hr	New	3.13	15	\$6.75	11%	at stock turnover	\$0.24	9.47	9.47	Annual Energy Outlook, 2015
Stone Clay Glass Products	Cooling	Air-Source Heat Pump	1 kBTU/hr	New	6.04	15	\$21.65	3%	at stock turnover	\$0.14	3.78	3.78	Annual Energy Outlook, 2015
Stone Clay Glass Products	Heating	Air-Source Heat Pump	1 kBTU/hr	New	10.92	15	\$21.65	3%	at stock turnover	\$0.14	6.84	6.84	Annual Energy Outlook, 2015

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Stone Clay Glass Products	Cooling	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Stone Clay Glass Products	Heating	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Stone Clay Glass Products	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	3%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Stone Clay Glass Products	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	15%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Stone Clay Glass Products	Ventilation	Ventilation	1000 CFM	New	1,964.09	20	\$1,219.71	100%	at stock turnover	\$0.06	61.94	61.94	AEG-BEST
Stone Clay Glass Products	Interior Lighting	Screw-in	lamps	New	36.27	8	\$4.05	100%	at stock turnover	\$0.00	39.14	40.76	7th Power Plan
Stone Clay Glass Products	Interior Lighting	High-Bay Fixtures	lamps	New	191.61	15	\$127.03	100%	at stock turnover	\$0.07	992.63	961.05	Annual Energy Outlook, 2015
Stone Clay Glass Products	Interior Lighting	Linear Lighting	lamps	New	28.60	17	\$54.19	100%	at stock turnover	\$0.14	155.81	152.47	7th Power Plan
Stone Clay Glass Products	Exterior Lighting	Screw-in	lamps	New	207.12	8	\$4.05	100%	at stock turnover	\$0.00	11.98	12.48	7th Power Plan
Stone Clay Glass Products	Exterior Lighting	Area Lighting	lamps	New	2,507.81	15	\$45.69	100%	at stock turnover	-\$0.01	255.69	250.24	Annual Energy Outlook, 2015
Stone Clay Glass Products	Exterior Lighting	Linear Lighting	lamps	New	196.34	17	\$54.19	100%	at stock turnover	\$0.02	42.11	41.21	7th Power Plan
Stone Clay Glass Products	Motors	Pumps	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Motors	Fans & Blowers	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Motors	Compressed Air	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Motors	Material Handling	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Motors	Other Motors	1 unit	New	0.00	10	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Process	Process Heating	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Process	Process Cooling	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Process	Process Refrigeration	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Stone Clay Glass Products	Process	Process Electrochemical	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Process	Process Other	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Cooling	Air-Cooled Chiller	1 kBTU/hr	Existing	21.38	20	\$26.36	3%	at stock turnover	\$0.12	1.31	1.31	Annual Energy Outlook, 2015
Transportation Equipment Mfg	Cooling	Water-Cooled Chiller	1 kBTU/hr	Existing	31.90	25	\$12.65	3%	at stock turnover	\$0.04	1.95	1.95	Annual Energy Outlook, 2015
Transportation Equipment Mfg	Cooling	RTU	1 kBTU/hr	Existing	3.22	15	\$6.75	11%	at stock turnover	\$0.24	1.06	1.06	Annual Energy Outlook, 2015
Transportation Equipment Mfg	Cooling	Air-Source Heat Pump	1 kBTU/hr	Existing	6.21	15	\$21.65	3%	at stock turnover	\$0.14	0.40	0.40	Annual Energy Outlook, 2015
Transportation Equipment Mfg	Heating	Air-Source Heat Pump	1 kBTU/hr	Existing	11.39	15	\$21.65	3%	at stock turnover	\$0.14	0.73	0.73	Annual Energy Outlook, 2015
Transportation Equipment Mfg	Cooling	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Transportation Equipment Mfg	Heating	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Transportation Equipment Mfg	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	3%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Transportation Equipment Mfg	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	15%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Transportation Equipment Mfg	Ventilation	Ventilation	1000 CFM	Existing	2,269.39	20	\$1,219.71	100%	at stock turnover	\$0.05	7.11	7.11	AEG-BEST
Transportation Equipment Mfg	Interior Lighting	Screw-in	lamps	Existing	36.23	8	\$4.05	100%	at stock turnover	\$0.00	4.17	6.17	7th Power Plan
Transportation Equipment Mfg	Interior Lighting	High-Bay Fixtures	lamps	Existing	191.34	15	\$127.03	100%	at stock turnover	\$0.07	93.78	88.82	Annual Energy Outlook, 2015
Transportation Equipment Mfg	Interior Lighting	Linear Lighting	lamps	Existing	28.60	17	\$54.19	100%	at stock turnover	\$0.14	17.62	17.06	7th Power Plan
Transportation Equipment Mfg	Exterior Lighting	Screw-in	lamps	Existing	206.91	8	\$4.05	100%	at stock turnover	\$0.00	1.28	1.89	7th Power Plan
Transportation Equipment Mfg	Exterior Lighting	Area Lighting	lamps	Existing	2,507.81	15	\$45.69	100%	at stock turnover	-\$0.01	24.31	23.45	Annual Energy Outlook, 2015
Transportation Equipment Mfg	Exterior Lighting	Linear Lighting	lamps	Existing	196.34	17	\$54.19	100%	at stock turnover	\$0.02	4.76	4.61	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Transportation Equipment Mfg	Motors	Pumps	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Motors	Fans & Blowers	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Motors	Compressed Air	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Motors	Material Handling	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Motors	Other Motors	1 unit	Existing	0.00	10	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Process	Process Heating	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Process	Process Cooling	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Process	Process Refrigeration	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Process	Process Electrochemical	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Process	Process Other	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Cooling	Air-Cooled Chiller	1 kBTU/hr	New	18.40	20	\$26.36	3%	at stock turnover	\$0.14	1.43	1.43	Annual Energy Outlook, 2015
Transportation Equipment Mfg	Cooling	Water-Cooled Chiller	1 kBTU/hr	New	27.76	25	\$12.65	3%	at stock turnover	\$0.04	1.91	1.91	Annual Energy Outlook, 2015
Transportation Equipment Mfg	Cooling	RTU	1 kBTU/hr	New	3.13	15	\$6.75	11%	at stock turnover	\$0.24	1.01	1.01	Annual Energy Outlook, 2015
Transportation Equipment Mfg	Cooling	Air-Source Heat Pump	1 kBTU/hr	New	6.04	15	\$21.65	3%	at stock turnover	\$0.14	0.40	0.40	Annual Energy Outlook, 2015
Transportation Equipment Mfg	Heating	Air-Source Heat Pump	1 kBTU/hr	New	10.92	15	\$21.65	3%	at stock turnover	\$0.14	0.73	0.73	Annual Energy Outlook, 2015
Transportation Equipment Mfg	Cooling	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Transportation Equipment Mfg	Heating	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Transportation Equipment Mfg	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	3%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Transportation Equipment Mfg	Heating	Electric Room Heat	3.5 kBtu/hr	New	0.00	18	\$0.00	15%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Transportation Equipment Mfg	Ventilation	Ventilation	1000 CFM	New	1,964.09	20	\$1,219.71	100%	at stock turnover	\$0.06	6.59	6.59	AEG-BEST
Transportation Equipment Mfg	Interior Lighting	Screw-in	lamps	New	36.27	8	\$4.05	100%	at stock turnover	\$0.00	3.69	3.84	7th Power Plan
Transportation Equipment Mfg	Interior Lighting	High-Bay Fixtures	lamps	New	191.61	15	\$127.03	100%	at stock turnover	\$0.07	93.60	90.62	Annual Energy Outlook, 2015
Transportation Equipment Mfg	Interior Lighting	Linear Lighting	lamps	New	28.60	17	\$54.19	100%	at stock turnover	\$0.14	14.69	14.38	7th Power Plan
Transportation Equipment Mfg	Exterior Lighting	Screw-in	lamps	New	207.12	8	\$4.05	100%	at stock turnover	\$0.00	1.13	1.18	7th Power Plan
Transportation Equipment Mfg	Exterior Lighting	Area Lighting	lamps	New	2,507.81	15	\$45.69	100%	at stock turnover	-\$0.01	24.11	23.60	Annual Energy Outlook, 2015
Transportation Equipment Mfg	Exterior Lighting	Linear Lighting	lamps	New	196.34	17	\$54.19	100%	at stock turnover	\$0.02	3.97	3.89	7th Power Plan
Transportation Equipment Mfg	Motors	Pumps	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Motors	Fans & Blowers	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Motors	Compressed Air	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Motors	Material Handling	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Motors	Other Motors	1 unit	New	0.00	10	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Process	Process Heating	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Process	Process Cooling	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Process	Process Refrigeration	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Process	Process Electrochemical	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Process	Process Other	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Wastewater	Cooling	Air-Cooled Chiller	1 kBTU/hr	Existing	21.38	20	\$26.36	3%	at stock turnover	\$0.12	1.48	1.48	Annual Energy Outlook, 2015
Wastewater	Cooling	Water-Cooled Chiller	1 kBTU/hr	Existing	31.90	25	\$12.65	3%	at stock turnover	\$0.04	2.20	2.20	Annual Energy Outlook, 2015
Wastewater	Cooling	RTU	1 kBTU/hr	Existing	3.22	15	\$6.75	11%	at stock turnover	\$0.24	1.20	1.20	Annual Energy Outlook, 2015
Wastewater	Cooling	Air-Source Heat Pump	1 kBTU/hr	Existing	6.21	15	\$21.65	3%	at stock turnover	\$0.14	0.45	0.45	Annual Energy Outlook, 2015
Wastewater	Heating	Air-Source Heat Pump	1 kBTU/hr	Existing	11.39	15	\$21.65	3%	at stock turnover	\$0.14	0.82	0.82	Annual Energy Outlook, 2015
Wastewater	Cooling	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Wastewater	Heating	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Wastewater	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	3%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Wastewater	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	15%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Wastewater	Ventilation	Ventilation	1000 CFM	Existing	2,269.39	20	\$1,219.71	100%	at stock turnover	\$0.05	8.04	8.04	AEG-BEST
Wastewater	Interior Lighting	Screw-in	lamps	Existing	36.23	8	\$4.05	100%	at stock turnover	\$0.00	6.03	8.94	7th Power Plan
Wastewater	Interior Lighting	High-Bay Fixtures	lamps	Existing	191.34	15	\$127.03	100%	at stock turnover	\$0.07	135.82	128.62	Annual Energy Outlook, 2015
Wastewater	Interior Lighting	Linear Lighting	lamps	Existing	28.60	17	\$54.19	100%	at stock turnover	\$0.14	25.52	24.71	7th Power Plan
Wastewater	Exterior Lighting	Screw-in	lamps	Existing	206.91	8	\$4.05	100%	at stock turnover	\$0.00	1.85	2.74	7th Power Plan
Wastewater	Exterior Lighting	Area Lighting	lamps	Existing	2,507.81	15	\$45.69	100%	at stock turnover	-\$0.01	35.20	33.96	Annual Energy Outlook, 2015
Wastewater	Exterior Lighting	Linear Lighting	lamps	Existing	196.34	17	\$54.19	100%	at stock turnover	\$0.02	6.90	6.68	7th Power Plan
Wastewater	Motors	Pumps	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Wastewater	Motors	Fans & Blowers	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Wastewater	Motors	Compressed Air	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Wastewater	Motors	Material Handling	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Wastewater	Motors	Other Motors	1 unit	Existing	0.00	10	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	N/A
Wastewater	Process	Process Heating	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Wastewater	Process	Process Cooling	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Wastewater	Process	Process Refrigeration	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Wastewater	Process	Process Electrochemical	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Wastewater	Process	Process Other	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Wastewater	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Wastewater	Cooling	Air-Cooled Chiller	1 kBTU/hr	New	18.40	20	\$26.36	3%	at stock turnover	\$0.14	1.61	1.61	Annual Energy Outlook, 2015
Wastewater	Cooling	Water-Cooled Chiller	1 kBTU/hr	New	27.76	25	\$12.65	3%	at stock turnover	\$0.04	2.16	2.16	Annual Energy Outlook, 2015
Wastewater	Cooling	RTU	1 kBTU/hr	New	3.13	15	\$6.75	11%	at stock turnover	\$0.24	1.14	1.14	Annual Energy Outlook, 2015
Wastewater	Cooling	Air-Source Heat Pump	1 kBTU/hr	New	6.04	15	\$21.65	3%	at stock turnover	\$0.14	0.46	0.46	Annual Energy Outlook, 2015
Wastewater	Heating	Air-Source Heat Pump	1 kBTU/hr	New	10.92	15	\$21.65	3%	at stock turnover	\$0.14	0.82	0.82	Annual Energy Outlook, 2015
Wastewater	Cooling	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Wastewater	Heating	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Wastewater	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	3%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Wastewater	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	15%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Wastewater	Ventilation	Ventilation	1000 CFM	New	1,964.09	20	\$1,219.71	100%	at stock turnover	\$0.06	7.46	7.46	AEG-BEST
Wastewater	Interior Lighting	Screw-in	lamps	New	36.27	8	\$4.05	100%	at stock turnover	\$0.00	5.34	5.57	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Wastewater	Interior Lighting	High-Bay Fixtures	lamps	New	191.61	15	\$127.03	100%	at stock turnover	\$0.07	135.55	131.24	Annual Energy Outlook, 2015
Wastewater	Interior Lighting	Linear Lighting	lamps	New	28.60	17	\$54.19	100%	at stock turnover	\$0.14	21.28	20.82	7th Power Plan
Wastewater	Exterior Lighting	Screw-in	lamps	New	207.12	8	\$4.05	100%	at stock turnover	\$0.00	1.64	1.70	7th Power Plan
Wastewater	Exterior Lighting	Area Lighting	lamps	New	2,507.81	15	\$45.69	100%	at stock turnover	-\$0.01	34.92	34.17	Annual Energy Outlook, 2015
Wastewater	Exterior Lighting	Linear Lighting	lamps	New	196.34	17	\$54.19	100%	at stock turnover	\$0.02	5.75	5.63	7th Power Plan
Wastewater	Motors	Pumps	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Wastewater	Motors	Fans & Blowers	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Wastewater	Motors	Compressed Air	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Wastewater	Motors	Material Handling	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Wastewater	Motors	Other Motors	1 unit	New	0.00	10	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	N/A
Wastewater	Process	Process Heating	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Wastewater	Process	Process Cooling	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Wastewater	Process	Process Refrigeration	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Wastewater	Process	Process Electrochemical	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Wastewater	Process	Process Other	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Wastewater	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Water	Cooling	Air-Cooled Chiller	1 kBTU/hr	Existing	21.38	20	\$26.36	3%	at stock turnover	\$0.12	2.05	2.05	Annual Energy Outlook, 2015
Water	Cooling	Water-Cooled Chiller	1 kBTU/hr	Existing	31.90	25	\$12.65	3%	at stock turnover	\$0.04	3.06	3.06	Annual Energy Outlook, 2015
Water	Cooling	RTU	1 kBTU/hr	Existing	3.22	15	\$6.75	11%	at stock turnover	\$0.24	1.66	1.66	Annual Energy Outlook, 2015

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Water	Cooling	Air-Source Heat Pump	1 kBtu/hr	Existing	6.21	15	\$21.65	3%	at stock turnover	\$0.14	0.62	0.62	Annual Energy Outlook, 2015
Water	Heating	Air-Source Heat Pump	1 kBtu/hr	Existing	11.39	15	\$21.65	3%	at stock turnover	\$0.14	1.14	1.14	Annual Energy Outlook, 2015
Water	Cooling	Geothermal Heat Pump	1 kBtu/hr	Existing	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Water	Heating	Geothermal Heat Pump	1 kBtu/hr	Existing	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Water	Heating	Electric Furnace	1 kBtu/hr	Existing	0.00	18	\$0.00	3%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Water	Heating	Electric Room Heat	3.5 kBtu/hr	Existing	0.00	18	\$0.00	15%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Water	Ventilation	Ventilation	1000 CFM	Existing	2,269.39	20	\$1,219.71	100%	at stock turnover	\$0.05	11.16	11.16	AEG-BEST
Water	Interior Lighting	Screw-in	lamps	Existing	36.23	8	\$4.05	100%	at stock turnover	\$0.00	8.38	12.41	7th Power Plan
Water	Interior Lighting	High-Bay Fixtures	lamps	Existing	191.34	15	\$127.03	100%	at stock turnover	\$0.07	188.53	178.55	Annual Energy Outlook, 2015
Water	Interior Lighting	Linear Lighting	lamps	Existing	28.60	17	\$54.19	100%	at stock turnover	\$0.14	35.42	34.30	7th Power Plan
Water	Exterior Lighting	Screw-in	lamps	Existing	206.91	8	\$4.05	100%	at stock turnover	\$0.00	2.56	3.80	7th Power Plan
Water	Exterior Lighting	Area Lighting	lamps	Existing	2,507.81	15	\$45.69	100%	at stock turnover	-\$0.01	48.87	47.14	Annual Energy Outlook, 2015
Water	Exterior Lighting	Linear Lighting	lamps	Existing	196.34	17	\$54.19	100%	at stock turnover	\$0.02	9.57	9.27	7th Power Plan
Water	Motors	Pumps	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Water	Motors	Fans & Blowers	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Water	Motors	Compressed Air	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Water	Motors	Material Handling	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Water	Motors	Other Motors	1 unit	Existing	0.00	10	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	N/A
Water	Process	Process Heating	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Water	Process	Process Cooling	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Water	Process	Process Refrigeration	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Water	Process	Process Electrochemical	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Water	Process	Process Other	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Water	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Water	Cooling	Air-Cooled Chiller	1 kBTU/hr	New	18.40	20	\$26.36	3%	at stock turnover	\$0.14	2.24	2.24	Annual Energy Outlook, 2015
Water	Cooling	Water-Cooled Chiller	1 kBTU/hr	New	27.76	25	\$12.65	3%	at stock turnover	\$0.04	2.99	2.99	Annual Energy Outlook, 2015
Water	Cooling	RTU	1 kBTU/hr	New	3.13	15	\$6.75	11%	at stock turnover	\$0.24	1.58	1.58	Annual Energy Outlook, 2015
Water	Cooling	Air-Source Heat Pump	1 kBTU/hr	New	6.04	15	\$21.65	3%	at stock turnover	\$0.14	0.63	0.63	Annual Energy Outlook, 2015
Water	Heating	Air-Source Heat Pump	1 kBTU/hr	New	10.92	15	\$21.65	3%	at stock turnover	\$0.14	1.14	1.14	Annual Energy Outlook, 2015
Water	Cooling	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Water	Heating	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Water	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	3%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Water	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	15%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Water	Ventilation	Ventilation	1000 CFM	New	1,964.09	20	\$1,219.71	100%	at stock turnover	\$0.06	10.35	10.35	AEG-BEST
Water	Interior Lighting	Screw-in	lamps	New	36.27	8	\$4.05	100%	at stock turnover	\$0.00	7.42	7.73	7th Power Plan
Water	Interior Lighting	High-Bay Fixtures	lamps	New	191.61	15	\$127.03	100%	at stock turnover	\$0.07	188.16	182.17	Annual Energy Outlook, 2015
Water	Interior Lighting	Linear Lighting	lamps	New	28.60	17	\$54.19	100%	at stock turnover	\$0.14	29.53	28.90	7th Power Plan
Water	Exterior Lighting	Screw-in	lamps	New	207.12	8	\$4.05	100%	at stock turnover	\$0.00	2.27	2.36	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Water	Exterior Lighting	Area Lighting	lamps	New	2,507.81	15	\$45.69	100%	at stock turnover	-\$0.01	48.47	47.43	Annual Energy Outlook, 2015
Water	Exterior Lighting	Linear Lighting	lamps	New	196.34	17	\$54.19	100%	at stock turnover	\$0.02	7.98	7.81	7th Power Plan
Water	Motors	Pumps	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Water	Motors	Fans & Blowers	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Water	Motors	Compressed Air	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Water	Motors	Material Handling	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Water	Motors	Other Motors	1 unit	New	0.00	10	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	N/A
Water	Process	Process Heating	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Water	Process	Process Cooling	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Water	Process	Process Refrigeration	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Water	Process	Process Electrochemical	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Water	Process	Process Other	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Water	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Chemical Mfg	Cooling	Air-Cooled Chiller	1 kBTU/hr	Existing	21.38	20	\$26.36	3%	at stock turnover	\$0.12	47.98	47.98	Annual Energy Outlook, 2015
Chemical Mfg	Cooling	Water-Cooled Chiller	1 kBTU/hr	Existing	31.90	25	\$12.65	3%	at stock turnover	\$0.04	71.59	71.59	Annual Energy Outlook, 2015
Chemical Mfg	Cooling	RTU	1 kBTU/hr	Existing	3.22	15	\$6.75	11%	at stock turnover	\$0.24	38.83	38.83	Annual Energy Outlook, 2015
Chemical Mfg	Cooling	Air-Source Heat Pump	1 kBTU/hr	Existing	6.21	15	\$21.65	3%	at stock turnover	\$0.14	14.55	14.55	Annual Energy Outlook, 2015
Chemical Mfg	Heating	Air-Source Heat Pump	1 kBTU/hr	Existing	11.39	15	\$21.65	3%	at stock turnover	\$0.14	26.68	26.68	Annual Energy Outlook, 2015
Chemical Mfg	Cooling	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Chemical Mfg	Heating	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Chemical Mfg	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	3%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Chemical Mfg	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	15%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Chemical Mfg	Ventilation	Ventilation	1000 CFM	Existing	2,269.39	20	\$1,219.71	100%	at stock turnover	\$0.05	261.20	261.20	AEG-BEST
Chemical Mfg	Interior Lighting	Screw-in	lamps	Existing	36.23	8	\$4.05	100%	at stock turnover	\$0.00	133.81	198.24	7th Power Plan
Chemical Mfg	Interior Lighting	High-Bay Fixtures	lamps	Existing	191.34	15	\$127.03	100%	at stock turnover	\$0.07	3,011.94	2,852.43	Annual Energy Outlook, 2015
Chemical Mfg	Interior Lighting	Linear Lighting	lamps	Existing	28.60	17	\$54.19	100%	at stock turnover	\$0.14	565.89	548.01	7th Power Plan
Chemical Mfg	Exterior Lighting	Screw-in	lamps	Existing	206.91	8	\$4.05	100%	at stock turnover	\$0.00	40.95	60.67	7th Power Plan
Chemical Mfg	Exterior Lighting	Area Lighting	lamps	Existing	2,507.81	15	\$45.69	100%	at stock turnover	-\$0.01	780.72	753.16	Annual Energy Outlook, 2015
Chemical Mfg	Exterior Lighting	Linear Lighting	lamps	Existing	196.34	17	\$54.19	100%	at stock turnover	\$0.02	152.93	148.10	7th Power Plan
Chemical Mfg	Motors	Pumps	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Chemical Mfg	Motors	Fans & Blowers	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Chemical Mfg	Motors	Compressed Air	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Chemical Mfg	Motors	Material Handling	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Chemical Mfg	Motors	Other Motors	1 unit	Existing	0.00	10	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	N/A
Chemical Mfg	Process	Process Heating	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Chemical Mfg	Process	Process Cooling	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Chemical Mfg	Process	Process Refrigeration	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Chemical Mfg	Process	Process Electrochemical	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Chemical Mfg	Process	Process Other	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Chemical Mfg	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Chemical Mfg	Cooling	Air-Cooled Chiller	1 kBTU/hr	New	18.40	20	\$26.36	3%	at stock turnover	\$0.14	52.42	52.42	Annual Energy Outlook, 2015
Chemical Mfg	Cooling	Water-Cooled Chiller	1 kBTU/hr	New	27.76	25	\$12.65	3%	at stock turnover	\$0.04	70.07	70.07	Annual Energy Outlook, 2015
Chemical Mfg	Cooling	RTU	1 kBTU/hr	New	3.13	15	\$6.75	11%	at stock turnover	\$0.24	37.05	37.05	Annual Energy Outlook, 2015
Chemical Mfg	Cooling	Air-Source Heat Pump	1 kBTU/hr	New	6.04	15	\$21.65	3%	at stock turnover	\$0.14	14.79	14.79	Annual Energy Outlook, 2015
Chemical Mfg	Heating	Air-Source Heat Pump	1 kBTU/hr	New	10.92	15	\$21.65	3%	at stock turnover	\$0.14	26.76	26.76	Annual Energy Outlook, 2015
Chemical Mfg	Cooling	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Chemical Mfg	Heating	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Chemical Mfg	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	3%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Chemical Mfg	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	15%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Chemical Mfg	Ventilation	Ventilation	1000 CFM	New	1,964.09	20	\$1,219.71	100%	at stock turnover	\$0.06	242.25	242.25	AEG-BEST
Chemical Mfg	Interior Lighting	Screw-in	lamps	New	36.27	8	\$4.05	100%	at stock turnover	\$0.00	118.52	123.45	7th Power Plan
Chemical Mfg	Interior Lighting	High-Bay Fixtures	lamps	New	191.61	15	\$127.03	100%	at stock turnover	\$0.07	3,005.98	2,910.36	Annual Energy Outlook, 2015
Chemical Mfg	Interior Lighting	Linear Lighting	lamps	New	28.60	17	\$54.19	100%	at stock turnover	\$0.14	471.83	461.73	7th Power Plan
Chemical Mfg	Exterior Lighting	Screw-in	lamps	New	207.12	8	\$4.05	100%	at stock turnover	\$0.00	36.27	37.78	7th Power Plan
Chemical Mfg	Exterior Lighting	Area Lighting	lamps	New	2,507.81	15	\$45.69	100%	at stock turnover	-\$0.01	774.31	757.80	Annual Energy Outlook, 2015
Chemical Mfg	Exterior Lighting	Linear Lighting	lamps	New	196.34	17	\$54.19	100%	at stock turnover	\$0.02	127.51	124.78	7th Power Plan
Chemical Mfg	Motors	Pumps	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Chemical Mfg	Motors	Fans & Blowers	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Chemical Mfg	Motors	Compressed Air	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Chemical Mfg	Motors	Material Handling	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Chemical Mfg	Motors	Other Motors	1 unit	New	0.00	10	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	N/A
Chemical Mfg	Process	Process Heating	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Chemical Mfg	Process	Process Cooling	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Chemical Mfg	Process	Process Refrigeration	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Chemical Mfg	Process	Process Electrochemical	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Chemical Mfg	Process	Process Other	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Chemical Mfg	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Cooling	Air-Cooled Chiller	1 kBTU/hr	Existing	21.38	20	\$26.36	3%	at stock turnover	\$0.12	4.71	4.71	Annual Energy Outlook, 2015
Electronic Equipment Mfg	Cooling	Water-Cooled Chiller	1 kBTU/hr	Existing	31.90	25	\$12.65	3%	at stock turnover	\$0.04	7.03	7.03	Annual Energy Outlook, 2015
Electronic Equipment Mfg	Cooling	RTU	1 kBTU/hr	Existing	3.22	15	\$6.75	11%	at stock turnover	\$0.24	3.81	3.81	Annual Energy Outlook, 2015
Electronic Equipment Mfg	Cooling	Air-Source Heat Pump	1 kBTU/hr	Existing	6.21	15	\$21.65	3%	at stock turnover	\$0.14	1.43	1.43	Annual Energy Outlook, 2015
Electronic Equipment Mfg	Heating	Air-Source Heat Pump	1 kBTU/hr	Existing	11.39	15	\$21.65	3%	at stock turnover	\$0.14	2.62	2.62	Annual Energy Outlook, 2015
Electronic Equipment Mfg	Cooling	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Electronic Equipment Mfg	Heating	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Electronic Equipment Mfg	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	3%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Electronic Equipment Mfg	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	15%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Electronic Equipment Mfg	Ventilation	Ventilation	1000 CFM	Existing	2,269.39	20	\$1,219.71	100%	at stock turnover	\$0.05	25.64	25.64	AEG-BEST
Electronic Equipment Mfg	Interior Lighting	Screw-in	lamps	Existing	36.23	8	\$4.05	100%	at stock turnover	\$0.00	8.51	12.61	7th Power Plan
Electronic Equipment Mfg	Interior Lighting	High-Bay Fixtures	lamps	Existing	191.34	15	\$127.03	100%	at stock turnover	\$0.07	191.51	181.37	Annual Energy Outlook, 2015
Electronic Equipment Mfg	Interior Lighting	Linear Lighting	lamps	Existing	28.60	17	\$54.19	100%	at stock turnover	\$0.14	35.98	34.85	7th Power Plan
Electronic Equipment Mfg	Exterior Lighting	Screw-in	lamps	Existing	206.91	8	\$4.05	100%	at stock turnover	\$0.00	2.60	3.86	7th Power Plan
Electronic Equipment Mfg	Exterior Lighting	Area Lighting	lamps	Existing	2,507.81	15	\$45.69	100%	at stock turnover	-\$0.01	49.64	47.89	Annual Energy Outlook, 2015
Electronic Equipment Mfg	Exterior Lighting	Linear Lighting	lamps	Existing	196.34	17	\$54.19	100%	at stock turnover	\$0.02	9.72	9.42	7th Power Plan
Electronic Equipment Mfg	Motors	Pumps	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Motors	Fans & Blowers	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Motors	Compressed Air	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Motors	Material Handling	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Motors	Other Motors	1 unit	Existing	0.00	10	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Process	Process Heating	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Process	Process Cooling	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Process	Process Refrigeration	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Process	Process Electrochemical	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Process	Process Other	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Cooling	Air-Cooled Chiller	1 kBTU/hr	New	18.40	20	\$26.36	3%	at stock turnover	\$0.14	5.14	5.14	Annual Energy Outlook, 2015

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Electronic Equipment Mfg	Cooling	Water-Cooled Chiller	1 kBTU/hr	New	27.76	25	\$12.65	3%	at stock turnover	\$0.04	6.88	6.88	Annual Energy Outlook, 2015
Electronic Equipment Mfg	Cooling	RTU	1 kBTU/hr	New	3.13	15	\$6.75	11%	at stock turnover	\$0.24	3.64	3.64	Annual Energy Outlook, 2015
Electronic Equipment Mfg	Cooling	Air-Source Heat Pump	1 kBTU/hr	New	6.04	15	\$21.65	3%	at stock turnover	\$0.14	1.45	1.45	Annual Energy Outlook, 2015
Electronic Equipment Mfg	Heating	Air-Source Heat Pump	1 kBTU/hr	New	10.92	15	\$21.65	3%	at stock turnover	\$0.14	2.63	2.63	Annual Energy Outlook, 2015
Electronic Equipment Mfg	Cooling	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Electronic Equipment Mfg	Heating	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Electronic Equipment Mfg	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	3%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Electronic Equipment Mfg	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	15%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Electronic Equipment Mfg	Ventilation	Ventilation	1000 CFM	New	1,964.09	20	\$1,219.71	100%	at stock turnover	\$0.06	23.78	23.78	AEG-BEST
Electronic Equipment Mfg	Interior Lighting	Screw-in	lamps	New	36.27	8	\$4.05	100%	at stock turnover	\$0.00	7.54	7.85	7th Power Plan
Electronic Equipment Mfg	Interior Lighting	High-Bay Fixtures	lamps	New	191.61	15	\$127.03	100%	at stock turnover	\$0.07	191.13	185.06	Annual Energy Outlook, 2015
Electronic Equipment Mfg	Interior Lighting	Linear Lighting	lamps	New	28.60	17	\$54.19	100%	at stock turnover	\$0.14	30.00	29.36	7th Power Plan
Electronic Equipment Mfg	Exterior Lighting	Screw-in	lamps	New	207.12	8	\$4.05	100%	at stock turnover	\$0.00	2.31	2.40	7th Power Plan
Electronic Equipment Mfg	Exterior Lighting	Area Lighting	lamps	New	2,507.81	15	\$45.69	100%	at stock turnover	-\$0.01	49.23	48.18	Annual Energy Outlook, 2015
Electronic Equipment Mfg	Exterior Lighting	Linear Lighting	lamps	New	196.34	17	\$54.19	100%	at stock turnover	\$0.02	8.11	7.93	7th Power Plan
Electronic Equipment Mfg	Motors	Pumps	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Motors	Fans & Blowers	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Motors	Compressed Air	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Motors	Material Handling	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Electronic Equipment Mfg	Motors	Other Motors	1 unit	New	0.00	10	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Process	Process Heating	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Process	Process Cooling	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Process	Process Refrigeration	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Process	Process Electrochemical	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Process	Process Other	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Industrial Machinery	Cooling	Air-Cooled Chiller	1 kBTU/hr	Existing	21.38	20	\$26.36	3%	at stock turnover	\$0.12	5.23	5.23	Annual Energy Outlook, 2015
Industrial Machinery	Cooling	Water-Cooled Chiller	1 kBTU/hr	Existing	31.90	25	\$12.65	3%	at stock turnover	\$0.04	7.80	7.80	Annual Energy Outlook, 2015
Industrial Machinery	Cooling	RTU	1 kBTU/hr	Existing	3.22	15	\$6.75	11%	at stock turnover	\$0.24	4.23	4.23	Annual Energy Outlook, 2015
Industrial Machinery	Cooling	Air-Source Heat Pump	1 kBTU/hr	Existing	6.21	15	\$21.65	3%	at stock turnover	\$0.14	1.58	1.58	Annual Energy Outlook, 2015
Industrial Machinery	Heating	Air-Source Heat Pump	1 kBTU/hr	Existing	11.39	15	\$21.65	3%	at stock turnover	\$0.14	2.91	2.91	Annual Energy Outlook, 2015
Industrial Machinery	Cooling	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Industrial Machinery	Heating	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Industrial Machinery	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	3%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Industrial Machinery	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	15%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Industrial Machinery	Ventilation	Ventilation	1000 CFM	Existing	2,269.39	20	\$1,219.71	100%	at stock turnover	\$0.05	28.46	28.46	AEG-BEST
Industrial Machinery	Interior Lighting	Screw-in	lamps	Existing	36.23	8	\$4.05	100%	at stock turnover	\$0.00	14.09	20.88	7th Power Plan
Industrial Machinery	Interior Lighting	High-Bay Fixtures	lamps	Existing	191.34	15	\$127.03	100%	at stock turnover	\$0.07	317.26	300.45	Annual Energy Outlook, 2015

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Industrial Machinery	Interior Lighting	Linear Lighting	lamps	Existing	28.60	17	\$54.19	100%	at stock turnover	\$0.14	59.61	57.72	7th Power Plan
Industrial Machinery	Exterior Lighting	Screw-in	lamps	Existing	206.91	8	\$4.05	100%	at stock turnover	\$0.00	4.31	6.39	7th Power Plan
Industrial Machinery	Exterior Lighting	Area Lighting	lamps	Existing	2,507.81	15	\$45.69	100%	at stock turnover	-\$0.01	82.24	79.33	Annual Energy Outlook, 2015
Industrial Machinery	Exterior Lighting	Linear Lighting	lamps	Existing	196.34	17	\$54.19	100%	at stock turnover	\$0.02	16.11	15.60	7th Power Plan
Industrial Machinery	Motors	Pumps	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Industrial Machinery	Motors	Fans & Blowers	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Industrial Machinery	Motors	Compressed Air	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Industrial Machinery	Motors	Material Handling	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Industrial Machinery	Motors	Other Motors	1 unit	Existing	0.00	10	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	N/A
Industrial Machinery	Process	Process Heating	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Industrial Machinery	Process	Process Cooling	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Industrial Machinery	Process	Process Refrigeration	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Industrial Machinery	Process	Process Electrochemical	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Industrial Machinery	Process	Process Other	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Industrial Machinery	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Industrial Machinery	Cooling	Air-Cooled Chiller	1 kBTU/hr	New	18.40	20	\$26.36	3%	at stock turnover	\$0.14	5.71	5.71	Annual Energy Outlook, 2015
Industrial Machinery	Cooling	Water-Cooled Chiller	1 kBTU/hr	New	27.76	25	\$12.65	3%	at stock turnover	\$0.04	7.63	7.63	Annual Energy Outlook, 2015
Industrial Machinery	Cooling	RTU	1 kBTU/hr	New	3.13	15	\$6.75	11%	at stock turnover	\$0.24	4.04	4.04	Annual Energy Outlook, 2015
Industrial Machinery	Cooling	Air-Source Heat Pump	1 kBTU/hr	New	6.04	15	\$21.65	3%	at stock turnover	\$0.14	1.61	1.61	Annual Energy Outlook, 2015

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Industrial Machinery	Heating	Air-Source Heat Pump	1 kBTU/hr	New	10.92	15	\$21.65	3%	at stock turnover	\$0.14	2.92	2.92	Annual Energy Outlook, 2015
Industrial Machinery	Cooling	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Industrial Machinery	Heating	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Industrial Machinery	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	3%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Industrial Machinery	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	15%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Industrial Machinery	Ventilation	Ventilation	1000 CFM	New	1,964.09	20	\$1,219.71	100%	at stock turnover	\$0.06	26.40	26.40	AEG-BEST
Industrial Machinery	Interior Lighting	Screw-in	lamps	New	36.27	8	\$4.05	100%	at stock turnover	\$0.00	12.48	13.00	7th Power Plan
Industrial Machinery	Interior Lighting	High-Bay Fixtures	lamps	New	191.61	15	\$127.03	100%	at stock turnover	\$0.07	316.63	306.56	Annual Energy Outlook, 2015
Industrial Machinery	Interior Lighting	Linear Lighting	lamps	New	28.60	17	\$54.19	100%	at stock turnover	\$0.14	49.70	48.64	7th Power Plan
Industrial Machinery	Exterior Lighting	Screw-in	lamps	New	207.12	8	\$4.05	100%	at stock turnover	\$0.00	3.82	3.98	7th Power Plan
Industrial Machinery	Exterior Lighting	Area Lighting	lamps	New	2,507.81	15	\$45.69	100%	at stock turnover	-\$0.01	81.56	79.82	Annual Energy Outlook, 2015
Industrial Machinery	Exterior Lighting	Linear Lighting	lamps	New	196.34	17	\$54.19	100%	at stock turnover	\$0.02	13.43	13.14	7th Power Plan
Industrial Machinery	Motors	Pumps	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Industrial Machinery	Motors	Fans & Blowers	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Industrial Machinery	Motors	Compressed Air	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Industrial Machinery	Motors	Material Handling	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Industrial Machinery	Motors	Other Motors	1 unit	New	0.00	10	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	N/A
Industrial Machinery	Process	Process Heating	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Industrial Machinery	Process	Process Cooling	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Industrial Machinery	Process	Process Refrigeration	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Industrial Machinery	Process	Process Electrochemical	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Industrial Machinery	Process	Process Other	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Industrial Machinery	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Cooling	Air-Cooled Chiller	1 kBTU/hr	Existing	21.38	20	\$26.36	3%	at stock turnover	\$0.12	0.73	0.73	Annual Energy Outlook, 2015
Lumber Wood Products	Cooling	Water-Cooled Chiller	1 kBTU/hr	Existing	31.90	25	\$12.65	3%	at stock turnover	\$0.04	1.08	1.08	Annual Energy Outlook, 2015
Lumber Wood Products	Cooling	RTU	1 kBTU/hr	Existing	3.22	15	\$6.75	11%	at stock turnover	\$0.24	0.59	0.59	Annual Energy Outlook, 2015
Lumber Wood Products	Cooling	Air-Source Heat Pump	1 kBTU/hr	Existing	6.21	15	\$21.65	3%	at stock turnover	\$0.14	0.22	0.22	Annual Energy Outlook, 2015
Lumber Wood Products	Heating	Air-Source Heat Pump	1 kBTU/hr	Existing	11.39	15	\$21.65	3%	at stock turnover	\$0.14	0.40	0.40	Annual Energy Outlook, 2015
Lumber Wood Products	Cooling	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Lumber Wood Products	Heating	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Lumber Wood Products	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	3%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Lumber Wood Products	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	15%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Lumber Wood Products	Ventilation	Ventilation	1000 CFM	Existing	2,269.39	20	\$1,219.71	100%	at stock turnover	\$0.05	3.95	3.95	AEG-BEST
Lumber Wood Products	Interior Lighting	Screw-in	lamps	Existing	36.23	8	\$4.05	100%	at stock turnover	\$0.00	4.66	6.90	7th Power Plan
Lumber Wood Products	Interior Lighting	High-Bay Fixtures	lamps	Existing	191.34	15	\$127.03	100%	at stock turnover	\$0.07	104.89	99.34	Annual Energy Outlook, 2015
Lumber Wood Products	Interior Lighting	Linear Lighting	lamps	Existing	28.60	17	\$54.19	100%	at stock turnover	\$0.14	19.71	19.09	7th Power Plan
Lumber Wood Products	Exterior Lighting	Screw-in	lamps	Existing	206.91	8	\$4.05	100%	at stock turnover	\$0.00	1.43	2.11	7th Power Plan
Lumber Wood Products	Exterior Lighting	Area Lighting	lamps	Existing	2,507.81	15	\$45.69	100%	at stock turnover	-\$0.01	27.19	26.23	Annual Energy Outlook, 2015

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Lumber Wood Products	Exterior Lighting	Linear Lighting	lamps	Existing	196.34	17	\$54.19	100%	at stock turnover	\$0.02	5.33	5.16	7th Power Plan
Lumber Wood Products	Motors	Pumps	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Motors	Fans & Blowers	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Motors	Compressed Air	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Motors	Material Handling	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Motors	Other Motors	1 unit	Existing	0.00	10	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Process	Process Heating	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Process	Process Cooling	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Process	Process Refrigeration	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Process	Process Electrochemical	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Process	Process Other	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Cooling	Air-Cooled Chiller	1 kBTU/hr	New	18.40	20	\$26.36	3%	at stock turnover	\$0.14	0.79	0.79	Annual Energy Outlook, 2015
Lumber Wood Products	Cooling	Water-Cooled Chiller	1 kBTU/hr	New	27.76	25	\$12.65	3%	at stock turnover	\$0.04	1.06	1.06	Annual Energy Outlook, 2015
Lumber Wood Products	Cooling	RTU	1 kBTU/hr	New	3.13	15	\$6.75	11%	at stock turnover	\$0.24	0.56	0.56	Annual Energy Outlook, 2015
Lumber Wood Products	Cooling	Air-Source Heat Pump	1 kBTU/hr	New	6.04	15	\$21.65	3%	at stock turnover	\$0.14	0.22	0.22	Annual Energy Outlook, 2015
Lumber Wood Products	Heating	Air-Source Heat Pump	1 kBTU/hr	New	10.92	15	\$21.65	3%	at stock turnover	\$0.14	0.40	0.40	Annual Energy Outlook, 2015
Lumber Wood Products	Cooling	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Lumber Wood Products	Heating	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Lumber Wood Products	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	3%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Lumber Wood Products	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	15%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Lumber Wood Products	Ventilation	Ventilation	1000 CFM	New	1,964.09	20	\$1,219.71	100%	at stock turnover	\$0.06	3.66	3.66	AEG-BEST
Lumber Wood Products	Interior Lighting	Screw-in	lamps	New	36.27	8	\$4.05	100%	at stock turnover	\$0.00	4.13	4.30	7th Power Plan
Lumber Wood Products	Interior Lighting	High-Bay Fixtures	lamps	New	191.61	15	\$127.03	100%	at stock turnover	\$0.07	104.69	101.36	Annual Energy Outlook, 2015
Lumber Wood Products	Interior Lighting	Linear Lighting	lamps	New	28.60	17	\$54.19	100%	at stock turnover	\$0.14	16.43	16.08	7th Power Plan
Lumber Wood Products	Exterior Lighting	Screw-in	lamps	New	207.12	8	\$4.05	100%	at stock turnover	\$0.00	1.26	1.32	7th Power Plan
Lumber Wood Products	Exterior Lighting	Area Lighting	lamps	New	2,507.81	15	\$45.69	100%	at stock turnover	-\$0.01	26.97	26.39	Annual Energy Outlook, 2015
Lumber Wood Products	Exterior Lighting	Linear Lighting	lamps	New	196.34	17	\$54.19	100%	at stock turnover	\$0.02	4.44	4.35	7th Power Plan
Lumber Wood Products	Motors	Pumps	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Motors	Fans & Blowers	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Motors	Compressed Air	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Motors	Material Handling	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Motors	Other Motors	1 unit	New	0.00	10	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Process	Process Heating	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Process	Process Cooling	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Process	Process Refrigeration	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Process	Process Electrochemical	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Process	Process Other	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Lumber Wood Products	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Metal Mfg	Cooling	Air-Cooled Chiller	1 kBTU/hr	Existing	21.38	20	\$26.36	3%	at stock turnover	\$0.12	5.05	5.05	Annual Energy Outlook, 2015
Metal Mfg	Cooling	Water-Cooled Chiller	1 kBTU/hr	Existing	31.90	25	\$12.65	3%	at stock turnover	\$0.04	7.54	7.54	Annual Energy Outlook, 2015
Metal Mfg	Cooling	RTU	1 kBTU/hr	Existing	3.22	15	\$6.75	11%	at stock turnover	\$0.24	4.09	4.09	Annual Energy Outlook, 2015
Metal Mfg	Cooling	Air-Source Heat Pump	1 kBTU/hr	Existing	6.21	15	\$21.65	3%	at stock turnover	\$0.14	1.53	1.53	Annual Energy Outlook, 2015
Metal Mfg	Heating	Air-Source Heat Pump	1 kBTU/hr	Existing	11.39	15	\$21.65	3%	at stock turnover	\$0.14	2.81	2.81	Annual Energy Outlook, 2015
Metal Mfg	Cooling	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Metal Mfg	Heating	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Metal Mfg	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	3%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Metal Mfg	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	15%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Metal Mfg	Ventilation	Ventilation	1000 CFM	Existing	2,269.39	20	\$1,219.71	100%	at stock turnover	\$0.05	27.49	27.49	AEG-BEST
Metal Mfg	Interior Lighting	Screw-in	lamps	Existing	36.23	8	\$4.05	100%	at stock turnover	\$0.00	20.13	29.83	7th Power Plan
Metal Mfg	Interior Lighting	High-Bay Fixtures	lamps	Existing	191.34	15	\$127.03	100%	at stock turnover	\$0.07	453.20	429.20	Annual Energy Outlook, 2015
Metal Mfg	Interior Lighting	Linear Lighting	lamps	Existing	28.60	17	\$54.19	100%	at stock turnover	\$0.14	85.15	82.46	7th Power Plan
Metal Mfg	Exterior Lighting	Screw-in	lamps	Existing	206.91	8	\$4.05	100%	at stock turnover	\$0.00	6.16	9.13	7th Power Plan
Metal Mfg	Exterior Lighting	Area Lighting	lamps	Existing	2,507.81	15	\$45.69	100%	at stock turnover	-\$0.01	117.47	113.33	Annual Energy Outlook, 2015
Metal Mfg	Exterior Lighting	Linear Lighting	lamps	Existing	196.34	17	\$54.19	100%	at stock turnover	\$0.02	23.01	22.28	7th Power Plan
Metal Mfg	Motors	Pumps	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Metal Mfg	Motors	Fans & Blowers	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Metal Mfg	Motors	Compressed Air	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Metal Mfg	Motors	Material Handling	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Metal Mfg	Motors	Other Motors	1 unit	Existing	0.00	10	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	N/A
Metal Mfg	Process	Process Heating	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Metal Mfg	Process	Process Cooling	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Metal Mfg	Process	Process Refrigeration	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Metal Mfg	Process	Process Electrochemical	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Metal Mfg	Process	Process Other	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Metal Mfg	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Metal Mfg	Cooling	Air-Cooled Chiller	1 kBTU/hr	New	18.40	20	\$26.36	3%	at stock turnover	\$0.14	5.52	5.52	Annual Energy Outlook, 2015
Metal Mfg	Cooling	Water-Cooled Chiller	1 kBTU/hr	New	27.76	25	\$12.65	3%	at stock turnover	\$0.04	7.38	7.38	Annual Energy Outlook, 2015
Metal Mfg	Cooling	RTU	1 kBTU/hr	New	3.13	15	\$6.75	11%	at stock turnover	\$0.24	3.90	3.90	Annual Energy Outlook, 2015
Metal Mfg	Cooling	Air-Source Heat Pump	1 kBTU/hr	New	6.04	15	\$21.65	3%	at stock turnover	\$0.14	1.56	1.56	Annual Energy Outlook, 2015
Metal Mfg	Heating	Air-Source Heat Pump	1 kBTU/hr	New	10.92	15	\$21.65	3%	at stock turnover	\$0.14	2.82	2.82	Annual Energy Outlook, 2015
Metal Mfg	Cooling	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Metal Mfg	Heating	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Metal Mfg	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	3%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Metal Mfg	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	15%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Metal Mfg	Ventilation	Ventilation	1000 CFM	New	1,964.09	20	\$1,219.71	100%	at stock turnover	\$0.06	25.50	25.50	AEG-BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Metal Mfg	Interior Lighting	Screw-in	lamps	New	36.27	8	\$4.05	100%	at stock turnover	\$0.00	17.83	18.58	7th Power Plan
Metal Mfg	Interior Lighting	High-Bay Fixtures	lamps	New	191.61	15	\$127.03	100%	at stock turnover	\$0.07	452.31	437.92	Annual Energy Outlook, 2015
Metal Mfg	Interior Lighting	Linear Lighting	lamps	New	28.60	17	\$54.19	100%	at stock turnover	\$0.14	71.00	69.48	7th Power Plan
Metal Mfg	Exterior Lighting	Screw-in	lamps	New	207.12	8	\$4.05	100%	at stock turnover	\$0.00	5.46	5.68	7th Power Plan
Metal Mfg	Exterior Lighting	Area Lighting	lamps	New	2,507.81	15	\$45.69	100%	at stock turnover	-\$0.01	116.51	114.02	Annual Energy Outlook, 2015
Metal Mfg	Exterior Lighting	Linear Lighting	lamps	New	196.34	17	\$54.19	100%	at stock turnover	\$0.02	19.19	18.78	7th Power Plan
Metal Mfg	Motors	Pumps	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Metal Mfg	Motors	Fans & Blowers	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Metal Mfg	Motors	Compressed Air	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Metal Mfg	Motors	Material Handling	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Metal Mfg	Motors	Other Motors	1 unit	New	0.00	10	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	N/A
Metal Mfg	Process	Process Heating	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Metal Mfg	Process	Process Cooling	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Metal Mfg	Process	Process Refrigeration	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Metal Mfg	Process	Process Electrochemical	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Metal Mfg	Process	Process Other	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Metal Mfg	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Misc. Mfg	Cooling	Air-Cooled Chiller	1 kBTU/hr	Existing	21.38	20	\$26.36	3%	at stock turnover	\$0.12	9.10	9.10	Annual Energy Outlook, 2015
Misc. Mfg	Cooling	Water-Cooled Chiller	1 kBTU/hr	Existing	31.90	25	\$12.65	3%	at stock turnover	\$0.04	13.58	13.58	Annual Energy Outlook, 2015

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Misc. Mfg	Cooling	RTU	1 kBTU/hr	Existing	3.22	15	\$6.75	11%	at stock turnover	\$0.24	7.37	7.37	Annual Energy Outlook, 2015
Misc. Mfg	Cooling	Air-Source Heat Pump	1 kBTU/hr	Existing	6.21	15	\$21.65	3%	at stock turnover	\$0.14	2.76	2.76	Annual Energy Outlook, 2015
Misc. Mfg	Heating	Air-Source Heat Pump	1 kBTU/hr	Existing	11.39	15	\$21.65	3%	at stock turnover	\$0.14	5.06	5.06	Annual Energy Outlook, 2015
Misc. Mfg	Cooling	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Misc. Mfg	Heating	Geothermal Heat Pump	1 kBTU/hr	Existing	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Misc. Mfg	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	3%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Misc. Mfg	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	15%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Misc. Mfg	Ventilation	Ventilation	1000 CFM	Existing	2,269.39	20	\$1,219.71	100%	at stock turnover	\$0.05	49.56	49.56	AEG-BEST
Misc. Mfg	Interior Lighting	Screw-in	lamps	Existing	36.23	8	\$4.05	100%	at stock turnover	\$0.00	26.42	39.13	7th Power Plan
Misc. Mfg	Interior Lighting	High-Bay Fixtures	lamps	Existing	191.34	15	\$127.03	100%	at stock turnover	\$0.07	594.57	563.08	Annual Energy Outlook, 2015
Misc. Mfg	Interior Lighting	Linear Lighting	lamps	Existing	28.60	17	\$54.19	100%	at stock turnover	\$0.14	111.71	108.18	7th Power Plan
Misc. Mfg	Exterior Lighting	Screw-in	lamps	Existing	206.91	8	\$4.05	100%	at stock turnover	\$0.00	8.08	11.98	7th Power Plan
Misc. Mfg	Exterior Lighting	Area Lighting	lamps	Existing	2,507.81	15	\$45.69	100%	at stock turnover	-\$0.01	154.12	148.68	Annual Energy Outlook, 2015
Misc. Mfg	Exterior Lighting	Linear Lighting	lamps	Existing	196.34	17	\$54.19	100%	at stock turnover	\$0.02	30.19	29.24	7th Power Plan
Misc. Mfg	Motors	Pumps	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Misc. Mfg	Motors	Fans & Blowers	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Misc. Mfg	Motors	Compressed Air	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Misc. Mfg	Motors	Material Handling	1 unit	Existing	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Misc. Mfg	Motors	Other Motors	1 unit	Existing	0.00	10	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Misc. Mfg	Process	Process Heating	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Misc. Mfg	Process	Process Cooling	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Misc. Mfg	Process	Process Refrigeration	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Misc. Mfg	Process	Process Electrochemical	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Misc. Mfg	Process	Process Other	1 unit	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Misc. Mfg	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Misc. Mfg	Cooling	Air-Cooled Chiller	1 kBTU/hr	New	18.40	20	\$26.36	3%	at stock turnover	\$0.14	9.94	9.94	Annual Energy Outlook, 2015
Misc. Mfg	Cooling	Water-Cooled Chiller	1 kBTU/hr	New	27.76	25	\$12.65	3%	at stock turnover	\$0.04	13.29	13.29	Annual Energy Outlook, 2015
Misc. Mfg	Cooling	RTU	1 kBTU/hr	New	3.13	15	\$6.75	11%	at stock turnover	\$0.24	7.03	7.03	Annual Energy Outlook, 2015
Misc. Mfg	Cooling	Air-Source Heat Pump	1 kBTU/hr	New	6.04	15	\$21.65	3%	at stock turnover	\$0.14	2.81	2.81	Annual Energy Outlook, 2015
Misc. Mfg	Heating	Air-Source Heat Pump	1 kBTU/hr	New	10.92	15	\$21.65	3%	at stock turnover	\$0.14	5.08	5.08	Annual Energy Outlook, 2015
Misc. Mfg	Cooling	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Misc. Mfg	Heating	Geothermal Heat Pump	1 kBTU/hr	New	0.00	25	\$26.36	0%	at stock turnover	\$0.00	0.00	0.00	Annual Energy Outlook, 2015
Misc. Mfg	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	3%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Misc. Mfg	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	15%	at stock turnover	\$0.00	0.00	0.00	AEG-BEST
Misc. Mfg	Ventilation	Ventilation	1000 CFM	New	1,964.09	20	\$1,219.71	100%	at stock turnover	\$0.06	45.96	45.96	AEG-BEST
Misc. Mfg	Interior Lighting	Screw-in	lamps	New	36.27	8	\$4.05	100%	at stock turnover	\$0.00	23.40	24.37	7th Power Plan
Misc. Mfg	Interior Lighting	High-Bay Fixtures	lamps	New	191.61	15	\$127.03	100%	at stock turnover	\$0.07	593.39	574.51	Annual Energy Outlook, 2015
Misc. Mfg	Interior Lighting	Linear Lighting	lamps	New	28.60	17	\$54.19	100%	at stock turnover	\$0.14	93.14	91.15	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Misc. Mfg	Exterior Lighting	Screw-in	lamps	New	207.12	8	\$4.05	100%	at stock turnover	\$0.00	7.16	7.46	7th Power Plan
Misc. Mfg	Exterior Lighting	Area Lighting	lamps	New	2,507.81	15	\$45.69	100%	at stock turnover	-\$0.01	152.85	149.59	Annual Energy Outlook, 2015
Misc. Mfg	Exterior Lighting	Linear Lighting	lamps	New	196.34	17	\$54.19	100%	at stock turnover	\$0.02	25.17	24.63	7th Power Plan
Misc. Mfg	Motors	Pumps	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Misc. Mfg	Motors	Fans & Blowers	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Misc. Mfg	Motors	Compressed Air	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Misc. Mfg	Motors	Material Handling	1 unit	New	0.00	10	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Misc. Mfg	Motors	Other Motors	1 unit	New	0.00	10	\$0.00	0%	at stock turnover	\$0.00	0.00	0.00	N/A
Misc. Mfg	Process	Process Heating	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Misc. Mfg	Process	Process Cooling	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Misc. Mfg	Process	Process Refrigeration	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Misc. Mfg	Process	Process Electrochemical	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Misc. Mfg	Process	Process Other	1 unit	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Misc. Mfg	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	N/A
Agriculture	Cooling	Insulation - Ceiling	sqft	Existing	0.12	45	\$1.28	15%	25%	\$0.15	0.52	0.55	Building Energy Simulation Tool
Agriculture	Heating	Insulation - Ceiling	sqft	Existing	0.55	45	\$1.28	15%	25%	\$0.15	2.54	2.61	Building Energy Simulation Tool
Agriculture	Ventilation	Insulation - Ceiling	sqft	Existing	0.02	45	\$1.28	15%	25%	\$0.15	0.37	0.42	Building Energy Simulation Tool
Agriculture	Cooling	Insulation - Ducting	sqft	Existing	0.05	20	\$0.84	15%	25%	\$1.05	0.19	0.21	Building Energy Simulation Tool
Agriculture	Heating	Insulation - Ducting	sqft	Existing	0.02	20	\$0.84	15%	25%	\$1.05	0.11	0.11	Building Energy Simulation Tool

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Agriculture	Ventilation	Insulation - Ducting	sqft	Existing	0.00	20	\$0.84	15%	25%	\$1.05	0.01	0.02	Building Energy Simulation Tool
Agriculture	Cooling	Insulation - Wall Cavity	sqft	Existing	0.00	45	\$0.15	45%	50%	\$0.02	0.00	0.00	Building Energy Simulation Tool
Agriculture	Heating	Insulation - Wall Cavity	sqft	Existing	0.76	45	\$0.15	45%	50%	\$0.02	1.80	1.81	Building Energy Simulation Tool
Agriculture	Ventilation	Insulation - Wall Cavity	sqft	Existing	0.02	45	\$0.15	45%	50%	\$0.02	0.25	0.28	Building Energy Simulation Tool
Agriculture	Cooling	HVAC - Duct Repair and Sealing	sqft	Existing	0.02	18	\$0.00	15%	25%	\$0.00	0.07	0.07	Building Energy Simulation Tool
Agriculture	Heating	HVAC - Duct Repair and Sealing	sqft	Existing	0.05	18	\$0.00	15%	25%	\$0.00	0.25	0.25	Building Energy Simulation Tool
Agriculture	Ventilation	HVAC - Duct Repair and Sealing	sqft	Existing	0.00	18	\$0.00	15%	25%	\$0.00	0.03	0.04	Building Energy Simulation Tool
Agriculture	Cooling	Chiller - Chilled Water Reset	sqft	Existing	0.05	10	\$0.01	15%	45%	\$0.03	0.17	0.18	AEG-BEST
Agriculture	Cooling	Chiller - Chilled Water Variable-Flow System	sqft	Existing	0.25	15	\$0.50	15%	60%	\$0.20	1.32	1.45	AEG-BEST
Agriculture	Cooling	Chiller - Variable Speed Fans	sqft	Existing	0.10	15	\$0.03	15%	75%	\$0.04	0.68	0.72	New Jersey TRM
Agriculture	Cooling	HVAC - Economizer	sqft	Existing	0.17	10	\$0.25	18%	30%	\$0.19	0.64	0.70	AEG-BEST
Agriculture	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.25	15%	35%	\$10.61	0.07	0.09	7th Power Plan
Agriculture	Cooling	Destratification Fans (HVLS)	sqft	Existing	0.16	15	\$0.63	15%	50%	\$0.05	2.89	3.07	AEG Research
Agriculture	Heating	Destratification Fans (HVLS)	sqft	Existing	1.39	15	\$0.63	15%	50%	\$0.05	27.86	28.04	AEG Research
Agriculture	Cooling	RTU - Maintenance	sqft	Existing	0.08	3	\$0.07	15%	75%	\$0.28	1.20	1.35	AEG Research
Agriculture	Cooling	Thermostat - WiFi/Interactive	sqft	Existing	0.29	5	\$0.66	5%	15%	\$0.09	1.18	1.28	7th Power Plan
Agriculture	Heating	Thermostat - WiFi/Interactive	sqft	Existing	1.29	5	\$0.66	5%	15%	\$0.09	5.97	6.15	7th Power Plan
Agriculture	Ventilation	Thermostat - WiFi/Interactive	sqft	Existing	0.04	5	\$0.66	5%	15%	\$0.09	0.86	0.98	7th Power Plan
Agriculture	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.40	15	\$0.35	3%	17%	\$0.07	5.93	7.15	7th Power Plan
Agriculture	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.55	15	\$0.58	3%	17%	\$0.09	8.14	9.92	7th Power Plan
Agriculture	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	Existing	0.02	15	\$0.00	1%	2%	\$0.01	0.07	0.10	7th Power Plan

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Agriculture	Interior Lighting	Interior Lighting - Timeclocks and Timers	sqft	Existing	0.00	8	\$0.00	7%	7%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Agriculture	Interior Lighting	Interior Lighting - Skylights	sqft	Existing	0.00	15	\$1.01	15%	23%	\$0.00	0.00	0.00	AEG Research
Agriculture	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	sqft	Existing	0.03	16	\$1.81	5%	40%	\$4.11	2.33	3.17	7th Power Plan
Agriculture	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	Existing	0.04	11	\$0.00	15%	50%	\$0.01	2.45	3.16	Illinois TRM
Agriculture	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	sqft	Existing	0.05	8	\$0.03	15%	25%	\$0.08	3.00	4.08	7th Power Plan
Agriculture	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	Existing	0.03	8	\$0.02	33%	60%	\$0.08	4.17	5.83	Pacific Gas and Electric Research
Agriculture	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	Existing	0.03	7	\$1.19	15%	30%	\$4.54	2.61	3.86	AEG Research
Agriculture	Process	Process - Conductivity Controls	employee	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Agriculture	Process	Process - Timers and Controls	employee	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Agriculture	Motors	Process - Timers and Controls	employee	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Agriculture	Process	Refrigeration - Floating Head Pressure	employee	Existing	332.45	15	\$326.00	20%	50%	\$0.11	20.87	21.04	RTF Workbook
Agriculture	Process	Refrigeration - System Optimization	employee	Existing	537.10	15	\$229.56	20%	50%	\$0.05	33.89	33.89	AEG Research
Agriculture	Motors	Pumping System - Equipment Upgrade	employee	Existing	193.48	10	\$28.32	9%	38%	\$0.05	11.50	11.81	7th Power Plan
Agriculture	Motors	Pumping System - System Optimization	employee	Existing	144.03	12	\$43.17	9%	38%	\$0.04	8.38	8.64	UNIDO Study on Industrial Energy Efficiency
Agriculture	Motors	Pumping System - Variable Speed Drive	employee	Existing	143.06	10	\$44.91	9%	38%	\$0.04	8.29	8.59	UNIDO Study on Industrial Energy Efficiency
Agriculture	Motors	Fan System - Equipment Upgrade	employee	Existing	673.95	10	\$66.54	9%	38%	\$0.05	39.79	40.18	UNIDO Study on Industrial Energy Efficiency
Agriculture	Motors	Fan System - Flow Optimization	employee	Existing	790.44	10	\$110.09	9%	38%	\$0.02	46.45	47.21	UNIDO Study on Industrial Energy Efficiency
Agriculture	Motors	Fan System - Variable Speed Drive	employee	Existing	1,168.60	10	\$553.98	9%	38%	\$0.06	67.02	70.48	UNIDO Study on Industrial Energy Efficiency
Agriculture	Motors	Compressed Air - Equipment Upgrade	employee	Existing	461.27	10	\$33.56	17%	50%	\$0.04	32.53	32.53	7th Power Plan

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Agriculture	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	Existing	0.00	15	\$0.00	16%	38%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Agriculture	Motors	Compressed Air - Refrigerated Cycling Dryers	employee	Existing	0.00	10	\$0.00	16%	30%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Agriculture	Motors	Compressed Air - System Controls	employee	Existing	101.43	10	\$24.00	9%	38%	\$0.03	5.99	6.21	UNIDO Study on Industrial Energy Efficiency
Agriculture	Motors	Compressed Air - Leak Management Program	employee	Existing	261.85	10	\$24.12	18%	75%	\$0.04	31.55	31.72	7th Power Plan
Agriculture	Motors	Compressed Air - Variable Speed Drive	employee	Existing	186.80	15	\$147.13	26%	45%	\$0.08	7.28	7.68	UNIDO Study on Industrial Energy Efficiency
Agriculture	Motors	Compressed Air - Low Pressure-Drop Filters	employee	Existing	6.23	10	\$2.27	17%	50%	\$0.05	0.42	0.45	Illinois TRM
Agriculture	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	Existing	38.12	10	\$7.36	17%	50%	\$0.03	2.63	2.72	UNIDO Study on Industrial Energy Efficiency
Agriculture	Motors	Compressed Air - Outside Air Intake	employee	Existing	0.00	20	\$0.00	17%	50%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Agriculture	Motors	Compressed Air - Receiver Capacity Addition	employee	Existing	37.86	15	\$20.23	17%	50%	\$0.06	2.60	2.71	UNIDO Study on Industrial Energy Efficiency
Agriculture	Motors	Material Handling - Variable Speed Drive	employee	Existing	1,365.07	10	\$487.28	25%	45%	\$0.05	55.46	57.56	7th Power Plan
Agriculture	Motors	Motors - Green Rewind (<100 HP)	employee	Existing	34.28	10	\$14.87	10%	50%	\$0.06	11.05	11.60	7th Power Plan
Agriculture	Motors	Motors - Green Rewind (100 HP+)	employee	Existing	19.34	10	\$5.28	6%	25%	\$0.04	2.99	3.10	7th Power Plan
Agriculture	Motors	Switch from Belt Drive to Direct Drive	employee	Existing	293.26	12	\$65.29	16%	25%	\$0.03	22.82	23.42	2015-mdu-irp-report---volume-iii.pdf
Agriculture	Motors	Motors - Synchronous Belts	employee	Existing	77.59	10	\$19.64	16%	36%	\$0.03	12.83	13.31	7th Power Plan
Agriculture	Miscellaneous	Agriculture - Engine Block Timer	employee	Existing	1,072.11	3	\$13.23	15%	33%	\$0.00	0.00	59.82	Vermont TRM
Agriculture	Motors	Agriculture - Live Stock Waterer	employee	Existing	462.66	10	\$249.44	15%	17%	\$0.07	1.85	1.96	Ontario Power TRM
Agriculture	Process	Dairy - Milk Precoolers	employee	Existing	2,217.36	15	\$1,037.36	15%	15%	\$0.05	1.84	1.85	Ontario Power TRM
Agriculture	Process	Clean Room: Change Filter Strategy	employee	Existing	34.27	15	\$0.25	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Agriculture	Process	Clean Room: Chiller Optimize	employee	Existing	663.44	15	\$61.43	0%	0%	\$0.01	0.00	0.00	7th Power Plan

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Agriculture	Process	Clean Room: Clean Room HVAC	employee	Existing	402.82	15	\$74.15	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Agriculture	Process	Elec Chip Fab: Solidstate Chiller	employee	Existing	398.94	15	\$232.90	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Agriculture	Process	Elec Chip Fab: Eliminate Exhaust	employee	Existing	4.28	15	\$0.91	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Agriculture	Process	Elec Chip Fab: Exhaust Injector	employee	Existing	8.48	15	\$4.39	0%	0%	\$0.06	0.00	0.00	7th Power Plan
Agriculture	Process	Elec Chip Fab: Reduce Gas Pressure	employee	Existing	8.57	15	\$0.09	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Agriculture	Motors	Panel: Hydraulic Press	employee	Existing	2,052.26	10	\$486.99	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Agriculture	Motors	Wood: Replace Pneumatic Conveyor	employee	Existing	2,212.25	10	\$36.47	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Agriculture	Process	Metal: New Arc Furnace	employee	Existing	1,196.94	10	\$125.65	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Agriculture	Process	Paper: Premium Control Large Material	employee	Existing	443.68	10	\$225.41	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Agriculture	Process	Paper: Efficient Pulp Screen	employee	Existing	360.90	10	\$74.25	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Agriculture	Process	Kraft: Effluent Treatment System	employee	Existing	360.90	10	\$30.44	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Agriculture	Motors	Kraft: Efficient Agitator	employee	Existing	3,764.85	10	\$363.40	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Agriculture	Process	Mech Pulp: Premium Process	employee	Existing	4.00	5	\$0.52	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Agriculture	Motors	Mech Pulp: Refiner Plate Improvement	employee	Existing	31.60	1	\$1.39	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Agriculture	Cooling	Transformer - High Efficiency	employee	Existing	27.85	10	\$79.14	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Agriculture	Heating	Transformer - High Efficiency	employee	Existing	169.60	10	\$79.14	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Agriculture	Ventilation	Transformer - High Efficiency	employee	Existing	2.55	10	\$79.14	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Agriculture	Interior Lighting	Transformer - High Efficiency	employee	Existing	22.67	10	\$79.14	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Agriculture	Exterior Lighting	Transformer - High Efficiency	employee	Existing	4.81	10	\$79.14	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Agriculture	Motors	Transformer - High Efficiency	employee	Existing	224.87	10	\$79.14	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Agriculture	Process	Transformer - High Efficiency	employee	Existing	177.69	10	\$79.14	15%	15%	\$0.02	0.00	0.00	7th Power Plan

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Agriculture	Miscellaneous	Transformer - High Efficiency	employee	Existing	37.99	10	\$79.14	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Agriculture	Cooling	Strategic Energy Management	employee	Existing	78.22	3	\$486.06	0%	5%	\$0.08	0.13	0.15	AEG Research
Agriculture	Heating	Strategic Energy Management	employee	Existing	486.77	3	\$486.06	0%	5%	\$0.08	0.95	0.98	AEG Research
Agriculture	Ventilation	Strategic Energy Management	employee	Existing	7.30	3	\$486.06	0%	5%	\$0.08	0.07	0.09	AEG Research
Agriculture	Interior Lighting	Strategic Energy Management	employee	Existing	64.70	3	\$486.06	0%	5%	\$0.08	0.58	0.74	AEG Research
Agriculture	Exterior Lighting	Strategic Energy Management	employee	Existing	13.80	3	\$486.06	0%	5%	\$0.08	0.12	0.16	AEG Research
Agriculture	Motors	Strategic Energy Management	employee	Existing	644.43	3	\$486.06	0%	5%	\$0.08	6.10	6.45	AEG Research
Agriculture	Process	Strategic Energy Management	employee	Existing	509.11	3	\$486.06	0%	5%	\$0.08	5.00	5.09	AEG Research
Agriculture	Miscellaneous	Strategic Energy Management	employee	Existing	108.76	3	\$486.06	0%	5%	\$0.08	1.33	1.13	AEG Research
Agriculture	Interior Lighting	Commissioning	employee	Existing	74.59	3	\$709.37	0%	0%	\$0.15	0.00	0.00	AEG Research
Agriculture	Exterior Lighting	Commissioning	employee	Existing	15.91	3	\$709.37	0%	0%	\$0.15	0.00	0.00	AEG Research
Agriculture	Motors	Commissioning	employee	Existing	742.83	3	\$709.37	0%	0%	\$0.15	0.00	0.00	AEG Research
Agriculture	Process	Commissioning	employee	Existing	586.83	3	\$709.37	0%	0%	\$0.15	0.00	0.00	AEG Research
Agriculture	Miscellaneous	Commissioning	employee	Existing	125.35	3	\$709.37	0%	0%	\$0.15	0.00	0.00	AEG Research
Agriculture	Interior Lighting	Retrocommissioning	employee	Existing	75.55	3	\$450.33	5%	39%	\$0.10	4.67	5.87	AEG Research
Agriculture	Exterior Lighting	Retrocommissioning	employee	Existing	16.03	3	\$450.33	5%	39%	\$0.10	0.97	1.28	AEG Research
Agriculture	Motors	Retrocommissioning	employee	Existing	749.55	3	\$450.33	5%	39%	\$0.10	48.64	51.03	AEG Research
Agriculture	Process	Retrocommissioning	employee	Existing	592.28	3	\$450.33	5%	39%	\$0.10	39.89	40.24	AEG Research
Agriculture	Miscellaneous	Retrocommissioning	employee	Existing	126.63	3	\$450.33	5%	39%	\$0.10	10.63	8.93	AEG Research
Agriculture	Motors	Municipal Sewage Treatment	employee	Existing	25.40	12	\$14.24	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Agriculture	Motors	Municipal Water Supply Treatment	employee	Existing	0.00	12	\$0.00	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Agriculture	Cooling	Insulation - Ceiling	sqft	New	0.11	45	\$1.28	15%	25%	\$0.16	0.21	0.22	Building Energy Simulation Tool

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Agriculture	Heating	Insulation - Ceiling	sqft	New	0.52	45	\$1.28	15%	25%	\$0.16	1.07	1.07	Building Energy Simulation Tool
Agriculture	Ventilation	Insulation - Ceiling	sqft	New	0.01	45	\$1.28	15%	25%	\$0.16	0.13	0.14	Building Energy Simulation Tool
Agriculture	Cooling	Insulation - Ducting	sqft	New	0.04	20	\$0.84	15%	25%	\$1.13	0.08	0.08	Building Energy Simulation Tool
Agriculture	Heating	Insulation - Ducting	sqft	New	0.02	20	\$0.84	15%	25%	\$1.13	0.04	0.05	Building Energy Simulation Tool
Agriculture	Ventilation	Insulation - Ducting	sqft	New	0.00	20	\$0.84	15%	25%	\$1.13	0.01	0.01	Building Energy Simulation Tool
Agriculture	Cooling	Insulation - Wall Cavity	sqft	New	0.00	45	\$0.15	45%	50%	\$0.02	0.00	0.00	Building Energy Simulation Tool
Agriculture	Heating	Insulation - Wall Cavity	sqft	New	0.71	45	\$0.15	45%	50%	\$0.02	0.73	0.73	Building Energy Simulation Tool
Agriculture	Ventilation	Insulation - Wall Cavity	sqft	New	0.01	45	\$0.15	45%	50%	\$0.02	0.09	0.09	Building Energy Simulation Tool
Agriculture	Cooling	HVAC - Duct Repair and Sealing	sqft	New	0.01	18	\$0.00	15%	25%	\$0.00	0.03	0.03	Building Energy Simulation Tool
Agriculture	Heating	HVAC - Duct Repair and Sealing	sqft	New	0.05	18	\$0.00	15%	25%	\$0.00	0.10	0.10	Building Energy Simulation Tool
Agriculture	Ventilation	HVAC - Duct Repair and Sealing	sqft	New	0.00	18	\$0.00	15%	25%	\$0.00	0.01	0.01	Building Energy Simulation Tool
Agriculture	Cooling	Chiller - Chilled Water Reset	sqft	New	0.04	10	\$0.01	15%	45%	\$0.03	0.02	0.02	AEG-BEST
Agriculture	Cooling	Chiller - Chilled Water Variable-Flow System	sqft	New	0.20	15	\$0.50	15%	60%	\$0.24	0.26	0.27	AEG-BEST
Agriculture	Cooling	Chiller - Variable Speed Fans	sqft	New	0.07	15	\$0.03	15%	75%	\$0.04	0.13	0.13	New Jersey TRM
Agriculture	Cooling	HVAC - Economizer	sqft	New	0.15	10	\$0.25	18%	30%	\$0.21	0.09	0.09	AEG-BEST
Agriculture	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.25	15%	35%	\$12.70	0.01	0.02	7th Power Plan
Agriculture	Cooling	Destratification Fans (HVLS)	sqft	New	0.14	15	\$0.63	15%	50%	\$0.05	0.64	0.66	AEG Research
Agriculture	Heating	Destratification Fans (HVLS)	sqft	New	1.30	15	\$0.63	15%	50%	\$0.05	6.23	6.25	AEG Research
Agriculture	Cooling	RTU - Maintenance	sqft	New	0.07	3	\$0.07	15%	75%	\$0.29	0.02	0.02	AEG Research
Agriculture	Cooling	Thermostat - WiFi/Interactive	sqft	New	0.26	5	\$0.66	5%	15%	\$0.09	0.08	0.09	7th Power Plan
Agriculture	Heating	Thermostat - WiFi/Interactive	sqft	New	1.23	5	\$0.66	5%	15%	\$0.09	0.42	0.42	7th Power Plan

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Agriculture	Ventilation	Thermostat - WiFi/Interactive	sqft	New	0.02	5	\$0.66	5%	15%	\$0.09	0.05	0.06	7th Power Plan
Agriculture	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.31	15	\$0.35	22%	41%	\$0.07	6.08	7.10	7th Power Plan
Agriculture	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.42	15	\$0.58	22%	41%	\$0.09	8.28	9.75	7th Power Plan
Agriculture	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	New	0.02	15	\$0.00	1%	2%	\$0.01	0.01	0.02	7th Power Plan
Agriculture	Interior Lighting	Interior Lighting - Timeclocks and Timers	sqft	New	0.00	8	\$0.00	7%	7%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Agriculture	Interior Lighting	Interior Lighting - Skylights	sqft	New	0.00	15	\$1.01	18%	24%	\$0.00	0.00	0.00	AEG Research
Agriculture	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	sqft	New	0.03	16	\$1.81	5%	40%	\$4.11	0.53	0.67	7th Power Plan
Agriculture	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	New	0.03	11	\$0.00	15%	50%	\$0.01	0.36	0.47	Illinois TRM
Agriculture	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	sqft	New	0.04	8	\$0.03	15%	25%	\$0.08	0.29	0.41	7th Power Plan
Agriculture	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	New	0.02	8	\$0.02	44%	60%	\$0.08	0.25	0.35	Pacific Gas and Electric Research
Agriculture	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	New	0.02	7	\$1.19	15%	30%	\$4.56	0.24	0.34	AEG Research
Agriculture	Process	Process - Conductivity Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Agriculture	Process	Process - Timers and Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Agriculture	Motors	Process - Timers and Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Agriculture	Process	Refrigeration - Floating Head Pressure	employee	New	334.21	15	\$230.39	20%	50%	\$0.08	4.78	4.78	RTF Workbook
Agriculture	Process	Refrigeration - System Optimization	employee	New	537.10	15	\$80.56	20%	50%	\$0.02	7.68	7.68	AEG Research
Agriculture	Motors	Pumping System - Equipment Upgrade	employee	New	196.71	10	\$28.32	9%	38%	\$0.05	1.70	1.69	7th Power Plan
Agriculture	Motors	Pumping System - System Optimization	employee	New	147.03	12	\$43.17	9%	38%	\$0.04	2.01	2.00	UNIDO Study on Industrial Energy Efficiency
Agriculture	Motors	Pumping System - Variable Speed Drive	employee	New	146.59	10	\$44.91	9%	38%	\$0.04	1.73	1.73	UNIDO Study on Industrial Energy Efficiency

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Agriculture	Motors	Fan System - Equipment Upgrade	employee	New	679.25	10	\$66.54	9%	38%	\$0.05	8.01	8.00	UNIDO Study on Industrial Energy Efficiency
Agriculture	Motors	Fan System - Flow Optimization	employee	New	799.86	10	\$110.09	9%	38%	\$0.02	9.44	9.42	UNIDO Study on Industrial Energy Efficiency
Agriculture	Motors	Fan System - Variable Speed Drive	employee	New	1,207.94	10	\$553.98	9%	38%	\$0.06	14.30	14.24	UNIDO Study on Industrial Energy Efficiency
Agriculture	Motors	Compressed Air - Equipment Upgrade	employee	New	461.27	10	\$33.56	17%	50%	\$0.04	4.62	4.62	7th Power Plan
Agriculture	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	New	0.00	15	\$0.00	16%	38%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Agriculture	Motors	Compressed Air - Refrigerated Cycling Dryers	employee	New	0.00	10	\$0.00	16%	30%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Agriculture	Motors	Compressed Air - System Controls	employee	New	103.63	10	\$24.00	9%	38%	\$0.03	0.89	0.89	UNIDO Study on Industrial Energy Efficiency
Agriculture	Motors	Compressed Air - Leak Management Program	employee	New	262.89	10	\$24.12	18%	75%	\$0.04	4.52	4.52	7th Power Plan
Agriculture	Motors	Compressed Air - Variable Speed Drive	employee	New	192.70	15	\$147.13	26%	45%	\$0.08	1.77	1.76	UNIDO Study on Industrial Energy Efficiency
Agriculture	Motors	Compressed Air - Low Pressure-Drop Filters	employee	New	6.42	10	\$2.27	17%	50%	\$0.05	0.06	0.06	Illinois TRM
Agriculture	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	New	38.90	10	\$7.36	17%	50%	\$0.03	0.39	0.39	UNIDO Study on Industrial Energy Efficiency
Agriculture	Motors	Compressed Air - Outside Air Intake	employee	New	0.00	20	\$0.00	17%	50%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Agriculture	Motors	Compressed Air - Receiver Capacity Addition	employee	New	38.79	15	\$20.23	17%	50%	\$0.06	0.62	0.62	UNIDO Study on Industrial Energy Efficiency
Agriculture	Motors	Material Handling - Variable Speed Drive	employee	New	1,399.98	10	\$487.28	25%	45%	\$0.05	11.62	11.57	7th Power Plan
Agriculture	Motors	Motors - Green Rewind (<100 HP)	employee	New	35.40	10	\$14.87	10%	50%	\$0.06	2.35	2.34	7th Power Plan
Agriculture	Motors	Motors - Green Rewind (100 HP+)	employee	New	19.81	10	\$5.28	6%	25%	\$0.04	0.62	0.62	7th Power Plan
Agriculture	Motors	Switch from Belt Drive to Direct Drive	employee	New	298.60	12	\$65.29	16%	25%	\$0.03	5.43	5.41	2015-mdu-irp-report---volume-iii.pdf
Agriculture	Motors	Motors - Synchronous Belts	employee	New	79.32	10	\$19.64	16%	36%	\$0.03	1.92	1.91	7th Power Plan
Agriculture	Miscellaneous	Agriculture - Engine Block Timer	employee	New	1,072.11	3	\$13.23	15%	33%	\$0.00	0.00	2.30	Vermont TRM

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Agriculture	Motors	Agriculture - Live Stock Waterer	employee	New	481.65	10	\$249.44	15%	17%	\$0.07	0.40	0.40	Ontario Power TRM
Agriculture	Process	Dairy - Milk Precoolers	employee	New	2,228.62	15	\$1,037.36	15%	15%	\$0.05	0.51	0.51	Ontario Power TRM
Agriculture	Process	Clean Room: Change Filter Strategy	employee	New	34.27	15	\$0.25	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Agriculture	Process	Clean Room: Chiller Optimize	employee	New	663.44	15	\$61.43	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Agriculture	Process	Clean Room: Clean Room HVAC	employee	New	401.15	15	\$74.15	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Agriculture	Process	Elec Chip Fab: Solidstate Chiller	employee	New	401.05	15	\$232.90	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Agriculture	Process	Elec Chip Fab: Eliminate Exhaust	employee	New	4.27	15	\$0.91	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Agriculture	Process	Elec Chip Fab: Exhaust Injector	employee	New	8.53	15	\$4.39	0%	0%	\$0.06	0.00	0.00	7th Power Plan
Agriculture	Process	Elec Chip Fab: Reduce Gas Pressure	employee	New	8.57	15	\$0.09	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Agriculture	Motors	Panel: Hydraulic Press	employee	New	2,098.24	10	\$486.99	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Agriculture	Motors	Wood: Replace Pneumatic Conveyor	employee	New	2,212.25	10	\$36.47	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Agriculture	Process	Metal: New Arc Furnace	employee	New	1,191.97	10	\$125.65	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Agriculture	Process	Paper: Premium Control Large Material	employee	New	447.43	10	\$225.41	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Agriculture	Process	Paper: Efficient Pulp Screen	employee	New	359.40	10	\$74.25	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Agriculture	Process	Kraft: Effluent Treatment System	employee	New	359.40	10	\$30.44	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Agriculture	Motors	Kraft: Efficient Agitator	employee	New	3,780.81	10	\$363.40	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Agriculture	Process	Mech Pulp: Premium Process	employee	New	4.01	5	\$0.52	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Agriculture	Motors	Mech Pulp: Refiner Plate Improvement	employee	New	32.91	1	\$1.39	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Agriculture	Cooling	Transformer - High Efficiency	employee	New	24.86	10	\$77.81	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Agriculture	Heating	Transformer - High Efficiency	employee	New	162.07	10	\$77.81	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Agriculture	Ventilation	Transformer - High Efficiency	employee	New	1.44	10	\$77.81	15%	15%	\$0.02	0.00	0.00	7th Power Plan

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Agriculture	Interior Lighting	Transformer - High Efficiency	employee	New	16.89	10	\$77.81	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Agriculture	Exterior Lighting	Transformer - High Efficiency	employee	New	3.49	10	\$77.81	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Agriculture	Motors	Transformer - High Efficiency	employee	New	234.14	10	\$77.81	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Agriculture	Process	Transformer - High Efficiency	employee	New	179.19	10	\$77.81	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Agriculture	Miscellaneous	Transformer - High Efficiency	employee	New	37.84	10	\$77.81	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Agriculture	Cooling	Strategic Energy Management	employee	New	70.82	3	\$477.91	0%	5%	\$0.08	0.00	0.00	AEG Research
Agriculture	Heating	Strategic Energy Management	employee	New	467.07	3	\$477.91	0%	5%	\$0.08	0.02	0.02	AEG Research
Agriculture	Ventilation	Strategic Energy Management	employee	New	4.15	3	\$477.91	0%	5%	\$0.08	0.00	0.00	AEG Research
Agriculture	Interior Lighting	Strategic Energy Management	employee	New	48.68	3	\$477.91	0%	5%	\$0.08	0.01	0.01	AEG Research
Agriculture	Exterior Lighting	Strategic Energy Management	employee	New	10.08	3	\$477.91	0%	5%	\$0.08	0.00	0.00	AEG Research
Agriculture	Motors	Strategic Energy Management	employee	New	676.41	3	\$477.91	0%	5%	\$0.08	0.12	0.12	AEG Research
Agriculture	Process	Strategic Energy Management	employee	New	517.66	3	\$477.91	0%	5%	\$0.08	0.09	0.09	AEG Research
Agriculture	Miscellaneous	Strategic Energy Management	employee	New	109.32	3	\$477.91	0%	5%	\$0.08	0.02	0.02	AEG Research
Agriculture	Interior Lighting	Commissioning	employee	New	56.15	3	\$713.80	5%	39%	\$0.15	0.07	0.11	AEG Research
Agriculture	Exterior Lighting	Commissioning	employee	New	11.63	3	\$713.80	5%	39%	\$0.15	0.02	0.02	AEG Research
Agriculture	Motors	Commissioning	employee	New	780.31	3	\$713.80	5%	39%	\$0.15	0.92	0.93	AEG Research
Agriculture	Process	Commissioning	employee	New	597.18	3	\$713.80	5%	39%	\$0.15	0.70	0.70	AEG Research
Agriculture	Miscellaneous	Commissioning	employee	New	126.12	3	\$713.80	5%	39%	\$0.15	0.18	0.13	AEG Research
Agriculture	Interior Lighting	Retrocommissioning	employee	New	56.30	3	\$453.13	0%	0%	\$0.10	0.00	0.00	AEG Research
Agriculture	Exterior Lighting	Retrocommissioning	employee	New	11.63	3	\$453.13	0%	0%	\$0.10	0.00	0.00	AEG Research
Agriculture	Motors	Retrocommissioning	employee	New	780.47	3	\$453.13	0%	0%	\$0.10	0.00	0.00	AEG Research

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Agriculture	Process	Retrocommissioning	employee	New	597.30	3	\$453.13	0%	0%	\$0.10	0.00	0.00	AEG Research
Agriculture	Miscellaneous	Retrocommissioning	employee	New	126.14	3	\$453.13	0%	0%	\$0.10	0.00	0.00	AEG Research
Agriculture	Motors	Municipal Sewage Treatment	employee	New	26.23	12	\$14.24	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Agriculture	Motors	Municipal Water Supply Treatment	employee	New	0.00	12	\$0.00	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Mining and Extraction	Cooling	Insulation - Ceiling	sqft	Existing	0.12	45	\$1.28	15%	25%	\$0.15	109.90	117.05	Building Energy Simulation Tool
Mining and Extraction	Heating	Insulation - Ceiling	sqft	Existing	0.55	45	\$1.28	15%	25%	\$0.15	542.39	557.19	Building Energy Simulation Tool
Mining and Extraction	Ventilation	Insulation - Ceiling	sqft	Existing	0.02	45	\$1.28	15%	25%	\$0.15	78.28	89.38	Building Energy Simulation Tool
Mining and Extraction	Cooling	Insulation - Ducting	sqft	Existing	0.05	20	\$0.84	15%	25%	\$1.05	40.20	44.04	Building Energy Simulation Tool
Mining and Extraction	Heating	Insulation - Ducting	sqft	Existing	0.02	20	\$0.84	15%	25%	\$1.05	22.51	23.36	Building Energy Simulation Tool
Mining and Extraction	Ventilation	Insulation - Ducting	sqft	Existing	0.00	20	\$0.84	15%	25%	\$1.05	3.20	3.72	Building Energy Simulation Tool
Mining and Extraction	Cooling	Insulation - Wall Cavity	sqft	Existing	0.00	45	\$0.15	45%	50%	\$0.02	0.89	0.93	Building Energy Simulation Tool
Mining and Extraction	Heating	Insulation - Wall Cavity	sqft	Existing	0.76	45	\$0.15	45%	50%	\$0.02	385.13	386.10	Building Energy Simulation Tool
Mining and Extraction	Ventilation	Insulation - Wall Cavity	sqft	Existing	0.02	45	\$0.15	45%	50%	\$0.02	52.54	59.78	Building Energy Simulation Tool
Mining and Extraction	Cooling	HVAC - Duct Repair and Sealing	sqft	Existing	0.02	18	\$0.00	15%	25%	\$0.00	14.73	15.31	Building Energy Simulation Tool
Mining and Extraction	Heating	HVAC - Duct Repair and Sealing	sqft	Existing	0.05	18	\$0.00	15%	25%	\$0.00	54.29	54.41	Building Energy Simulation Tool
Mining and Extraction	Ventilation	HVAC - Duct Repair and Sealing	sqft	Existing	0.00	18	\$0.00	15%	25%	\$0.00	7.41	8.43	Building Energy Simulation Tool
Mining and Extraction	Cooling	Chiller - Chilled Water Reset	sqft	Existing	0.05	10	\$0.01	15%	45%	\$0.03	35.23	37.79	AEG-BEST
Mining and Extraction	Cooling	Chiller - Chilled Water Variable-Flow System	sqft	Existing	0.25	15	\$0.50	15%	60%	\$0.20	278.89	308.24	AEG-BEST
Mining and Extraction	Cooling	Chiller - Variable Speed Fans	sqft	Existing	0.09	15	\$0.03	15%	75%	\$0.04	143.90	153.57	New Jersey TRM
Mining and Extraction	Cooling	HVAC - Economizer	sqft	Existing	5.31	10	\$0.25	18%	30%	\$0.01	147.32	155.45	AEG-BEST

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Mining and Extraction	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.25	15%	35%	\$10.61	15.89	19.38	7th Power Plan
Mining and Extraction	Cooling	Destratification Fans (HVLS)	sqft	Existing	0.16	15	\$0.63	15%	50%	\$0.05	611.92	653.42	AEG Research
Mining and Extraction	Heating	Destratification Fans (HVLS)	sqft	Existing	1.39	15	\$0.63	15%	50%	\$0.05	5,955.53	5,992.80	AEG Research
Mining and Extraction	Cooling	RTU - Maintenance	sqft	Existing	0.08	3	\$0.07	15%	75%	\$0.28	256.07	288.52	AEG Research
Mining and Extraction	Cooling	Thermostat - WiFi/Interactive	sqft	Existing	0.29	5	\$0.66	5%	15%	\$0.09	252.93	272.53	7th Power Plan
Mining and Extraction	Heating	Thermostat - WiFi/Interactive	sqft	Existing	1.29	5	\$0.66	5%	15%	\$0.09	1,275.56	1,314.23	7th Power Plan
Mining and Extraction	Ventilation	Thermostat - WiFi/Interactive	sqft	Existing	0.04	5	\$0.66	5%	15%	\$0.09	183.23	210.39	7th Power Plan
Mining and Extraction	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	11.89	15	\$0.35	7%	33%	\$0.00	3,676.65	4,561.83	7th Power Plan
Mining and Extraction	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	17.04	15	\$0.58	7%	33%	\$0.00	5,454.65	6,554.24	7th Power Plan
Mining and Extraction	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	Existing	0.02	15	\$0.00	1%	2%	\$0.01	21.61	30.57	7th Power Plan
Mining and Extraction	Interior Lighting	Interior Lighting - Timeclocks and Timers	sqft	Existing	0.00	8	\$0.00	7%	7%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Mining and Extraction	Interior Lighting	Interior Lighting - Skylights	sqft	Existing	0.00	15	\$1.01	15%	23%	\$0.00	0.00	0.00	AEG Research
Mining and Extraction	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	sqft	Existing	0.03	16	\$1.81	5%	40%	\$4.11	723.23	1,020.46	7th Power Plan
Mining and Extraction	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	Existing	0.03	11	\$0.00	15%	50%	\$0.01	722.75	1,004.11	Illinois TRM
Mining and Extraction	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	sqft	Existing	0.05	8	\$0.03	15%	25%	\$0.08	976.29	1,327.61	7th Power Plan
Mining and Extraction	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	Existing	0.03	8	\$0.02	33%	60%	\$0.08	1,358.82	1,898.63	Pacific Gas and Electric Research
Mining and Extraction	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	Existing	0.03	7	\$1.19	15%	30%	\$4.54	854.40	1,256.57	AEG Research
Mining and Extraction	Process	Process - Conductivity Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Mining and Extraction	Process	Process - Timers and Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A

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Mining and Extraction	Motors	Process - Timers and Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Mining and Extraction	Process	Refrigeration - Floating Head Pressure	employee	Existing	0.00	15	\$1,974.34	20%	50%	\$0.00	0.00	0.00	RTF Workbook
Mining and Extraction	Process	Refrigeration - System Optimization	employee	Existing	0.00	15	\$1,390.29	20%	50%	\$0.00	0.00	0.00	AEG Research
Mining and Extraction	Motors	Pumping System - Equipment Upgrade	employee	Existing	180,238.01	10	\$26,350.36	9%	38%	\$0.05	72,678.79	74,452.74	7th Power Plan
Mining and Extraction	Motors	Pumping System - System Optimization	employee	Existing	132,548.79	12	\$40,157.96	9%	38%	\$0.04	51,996.19	53,940.79	UNIDO Study on Industrial Energy Efficiency
Mining and Extraction	Motors	Pumping System - Variable Speed Drive	employee	Existing	130,410.64	10	\$41,779.26	9%	38%	\$0.04	50,658.48	53,278.78	UNIDO Study on Industrial Energy Efficiency
Mining and Extraction	Motors	Fan System - Equipment Upgrade	employee	Existing	27,654.85	10	\$2,760.51	9%	38%	\$0.05	10,995.19	11,190.94	UNIDO Study on Industrial Energy Efficiency
Mining and Extraction	Motors	Fan System - Flow Optimization	employee	Existing	32,618.73	10	\$4,567.40	9%	38%	\$0.02	12,952.74	13,206.25	UNIDO Study on Industrial Energy Efficiency
Mining and Extraction	Motors	Fan System - Variable Speed Drive	employee	Existing	47,473.90	10	\$22,982.89	9%	38%	\$0.06	18,239.92	19,477.33	UNIDO Study on Industrial Energy Efficiency
Mining and Extraction	Motors	Compressed Air - Equipment Upgrade	employee	Existing	135,194.49	10	\$9,837.47	17%	50%	\$0.04	64,556.17	64,556.17	7th Power Plan
Mining and Extraction	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	Existing	0.00	15	\$0.00	16%	38%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Mining and Extraction	Motors	Compressed Air - Refrigerated Cycling Dryers	employee	Existing	0.00	10	\$0.00	16%	30%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Mining and Extraction	Motors	Compressed Air - System Controls	employee	Existing	29,173.34	10	\$7,033.79	9%	38%	\$0.03	11,566.05	12,171.02	UNIDO Study on Industrial Energy Efficiency
Mining and Extraction	Motors	Compressed Air - Leak Management Program	employee	Existing	76,321.64	10	\$7,070.68	18%	75%	\$0.04	62,092.85	62,718.61	7th Power Plan
Mining and Extraction	Motors	Compressed Air - Variable Speed Drive	employee	Existing	53,681.55	15	\$43,123.71	26%	45%	\$0.08	14,025.44	15,027.81	UNIDO Study on Industrial Energy Efficiency
Mining and Extraction	Motors	Compressed Air - Low Pressure-Drop Filters	employee	Existing	1,789.69	10	\$664.66	17%	50%	\$0.05	818.36	876.72	Illinois TRM
Mining and Extraction	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	Existing	11,057.02	10	\$2,156.19	17%	50%	\$0.03	5,148.90	5,361.43	UNIDO Study on Industrial Energy Efficiency
Mining and Extraction	Motors	Compressed Air - Outside Air Intake	employee	Existing	0.00	20	\$0.00	17%	50%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Mining and Extraction	Motors	Compressed Air - Receiver Capacity Addition	employee	Existing	10,878.60	15	\$5,929.51	17%	50%	\$0.06	5,016.43	5,304.54	UNIDO Study on Industrial Energy Efficiency

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Mining and Extraction	Motors	Material Handling - Variable Speed Drive	employee	Existing	47,036.35	10	\$17,271.52	25%	45%	\$0.05	12,741.85	13,517.63	7th Power Plan
Mining and Extraction	Motors	Motors - Green Rewind (<100 HP)	employee	Existing	4,282.12	10	\$1,897.23	10%	50%	\$0.06	11,562.43	12,321.96	7th Power Plan
Mining and Extraction	Motors	Motors - Green Rewind (100 HP+)	employee	Existing	2,418.89	10	\$673.40	6%	25%	\$0.04	3,134.97	3,292.87	7th Power Plan
Mining and Extraction	Motors	Switch from Belt Drive to Direct Drive	employee	Existing	37,021.13	12	\$8,328.03	16%	25%	\$0.03	24,286.38	25,075.73	2015-mdu-irp-report---volume-iii.pdf
Mining and Extraction	Motors	Motors - Synchronous Belts	employee	Existing	9,701.84	10	\$2,505.40	16%	36%	\$0.03	13,445.83	14,176.99	7th Power Plan
Mining and Extraction	Miscellaneous	Agriculture - Engine Block Timer	employee	Existing	16,524.95	3	\$203.85	0%	0%	\$0.00	0.00	0.00	Vermont TRM
Mining and Extraction	Motors	Agriculture - Live Stock Waterer	employee	Existing	425,770.34	10	\$232,061.51	0%	0%	\$0.07	0.00	0.00	Ontario Power TRM
Mining and Extraction	Process	Dairy - Milk Precoolers	employee	Existing	0.00	15	\$6,282.50	0%	0%	\$0.00	0.00	0.00	Ontario Power TRM
Mining and Extraction	Process	Clean Room: Change Filter Strategy	employee	Existing	10,842.67	15	\$79.97	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Mining and Extraction	Process	Clean Room: Chiller Optimize	employee	Existing	0.00	15	\$372.01	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Mining and Extraction	Process	Clean Room: Clean Room HVAC	employee	Existing	0.00	15	\$449.06	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Mining and Extraction	Process	Elec Chip Fab: Solidstate Chiller	employee	Existing	0.00	15	\$1,410.50	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Mining and Extraction	Process	Elec Chip Fab: Eliminate Exhaust	employee	Existing	1,355.33	15	\$287.71	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Mining and Extraction	Process	Elec Chip Fab: Exhaust Injector	employee	Existing	2,710.67	15	\$1,387.84	0%	0%	\$0.06	0.00	0.00	7th Power Plan
Mining and Extraction	Process	Elec Chip Fab: Reduce Gas Pressure	employee	Existing	2,710.67	15	\$27.83	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Mining and Extraction	Motors	Panel: Hydraulic Press	employee	Existing	71,308.55	10	\$17,261.16	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Mining and Extraction	Motors	Wood: Replace Pneumatic Conveyor	employee	Existing	78,412.81	10	\$1,292.70	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Mining and Extraction	Process	Metal: New Arc Furnace	employee	Existing	12,198.00	10	\$1,280.46	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Mining and Extraction	Process	Paper: Premium Control Large Material	employee	Existing	12,690.89	10	\$6,348.76	0%	0%	\$0.07	0.00	0.00	7th Power Plan

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Mining and Extraction	Process	Paper: Efficient Pulp Screen	employee	Existing	10,165.00	10	\$2,091.30	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Mining and Extraction	Process	Kraft: Effluent Treatment System	employee	Existing	10,165.00	10	\$857.38	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Mining and Extraction	Motors	Kraft: Efficient Agitator	employee	Existing	131,729.49	10	\$12,880.76	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Mining and Extraction	Process	Mech Pulp: Premium Process	employee	Existing	113.79	5	\$14.67	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Mining and Extraction	Motors	Mech Pulp: Refiner Plate Improvement	employee	Existing	1,108.50	1	\$49.14	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Mining and Extraction	Cooling	Transformer - High Efficiency	employee	Existing	873.85	10	\$5,722.36	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Mining and Extraction	Heating	Transformer - High Efficiency	employee	Existing	5,353.62	10	\$5,722.36	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Mining and Extraction	Ventilation	Transformer - High Efficiency	employee	Existing	80.57	10	\$5,722.36	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Mining and Extraction	Interior Lighting	Transformer - High Efficiency	employee	Existing	1,068.57	10	\$5,722.36	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Mining and Extraction	Exterior Lighting	Transformer - High Efficiency	employee	Existing	231.08	10	\$5,722.36	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Mining and Extraction	Motors	Transformer - High Efficiency	employee	Existing	35,480.86	10	\$5,722.36	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Mining and Extraction	Process	Transformer - High Efficiency	employee	Existing	3,049.50	10	\$5,722.36	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Mining and Extraction	Miscellaneous	Transformer - High Efficiency	employee	Existing	625.44	10	\$5,722.36	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Mining and Extraction	Cooling	Strategic Energy Management	employee	Existing	2,469.11	3	\$35,144.98	0%	0%	\$0.08	0.00	0.00	AEG Research
Mining and Extraction	Heating	Strategic Energy Management	employee	Existing	15,365.27	3	\$35,144.98	0%	0%	\$0.08	0.00	0.00	AEG Research
Mining and Extraction	Ventilation	Strategic Energy Management	employee	Existing	230.27	3	\$35,144.98	0%	0%	\$0.08	0.00	0.00	AEG Research
Mining and Extraction	Interior Lighting	Strategic Energy Management	employee	Existing	3,053.22	3	\$35,144.98	0%	0%	\$0.08	0.00	0.00	AEG Research
Mining and Extraction	Exterior Lighting	Strategic Energy Management	employee	Existing	663.66	3	\$35,144.98	0%	0%	\$0.08	0.00	0.00	AEG Research
Mining and Extraction	Motors	Strategic Energy Management	employee	Existing	101,781.45	3	\$35,144.98	0%	0%	\$0.08	0.00	0.00	AEG Research

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Mining and Extraction	Process	Strategic Energy Management	employee	Existing	8,745.73	3	\$35,144.98	0%	0%	\$0.08	0.00	0.00	AEG Research
Mining and Extraction	Miscellaneous	Strategic Energy Management	employee	Existing	1,792.23	3	\$35,144.98	0%	0%	\$0.08	0.00	0.00	AEG Research
Mining and Extraction	Interior Lighting	Commissioning	employee	Existing	3,522.95	3	\$66,980.50	0%	0%	\$0.16	0.00	0.00	AEG Research
Mining and Extraction	Exterior Lighting	Commissioning	employee	Existing	765.76	3	\$66,980.50	0%	0%	\$0.16	0.00	0.00	AEG Research
Mining and Extraction	Motors	Commissioning	employee	Existing	117,440.2 ₂	3	\$66,980.50	0%	0%	\$0.16	0.00	0.00	AEG Research
Mining and Extraction	Process	Commissioning	employee	Existing	10,091.23	3	\$66,980.50	0%	0%	\$0.16	0.00	0.00	AEG Research
Mining and Extraction	Miscellaneous	Commissioning	employee	Existing	2,067.97	3	\$66,980.50	0%	0%	\$0.16	0.00	0.00	AEG Research
Mining and Extraction	Interior Lighting	Retrocommissioning	employee	Existing	3,561.91	3	\$42,520.55	10%	40%	\$0.10	1,274.19	1,650.64	AEG Research
Mining and Extraction	Exterior Lighting	Retrocommissioning	employee	Existing	770.28	3	\$42,520.55	10%	40%	\$0.10	279.60	368.81	AEG Research
Mining and Extraction	Motors	Retrocommissioning	employee	Existing	118,269.5 ₄	3	\$42,520.55	10%	40%	\$0.10	45,685.11	48,148.91	AEG Research
Mining and Extraction	Process	Retrocommissioning	employee	Existing	10,165.00	3	\$42,520.55	10%	40%	\$0.10	4,122.71	4,122.71	AEG Research
Mining and Extraction	Miscellaneous	Retrocommissioning	employee	Existing	2,084.81	3	\$42,520.55	10%	40%	\$0.10	1,070.41	874.35	AEG Research
Mining and Extraction	Motors	Municipal Sewage Treatment	employee	Existing	23,140.47	12	\$13,246.84	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Mining and Extraction	Motors	Municipal Water Supply Treatment	employee	Existing	0.00	12	\$0.00	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Mining and Extraction	Cooling	Insulation - Ceiling	sqft	New	0.11	45	\$1.28	15%	25%	\$0.16	45.61	46.30	Building Energy Simulation Tool
Mining and Extraction	Heating	Insulation - Ceiling	sqft	New	0.52	45	\$1.28	15%	25%	\$0.16	228.22	228.19	Building Energy Simulation Tool
Mining and Extraction	Ventilation	Insulation - Ceiling	sqft	New	0.01	45	\$1.28	15%	25%	\$0.16	27.17	29.68	Building Energy Simulation Tool
Mining and Extraction	Cooling	Insulation - Ducting	sqft	New	0.04	20	\$0.84	15%	25%	\$1.13	17.59	17.86	Building Energy Simulation Tool
Mining and Extraction	Heating	Insulation - Ducting	sqft	New	0.02	20	\$0.84	15%	25%	\$1.13	9.61	9.62	Building Energy Simulation Tool

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Mining and Extraction	Ventilation	Insulation - Ducting	sqft	New	0.00	20	\$0.84	15%	25%	\$1.13	1.14	1.25	Building Energy Simulation Tool
Mining and Extraction	Cooling	Insulation - Wall Cavity	sqft	New	0.00	45	\$0.15	45%	50%	\$0.02	0.35	0.36	Building Energy Simulation Tool
Mining and Extraction	Heating	Insulation - Wall Cavity	sqft	New	0.71	45	\$0.15	45%	50%	\$0.02	155.04	155.16	Building Energy Simulation Tool
Mining and Extraction	Ventilation	Insulation - Wall Cavity	sqft	New	0.01	45	\$0.15	45%	50%	\$0.02	18.18	19.83	Building Energy Simulation Tool
Mining and Extraction	Cooling	HVAC - Duct Repair and Sealing	sqft	New	0.01	18	\$0.00	15%	25%	\$0.00	5.74	5.84	Building Energy Simulation Tool
Mining and Extraction	Heating	HVAC - Duct Repair and Sealing	sqft	New	0.05	18	\$0.00	15%	25%	\$0.00	21.52	21.54	Building Energy Simulation Tool
Mining and Extraction	Ventilation	HVAC - Duct Repair and Sealing	sqft	New	0.00	18	\$0.00	15%	25%	\$0.00	2.52	2.76	Building Energy Simulation Tool
Mining and Extraction	Cooling	Chiller - Chilled Water Reset	sqft	New	0.04	10	\$0.01	15%	45%	\$0.03	4.27	4.44	AEG-BEST
Mining and Extraction	Cooling	Chiller - Chilled Water Variable-Flow System	sqft	New	0.20	15	\$0.50	15%	60%	\$0.24	55.84	57.70	AEG-BEST
Mining and Extraction	Cooling	Chiller - Variable Speed Fans	sqft	New	0.07	15	\$0.03	15%	75%	\$0.04	27.62	28.47	New Jersey TRM
Mining and Extraction	Cooling	HVAC - Economizer	sqft	New	4.57	10	\$0.25	18%	30%	\$0.01	18.74	19.48	AEG-BEST
Mining and Extraction	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.25	15%	35%	\$12.70	2.99	3.47	7th Power Plan
Mining and Extraction	Cooling	Destratification Fans (HVLS)	sqft	New	0.14	15	\$0.63	15%	50%	\$0.05	136.78	140.98	AEG Research
Mining and Extraction	Heating	Destratification Fans (HVLS)	sqft	New	1.30	15	\$0.63	15%	50%	\$0.05	1,332.29	1,335.54	AEG Research
Mining and Extraction	Cooling	RTU - Maintenance	sqft	New	0.07	3	\$0.07	15%	75%	\$0.29	4.73	5.10	AEG Research
Mining and Extraction	Cooling	Thermostat - WiFi/Interactive	sqft	New	0.26	5	\$0.66	5%	15%	\$0.09	17.75	18.44	7th Power Plan
Mining and Extraction	Heating	Thermostat - WiFi/Interactive	sqft	New	1.23	5	\$0.66	5%	15%	\$0.09	89.36	89.90	7th Power Plan
Mining and Extraction	Ventilation	Thermostat - WiFi/Interactive	sqft	New	0.02	5	\$0.66	5%	15%	\$0.09	10.61	12.44	7th Power Plan
Mining and Extraction	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	9.31	15	\$0.35	22%	41%	\$0.00	1,982.54	2,316.94	7th Power Plan

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Mining and Extraction	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	12.78	15	\$0.58	22%	41%	\$0.00	2,700.74	3,180.68	7th Power Plan
Mining and Extraction	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	New	0.02	15	\$0.00	1%	2%	\$0.01	4.16	5.35	7th Power Plan
Mining and Extraction	Interior Lighting	Interior Lighting - Timeclocks and Timers	sqft	New	0.00	8	\$0.00	7%	7%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Mining and Extraction	Interior Lighting	Interior Lighting - Skylights	sqft	New	0.00	15	\$1.01	18%	24%	\$0.00	0.00	0.00	AEG Research
Mining and Extraction	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	sqft	New	0.03	16	\$1.81	5%	40%	\$4.11	172.19	217.32	7th Power Plan
Mining and Extraction	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	New	0.03	11	\$0.00	15%	50%	\$0.01	110.71	147.30	Illinois TRM
Mining and Extraction	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	sqft	New	0.04	8	\$0.03	15%	25%	\$0.08	95.49	132.27	7th Power Plan
Mining and Extraction	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	New	0.02	8	\$0.02	44%	60%	\$0.08	81.63	112.69	Pacific Gas and Electric Research
Mining and Extraction	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	New	0.02	7	\$1.19	15%	30%	\$4.56	79.27	110.48	AEG Research
Mining and Extraction	Process	Process - Conductivity Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Mining and Extraction	Process	Process - Timers and Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Mining and Extraction	Motors	Process - Timers and Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Mining and Extraction	Process	Refrigeration - Floating Head Pressure	employee	New	0.00	15	\$1,395.30	20%	50%	\$0.00	0.00	0.00	RTF Workbook
Mining and Extraction	Process	Refrigeration - System Optimization	employee	New	0.00	15	\$487.91	20%	50%	\$0.00	0.00	0.00	AEG Research
Mining and Extraction	Motors	Pumping System - Equipment Upgrade	employee	New	183,271.46	10	\$26,350.36	9%	38%	\$0.05	10,702.38	10,680.41	7th Power Plan
Mining and Extraction	Motors	Pumping System - System Optimization	employee	New	136,314.50	12	\$40,157.96	9%	38%	\$0.04	12,624.07	12,555.82	UNIDO Study on Industrial Energy Efficiency
Mining and Extraction	Motors	Pumping System - Variable Speed Drive	employee	New	135,279.36	10	\$41,779.26	9%	38%	\$0.04	10,859.78	10,795.55	UNIDO Study on Industrial Energy Efficiency
Mining and Extraction	Motors	Fan System - Equipment Upgrade	employee	New	28,056.97	10	\$2,760.51	9%	38%	\$0.05	2,243.55	2,236.79	UNIDO Study on Industrial Energy Efficiency
Mining and Extraction	Motors	Fan System - Flow Optimization	employee	New	33,127.25	10	\$4,567.40	9%	38%	\$0.02	2,649.42	2,641.13	UNIDO Study on Industrial Energy Efficiency

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Mining and Extraction	Motors	Fan System - Variable Speed Drive	employee	New	49,693.63	10	\$22,982.89	9%	38%	\$0.06	3,994.34	3,967.44	UNIDO Study on Industrial Energy Efficiency
Mining and Extraction	Motors	Compressed Air - Equipment Upgrade	employee	New	135,194.49	10	\$9,837.47	17%	50%	\$0.04	9,176.84	9,176.84	7th Power Plan
Mining and Extraction	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	New	0.00	15	\$0.00	16%	38%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Mining and Extraction	Motors	Compressed Air - Refrigerated Cycling Dryers	employee	New	0.00	10	\$0.00	16%	30%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Mining and Extraction	Motors	Compressed Air - System Controls	employee	New	30,146.01	10	\$7,033.79	9%	38%	\$0.03	1,765.28	1,761.19	UNIDO Study on Industrial Energy Efficiency
Mining and Extraction	Motors	Compressed Air - Leak Management Program	employee	New	76,881.72	10	\$7,070.68	18%	75%	\$0.04	8,961.31	8,951.64	7th Power Plan
Mining and Extraction	Motors	Compressed Air - Variable Speed Drive	employee	New	56,039.56	15	\$43,123.71	26%	45%	\$0.08	3,495.03	3,476.19	UNIDO Study on Industrial Energy Efficiency
Mining and Extraction	Motors	Compressed Air - Low Pressure-Drop Filters	employee	New	1,868.11	10	\$664.66	17%	50%	\$0.05	127.85	127.54	Illinois TRM
Mining and Extraction	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	New	11,364.22	10	\$2,156.19	17%	50%	\$0.03	775.92	773.62	UNIDO Study on Industrial Energy Efficiency
Mining and Extraction	Motors	Compressed Air - Outside Air Intake	employee	New	0.00	20	\$0.00	17%	50%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Mining and Extraction	Motors	Compressed Air - Receiver Capacity Addition	employee	New	11,278.53	15	\$5,929.51	17%	50%	\$0.06	1,229.70	1,223.81	UNIDO Study on Industrial Energy Efficiency
Mining and Extraction	Motors	Material Handling - Variable Speed Drive	employee	New	49,035.88	10	\$17,271.52	25%	45%	\$0.05	2,764.56	2,746.63	7th Power Plan
Mining and Extraction	Motors	Motors - Green Rewind (<100 HP)	employee	New	4,477.20	10	\$1,897.23	10%	50%	\$0.06	2,524.99	2,508.31	7th Power Plan
Mining and Extraction	Motors	Motors - Green Rewind (100 HP+)	employee	New	2,507.05	10	\$673.40	6%	25%	\$0.04	670.80	666.85	7th Power Plan
Mining and Extraction	Motors	Switch from Belt Drive to Direct Drive	employee	New	37,965.58	12	\$8,328.03	16%	25%	\$0.03	5,857.94	5,827.78	2015-mdu-irp-report---volume-iii.pdf
Mining and Extraction	Motors	Motors - Synchronous Belts	employee	New	10,039.21	10	\$2,505.40	16%	36%	\$0.03	2,058.23	2,053.03	7th Power Plan
Mining and Extraction	Miscellaneous	Agriculture - Engine Block Timer	employee	New	16,524.95	3	\$203.85	0%	0%	\$0.00	0.00	0.00	Vermont TRM
Mining and Extraction	Motors	Agriculture - Live Stock Waterer	employee	New	446,487.23	10	\$232,061.51	0%	0%	\$0.07	0.00	0.00	Ontario Power TRM
Mining and Extraction	Process	Dairy - Milk Precoolers	employee	New	0.00	15	\$6,282.50	0%	0%	\$0.00	0.00	0.00	Ontario Power TRM

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Mining and Extraction	Process	Clean Room: Change Filter Strategy	employee	New	10,842.67	15	\$79.97	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Mining and Extraction	Process	Clean Room: Chiller Optimize	employee	New	0.00	15	\$372.01	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Mining and Extraction	Process	Clean Room: Clean Room HVAC	employee	New	0.00	15	\$449.06	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Mining and Extraction	Process	Elec Chip Fab: Solidstate Chiller	employee	New	0.00	15	\$1,410.50	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Mining and Extraction	Process	Elec Chip Fab: Eliminate Exhaust	employee	New	1,355.33	15	\$287.71	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Mining and Extraction	Process	Elec Chip Fab: Exhaust Injector	employee	New	2,710.67	15	\$1,387.84	0%	0%	\$0.06	0.00	0.00	7th Power Plan
Mining and Extraction	Process	Elec Chip Fab: Reduce Gas Pressure	employee	New	2,710.67	15	\$27.83	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Mining and Extraction	Motors	Panel: Hydraulic Press	employee	New	73,788.22	10	\$17,261.16	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Mining and Extraction	Motors	Wood: Replace Pneumatic Conveyor	employee	New	78,412.81	10	\$1,292.70	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Mining and Extraction	Process	Metal: New Arc Furnace	employee	New	12,198.00	10	\$1,280.46	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Mining and Extraction	Process	Paper: Premium Control Large Material	employee	New	12,690.89	10	\$6,348.76	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Mining and Extraction	Process	Paper: Efficient Pulp Screen	employee	New	10,165.00	10	\$2,091.30	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Mining and Extraction	Process	Kraft: Effluent Treatment System	employee	New	10,165.00	10	\$857.38	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Mining and Extraction	Motors	Kraft: Efficient Agitator	employee	New	133,908.25	10	\$12,880.76	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Mining and Extraction	Process	Mech Pulp: Premium Process	employee	New	113.79	5	\$14.67	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Mining and Extraction	Motors	Mech Pulp: Refiner Plate Improvement	employee	New	1,162.44	1	\$49.14	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Mining and Extraction	Cooling	Transformer - High Efficiency	employee	New	782.75	10	\$5,684.08	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Mining and Extraction	Heating	Transformer - High Efficiency	employee	New	5,115.96	10	\$5,684.08	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Mining and Extraction	Ventilation	Transformer - High Efficiency	employee	New	45.58	10	\$5,684.08	15%	15%	\$0.02	0.00	0.00	7th Power Plan

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Mining and Extraction	Interior Lighting	Transformer - High Efficiency	employee	New	811.88	10	\$5,684.08	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Mining and Extraction	Exterior Lighting	Transformer - High Efficiency	employee	New	167.78	10	\$5,684.08	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Mining and Extraction	Motors	Transformer - High Efficiency	employee	New	37,207.27	10	\$5,684.08	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Mining and Extraction	Process	Transformer - High Efficiency	employee	New	3,049.50	10	\$5,684.08	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Mining and Extraction	Miscellaneous	Transformer - High Efficiency	employee	New	592.42	10	\$5,684.08	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Mining and Extraction	Cooling	Strategic Energy Management	employee	New	2,235.50	3	\$34,909.88	0%	0%	\$0.09	0.00	0.00	AEG Research
Mining and Extraction	Heating	Strategic Energy Management	employee	New	14,743.44	3	\$34,909.88	0%	0%	\$0.09	0.00	0.00	AEG Research
Mining and Extraction	Ventilation	Strategic Energy Management	employee	New	131.08	3	\$34,909.88	0%	0%	\$0.09	0.00	0.00	AEG Research
Mining and Extraction	Interior Lighting	Strategic Energy Management	employee	New	2,339.68	3	\$34,909.88	0%	0%	\$0.09	0.00	0.00	AEG Research
Mining and Extraction	Exterior Lighting	Strategic Energy Management	employee	New	484.68	3	\$34,909.88	0%	0%	\$0.09	0.00	0.00	AEG Research
Mining and Extraction	Motors	Strategic Energy Management	employee	New	107,487.58	3	\$34,909.88	0%	0%	\$0.09	0.00	0.00	AEG Research
Mining and Extraction	Process	Strategic Energy Management	employee	New	8,809.66	3	\$34,909.88	0%	0%	\$0.09	0.00	0.00	AEG Research
Mining and Extraction	Miscellaneous	Strategic Energy Management	employee	New	1,711.44	3	\$34,909.88	0%	0%	\$0.09	0.00	0.00	AEG Research
Mining and Extraction	Interior Lighting	Commissioning	employee	New	2,699.63	3	\$67,193.07	10%	40%	\$0.16	21.06	30.53	AEG Research
Mining and Extraction	Exterior Lighting	Commissioning	employee	New	559.25	3	\$67,193.07	10%	40%	\$0.16	4.86	7.04	AEG Research
Mining and Extraction	Motors	Commissioning	employee	New	124,024.23	3	\$67,193.07	10%	40%	\$0.16	871.51	879.73	AEG Research
Mining and Extraction	Process	Commissioning	employee	New	10,165.00	3	\$67,193.07	10%	40%	\$0.16	70.80	70.80	AEG Research
Mining and Extraction	Miscellaneous	Commissioning	employee	New	1,974.75	3	\$67,193.07	10%	40%	\$0.16	17.03	11.77	AEG Research
Mining and Extraction	Interior Lighting	Retrocommissioning	employee	New	2,706.25	3	\$42,655.49	0%	0%	\$0.10	0.00	0.00	AEG Research

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Mining and Extraction	Exterior Lighting	Retrocommissioning	employee	New	559.25	3	\$42,655.49	0%	0%	\$0.10	0.00	0.00	AEG Research
Mining and Extraction	Motors	Retrocommissioning	employee	New	124,024.23	3	\$42,655.49	0%	0%	\$0.10	0.00	0.00	AEG Research
Mining and Extraction	Process	Retrocommissioning	employee	New	10,165.00	3	\$42,655.49	0%	0%	\$0.10	0.00	0.00	AEG Research
Mining and Extraction	Miscellaneous	Retrocommissioning	employee	New	1,974.75	3	\$42,655.49	0%	0%	\$0.10	0.00	0.00	AEG Research
Mining and Extraction	Motors	Municipal Sewage Treatment	employee	New	24,194.69	12	\$13,246.84	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Mining and Extraction	Motors	Municipal Water Supply Treatment	employee	New	0.00	12	\$0.00	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Food Mfg	Cooling	Insulation - Ceiling	sqft	Existing	0.12	45	\$1.28	15%	25%	\$0.15	1.28	1.36	Building Energy Simulation Tool
Food Mfg	Heating	Insulation - Ceiling	sqft	Existing	0.55	45	\$1.28	15%	25%	\$0.15	6.30	6.47	Building Energy Simulation Tool
Food Mfg	Ventilation	Insulation - Ceiling	sqft	Existing	0.02	45	\$1.28	15%	25%	\$0.15	0.91	1.04	Building Energy Simulation Tool
Food Mfg	Cooling	Insulation - Ducting	sqft	Existing	0.05	20	\$0.84	15%	25%	\$1.05	0.47	0.51	Building Energy Simulation Tool
Food Mfg	Heating	Insulation - Ducting	sqft	Existing	0.02	20	\$0.84	15%	25%	\$1.05	0.26	0.27	Building Energy Simulation Tool
Food Mfg	Ventilation	Insulation - Ducting	sqft	Existing	0.00	20	\$0.84	15%	25%	\$1.05	0.04	0.04	Building Energy Simulation Tool
Food Mfg	Cooling	Insulation - Wall Cavity	sqft	Existing	0.00	45	\$0.15	45%	50%	\$0.02	0.01	0.01	Building Energy Simulation Tool
Food Mfg	Heating	Insulation - Wall Cavity	sqft	Existing	0.76	45	\$0.15	45%	50%	\$0.02	4.47	4.48	Building Energy Simulation Tool
Food Mfg	Ventilation	Insulation - Wall Cavity	sqft	Existing	0.02	45	\$0.15	45%	50%	\$0.02	0.61	0.69	Building Energy Simulation Tool
Food Mfg	Cooling	HVAC - Duct Repair and Sealing	sqft	Existing	0.02	18	\$0.00	15%	25%	\$0.00	0.17	0.18	Building Energy Simulation Tool
Food Mfg	Heating	HVAC - Duct Repair and Sealing	sqft	Existing	0.05	18	\$0.00	15%	25%	\$0.00	0.63	0.63	Building Energy Simulation Tool
Food Mfg	Ventilation	HVAC - Duct Repair and Sealing	sqft	Existing	0.00	18	\$0.00	15%	25%	\$0.00	0.09	0.10	Building Energy Simulation Tool
Food Mfg	Cooling	Chiller - Chilled Water Reset	sqft	Existing	0.05	10	\$0.01	15%	45%	\$0.03	0.41	0.44	AEG-BEST

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Food Mfg	Cooling	Chiller - Chilled Water Variable-Flow System	sqft	Existing	0.25	15	\$0.50	15%	60%	\$0.20	3.24	3.58	AEG-BEST
Food Mfg	Cooling	Chiller - Variable Speed Fans	sqft	Existing	0.10	15	\$0.03	15%	75%	\$0.04	1.69	1.79	New Jersey TRM
Food Mfg	Cooling	HVAC - Economizer	sqft	Existing	0.42	10	\$0.25	18%	30%	\$0.08	1.62	1.76	AEG-BEST
Food Mfg	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.25	15%	35%	\$10.61	0.18	0.22	7th Power Plan
Food Mfg	Cooling	Destratification Fans (HVLS)	sqft	Existing	0.16	15	\$0.63	15%	50%	\$0.05	7.18	7.62	AEG Research
Food Mfg	Heating	Destratification Fans (HVLS)	sqft	Existing	1.39	15	\$0.63	15%	50%	\$0.05	69.17	69.60	AEG Research
Food Mfg	Cooling	RTU - Maintenance	sqft	Existing	0.08	3	\$0.07	15%	75%	\$0.28	2.97	3.35	AEG Research
Food Mfg	Cooling	Thermostat - WiFi/Interactive	sqft	Existing	0.29	5	\$0.66	5%	15%	\$0.09	2.94	3.17	7th Power Plan
Food Mfg	Heating	Thermostat - WiFi/Interactive	sqft	Existing	1.29	5	\$0.66	5%	15%	\$0.09	14.81	15.26	7th Power Plan
Food Mfg	Ventilation	Thermostat - WiFi/Interactive	sqft	Existing	0.04	5	\$0.66	5%	15%	\$0.09	2.13	2.44	7th Power Plan
Food Mfg	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.40	15	\$0.35	7%	33%	\$0.07	29.46	35.52	7th Power Plan
Food Mfg	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.55	15	\$0.58	7%	33%	\$0.09	39.59	48.82	7th Power Plan
Food Mfg	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	Existing	0.02	15	\$0.00	1%	2%	\$0.01	0.18	0.24	7th Power Plan
Food Mfg	Interior Lighting	Interior Lighting - Timers and Timers	sqft	Existing	0.00	8	\$0.00	7%	7%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Food Mfg	Interior Lighting	Interior Lighting - Skylights	sqft	Existing	0.00	15	\$1.01	15%	23%	\$0.00	0.00	0.00	AEG Research
Food Mfg	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	sqft	Existing	0.03	16	\$1.81	5%	40%	\$4.11	5.52	7.79	7th Power Plan
Food Mfg	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	Existing	0.04	11	\$0.00	15%	50%	\$0.01	6.09	7.85	Illinois TRM
Food Mfg	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	sqft	Existing	0.05	8	\$0.03	15%	25%	\$0.08	7.45	10.13	7th Power Plan
Food Mfg	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	Existing	0.03	8	\$0.02	33%	60%	\$0.08	10.36	14.48	Pacific Gas and Electric Research
Food Mfg	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	Existing	0.03	7	\$1.19	15%	30%	\$4.54	6.48	9.57	AEG Research

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Food Mfg	Process	Process - Conductivity Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Food Mfg	Process	Process - Timers and Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Food Mfg	Motors	Process - Timers and Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Food Mfg	Process	Refrigeration - Floating Head Pressure	employee	Existing	936.79	15	\$918.19	20%	50%	\$0.11	51.85	52.25	RTF Workbook
Food Mfg	Process	Refrigeration - System Optimization	employee	Existing	1,512.76	15	\$646.57	20%	50%	\$0.05	84.12	84.12	AEG Research
Food Mfg	Motors	Pumping System - Equipment Upgrade	employee	Existing	1,311.69	10	\$191.27	9%	38%	\$0.05	68.89	70.49	7th Power Plan
Food Mfg	Motors	Pumping System - System Optimization	employee	Existing	973.09	12	\$291.50	9%	38%	\$0.04	49.94	51.42	UNIDO Study on Industrial Energy Efficiency
Food Mfg	Motors	Pumping System - Variable Speed Drive	employee	Existing	964.00	10	\$303.27	9%	38%	\$0.04	49.21	51.05	UNIDO Study on Industrial Energy Efficiency
Food Mfg	Motors	Fan System - Equipment Upgrade	employee	Existing	1,212.26	10	\$119.94	9%	38%	\$0.05	63.02	63.72	UNIDO Study on Industrial Energy Efficiency
Food Mfg	Motors	Fan System - Flow Optimization	employee	Existing	1,425.72	10	\$198.44	9%	38%	\$0.02	73.89	75.04	UNIDO Study on Industrial Energy Efficiency
Food Mfg	Motors	Fan System - Variable Speed Drive	employee	Existing	2,096.91	10	\$998.55	9%	38%	\$0.06	105.76	111.58	UNIDO Study on Industrial Energy Efficiency
Food Mfg	Motors	Compressed Air - Equipment Upgrade	employee	Existing	1,506.07	10	\$109.59	17%	50%	\$0.04	93.61	93.61	7th Power Plan
Food Mfg	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	Existing	0.00	15	\$0.00	16%	38%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Food Mfg	Motors	Compressed Air - Refrigerated Cycling Dryers	employee	Existing	0.00	10	\$0.00	16%	30%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Food Mfg	Motors	Compressed Air - System Controls	employee	Existing	330.56	10	\$78.36	9%	38%	\$0.03	17.21	17.85	UNIDO Study on Industrial Energy Efficiency
Food Mfg	Motors	Compressed Air - Leak Management Program	employee	Existing	854.06	10	\$78.77	18%	75%	\$0.04	90.65	91.22	7th Power Plan
Food Mfg	Motors	Compressed Air - Variable Speed Drive	employee	Existing	607.32	15	\$480.40	26%	45%	\$0.08	20.82	22.02	UNIDO Study on Industrial Energy Efficiency
Food Mfg	Motors	Compressed Air - Low Pressure-Drop Filters	employee	Existing	20.25	10	\$7.40	17%	50%	\$0.05	1.21	1.28	Illinois TRM
Food Mfg	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	Existing	124.53	10	\$24.02	17%	50%	\$0.03	7.59	7.83	UNIDO Study on Industrial Energy Efficiency

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Food Mfg	Motors	Compressed Air - Outside Air Intake	employee	Existing	0.00	20	\$0.00	17%	50%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Food Mfg	Motors	Compressed Air - Receiver Capacity Addition	employee	Existing	123.44	15	\$66.05	17%	50%	\$0.06	7.48	7.79	UNIDO Study on Industrial Energy Efficiency
Food Mfg	Motors	Material Handling - Variable Speed Drive	employee	Existing	3,760.15	10	\$1,348.24	25%	45%	\$0.05	134.36	139.89	7th Power Plan
Food Mfg	Motors	Motors - Green Rewind (<100 HP)	employee	Existing	76.90	10	\$33.51	10%	50%	\$0.06	27.26	28.70	7th Power Plan
Food Mfg	Motors	Motors - Green Rewind (100 HP+)	employee	Existing	43.47	10	\$11.89	6%	25%	\$0.04	7.40	7.67	7th Power Plan
Food Mfg	Motors	Switch from Belt Drive to Direct Drive	employee	Existing	661.14	12	\$147.11	16%	25%	\$0.03	56.73	58.15	2015-mdu-irp-report---volume-iii.pdf
Food Mfg	Motors	Motors - Synchronous Belts	employee	Existing	174.45	10	\$44.26	16%	36%	\$0.03	31.77	32.99	7th Power Plan
Food Mfg	Miscellaneous	Agriculture - Engine Block Timer	employee	Existing	3,019.63	3	\$37.25	0%	0%	\$0.00	0.00	0.00	Vermont TRM
Food Mfg	Motors	Agriculture - Live Stock Waterer	employee	Existing	3,125.71	10	\$1,684.50	0%	0%	\$0.07	0.00	0.00	Ontario Power TRM
Food Mfg	Process	Dairy - Milk Precoolers	employee	Existing	6,245.27	15	\$2,921.76	0%	0%	\$0.05	0.00	0.00	Ontario Power TRM
Food Mfg	Process	Clean Room: Change Filter Strategy	employee	Existing	96.52	15	\$0.71	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Food Mfg	Process	Clean Room: Chiller Optimize	employee	Existing	1,868.61	15	\$173.01	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Food Mfg	Process	Clean Room: Clean Room HVAC	employee	Existing	1,134.57	15	\$208.84	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Food Mfg	Process	Elec Chip Fab: Solidstate Chiller	employee	Existing	1,124.15	15	\$655.97	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Food Mfg	Process	Elec Chip Fab: Eliminate Exhaust	employee	Existing	12.07	15	\$2.56	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Food Mfg	Process	Elec Chip Fab: Exhaust Injector	employee	Existing	23.91	15	\$12.35	0%	0%	\$0.06	0.00	0.00	7th Power Plan
Food Mfg	Process	Elec Chip Fab: Reduce Gas Pressure	employee	Existing	24.13	15	\$0.25	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Food Mfg	Motors	Panel: Hydraulic Press	employee	Existing	5,674.92	10	\$1,347.43	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Food Mfg	Motors	Wood: Replace Pneumatic Conveyor	employee	Existing	6,121.02	10	\$100.91	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Food Mfg	Process	Metal: New Arc Furnace	employee	Existing	3,371.22	10	\$353.89	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Food Mfg	Process	Paper: Premium Control Large Material	employee	Existing	1,250.21	10	\$634.86	0%	0%	\$0.07	0.00	0.00	7th Power Plan

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Food Mfg	Process	Paper: Efficient Pulp Screen	employee	Existing	1,016.48	10	\$209.13	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Food Mfg	Process	Kraft: Effluent Treatment System	employee	Existing	1,016.48	10	\$85.74	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Food Mfg	Motors	Kraft: Efficient Agitator	employee	Existing	10,395.22	10	\$1,005.49	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Food Mfg	Process	Mech Pulp: Premium Process	employee	Existing	11.27	5	\$1.47	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Food Mfg	Motors	Mech Pulp: Refiner Plate Improvement	employee	Existing	87.51	1	\$3.84	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Food Mfg	Cooling	Transformer - High Efficiency	employee	Existing	77.97	10	\$222.90	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Food Mfg	Heating	Transformer - High Efficiency	employee	Existing	477.69	10	\$222.90	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Food Mfg	Ventilation	Transformer - High Efficiency	employee	Existing	7.19	10	\$222.90	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Food Mfg	Interior Lighting	Transformer - High Efficiency	employee	Existing	62.61	10	\$222.90	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Food Mfg	Exterior Lighting	Transformer - High Efficiency	employee	Existing	13.54	10	\$222.90	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Food Mfg	Motors	Transformer - High Efficiency	employee	Existing	633.85	10	\$222.90	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Food Mfg	Process	Transformer - High Efficiency	employee	Existing	500.69	10	\$222.90	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Food Mfg	Miscellaneous	Transformer - High Efficiency	employee	Existing	114.29	10	\$222.90	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Food Mfg	Cooling	Strategic Energy Management	employee	Existing	220.31	3	\$1,369.01	0%	18%	\$0.08	1.20	1.32	AEG Research
Food Mfg	Heating	Strategic Energy Management	employee	Existing	1,371.01	3	\$1,369.01	0%	18%	\$0.08	8.46	8.78	AEG Research
Food Mfg	Ventilation	Strategic Energy Management	employee	Existing	20.55	3	\$1,369.01	0%	18%	\$0.08	0.66	0.76	AEG Research
Food Mfg	Interior Lighting	Strategic Energy Management	employee	Existing	179.02	3	\$1,369.01	0%	18%	\$0.08	4.94	6.48	AEG Research
Food Mfg	Exterior Lighting	Strategic Energy Management	employee	Existing	38.91	3	\$1,369.01	0%	18%	\$0.08	1.09	1.45	AEG Research
Food Mfg	Motors	Strategic Energy Management	employee	Existing	1,819.52	3	\$1,369.01	0%	18%	\$0.08	54.79	57.81	AEG Research
Food Mfg	Process	Strategic Energy Management	employee	Existing	1,437.04	3	\$1,369.01	0%	18%	\$0.08	44.87	45.56	AEG Research

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Food Mfg	Miscellaneous	Strategic Energy Management	employee	Existing	327.76	3	\$1,369.01	0%	18%	\$0.08	13.06	10.74	AEG Research
Food Mfg	Interior Lighting	Commissioning	employee	Existing	205.91	3	\$1,997.98	0%	0%	\$0.15	0.00	0.00	AEG Research
Food Mfg	Exterior Lighting	Commissioning	employee	Existing	44.76	3	\$1,997.98	0%	0%	\$0.15	0.00	0.00	AEG Research
Food Mfg	Motors	Commissioning	employee	Existing	2,091.79	3	\$1,997.98	0%	0%	\$0.15	0.00	0.00	AEG Research
Food Mfg	Process	Commissioning	employee	Existing	1,651.92	3	\$1,997.98	0%	0%	\$0.15	0.00	0.00	AEG Research
Food Mfg	Miscellaneous	Commissioning	employee	Existing	376.61	3	\$1,997.98	0%	0%	\$0.15	0.00	0.00	AEG Research
Food Mfg	Interior Lighting	Retrocommissioning	employee	Existing	208.71	3	\$1,268.36	10%	37%	\$0.10	8.75	11.33	AEG Research
Food Mfg	Exterior Lighting	Retrocommissioning	employee	Existing	45.14	3	\$1,268.36	10%	37%	\$0.10	1.92	2.53	AEG Research
Food Mfg	Motors	Retrocommissioning	employee	Existing	2,112.83	3	\$1,268.36	10%	37%	\$0.10	96.10	100.69	AEG Research
Food Mfg	Process	Retrocommissioning	employee	Existing	1,668.97	3	\$1,268.36	10%	37%	\$0.10	78.70	79.36	AEG Research
Food Mfg	Miscellaneous	Retrocommissioning	employee	Existing	380.96	3	\$1,268.36	10%	37%	\$0.10	22.91	18.72	AEG Research
Food Mfg	Motors	Municipal Sewage Treatment	employee	Existing	170.77	12	\$96.16	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Food Mfg	Motors	Municipal Water Supply Treatment	employee	Existing	0.00	12	\$0.00	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Food Mfg	Cooling	Insulation - Ceiling	sqft	New	0.11	45	\$1.28	15%	25%	\$0.16	0.53	0.54	Building Energy Simulation Tool
Food Mfg	Heating	Insulation - Ceiling	sqft	New	0.52	45	\$1.28	15%	25%	\$0.16	2.65	2.65	Building Energy Simulation Tool
Food Mfg	Ventilation	Insulation - Ceiling	sqft	New	0.01	45	\$1.28	15%	25%	\$0.16	0.32	0.34	Building Energy Simulation Tool
Food Mfg	Cooling	Insulation - Ducting	sqft	New	0.04	20	\$0.84	15%	25%	\$1.13	0.20	0.21	Building Energy Simulation Tool
Food Mfg	Heating	Insulation - Ducting	sqft	New	0.02	20	\$0.84	15%	25%	\$1.13	0.11	0.11	Building Energy Simulation Tool
Food Mfg	Ventilation	Insulation - Ducting	sqft	New	0.00	20	\$0.84	15%	25%	\$1.13	0.01	0.01	Building Energy Simulation Tool
Food Mfg	Cooling	Insulation - Wall Cavity	sqft	New	0.00	45	\$0.15	45%	50%	\$0.02	0.00	0.00	Building Energy Simulation Tool
Food Mfg	Heating	Insulation - Wall Cavity	sqft	New	0.71	45	\$0.15	45%	50%	\$0.02	1.80	1.80	Building Energy Simulation Tool
Food Mfg	Ventilation	Insulation - Wall Cavity	sqft	New	0.01	45	\$0.15	45%	50%	\$0.02	0.21	0.23	Building Energy Simulation Tool

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Food Mfg	Cooling	HVAC - Duct Repair and Sealing	sqft	New	0.01	18	\$0.00	15%	25%	\$0.00	0.07	0.07	Building Energy Simulation Tool
Food Mfg	Heating	HVAC - Duct Repair and Sealing	sqft	New	0.05	18	\$0.00	15%	25%	\$0.00	0.25	0.25	Building Energy Simulation Tool
Food Mfg	Ventilation	HVAC - Duct Repair and Sealing	sqft	New	0.00	18	\$0.00	15%	25%	\$0.00	0.03	0.03	Building Energy Simulation Tool
Food Mfg	Cooling	Chiller - Chilled Water Reset	sqft	New	0.04	10	\$0.01	15%	45%	\$0.03	0.05	0.05	AEG-BEST
Food Mfg	Cooling	Chiller - Chilled Water Variable-Flow System	sqft	New	0.20	15	\$0.50	15%	60%	\$0.24	0.65	0.67	AEG-BEST
Food Mfg	Cooling	Chiller - Variable Speed Fans	sqft	New	0.07	15	\$0.03	15%	75%	\$0.04	0.32	0.33	New Jersey TRM
Food Mfg	Cooling	HVAC - Economizer	sqft	New	0.37	10	\$0.25	18%	30%	\$0.08	0.21	0.22	AEG-BEST
Food Mfg	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.25	15%	35%	\$12.70	0.03	0.04	7th Power Plan
Food Mfg	Cooling	Destratification Fans (HVLS)	sqft	New	0.14	15	\$0.63	15%	50%	\$0.05	1.59	1.64	AEG Research
Food Mfg	Heating	Destratification Fans (HVLS)	sqft	New	1.30	15	\$0.63	15%	50%	\$0.05	15.47	15.51	AEG Research
Food Mfg	Cooling	RTU - Maintenance	sqft	New	0.07	3	\$0.07	15%	75%	\$0.29	0.05	0.06	AEG Research
Food Mfg	Cooling	Thermostat - WiFi/Interactive	sqft	New	0.26	5	\$0.66	5%	15%	\$0.09	0.21	0.21	7th Power Plan
Food Mfg	Heating	Thermostat - WiFi/Interactive	sqft	New	1.23	5	\$0.66	5%	15%	\$0.09	1.04	1.04	7th Power Plan
Food Mfg	Ventilation	Thermostat - WiFi/Interactive	sqft	New	0.02	5	\$0.66	5%	15%	\$0.09	0.12	0.14	7th Power Plan
Food Mfg	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.31	15	\$0.35	22%	41%	\$0.07	15.10	17.64	7th Power Plan
Food Mfg	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.42	15	\$0.58	22%	41%	\$0.09	20.56	24.21	7th Power Plan
Food Mfg	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	New	0.02	15	\$0.00	1%	2%	\$0.01	0.03	0.04	7th Power Plan
Food Mfg	Interior Lighting	Interior Lighting - Timeclocks and Timers	sqft	New	0.00	8	\$0.00	7%	7%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Food Mfg	Interior Lighting	Interior Lighting - Skylights	sqft	New	0.00	15	\$1.01	18%	24%	\$0.00	0.00	0.00	AEG Research
Food Mfg	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	sqft	New	0.03	16	\$1.81	5%	40%	\$4.11	1.31	1.66	7th Power Plan

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Food Mfg	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	New	0.03	11	\$0.00	15%	50%	\$0.01	0.90	1.16	Illinois TRM
Food Mfg	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	sqft	New	0.04	8	\$0.03	15%	25%	\$0.08	0.73	1.01	7th Power Plan
Food Mfg	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	New	0.02	8	\$0.02	44%	60%	\$0.08	0.62	0.86	Pacific Gas and Electric Research
Food Mfg	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	New	0.02	7	\$1.19	15%	30%	\$4.56	0.60	0.84	AEG Research
Food Mfg	Process	Process - Conductivity Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Food Mfg	Process	Process - Timers and Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Food Mfg	Motors	Process - Timers and Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Food Mfg	Process	Refrigeration - Floating Head Pressure	employee	New	941.55	15	\$648.91	20%	50%	\$0.08	11.87	11.87	RTF Workbook
Food Mfg	Process	Refrigeration - System Optimization	employee	New	1,512.76	15	\$226.91	20%	50%	\$0.02	19.07	19.07	AEG Research
Food Mfg	Motors	Pumping System - Equipment Upgrade	employee	New	1,331.07	10	\$191.27	9%	38%	\$0.05	10.11	10.10	7th Power Plan
Food Mfg	Motors	Pumping System - System Optimization	employee	New	993.50	12	\$291.50	9%	38%	\$0.04	11.95	11.91	UNIDO Study on Industrial Energy Efficiency
Food Mfg	Motors	Pumping System - Variable Speed Drive	employee	New	989.28	10	\$303.27	9%	38%	\$0.04	10.31	10.27	UNIDO Study on Industrial Energy Efficiency
Food Mfg	Motors	Fan System - Equipment Upgrade	employee	New	1,223.33	10	\$119.94	9%	38%	\$0.05	12.72	12.69	UNIDO Study on Industrial Energy Efficiency
Food Mfg	Motors	Fan System - Flow Optimization	employee	New	1,442.43	10	\$198.44	9%	38%	\$0.02	15.00	14.97	UNIDO Study on Industrial Energy Efficiency
Food Mfg	Motors	Fan System - Variable Speed Drive	employee	New	2,173.41	10	\$998.55	9%	38%	\$0.06	22.69	22.58	UNIDO Study on Industrial Energy Efficiency
Food Mfg	Motors	Compressed Air - Equipment Upgrade	employee	New	1,506.07	10	\$109.59	17%	50%	\$0.04	13.31	13.31	7th Power Plan
Food Mfg	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	New	0.00	15	\$0.00	16%	38%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Food Mfg	Motors	Compressed Air - Refrigerated Cycling Dryers	employee	New	0.00	10	\$0.00	16%	30%	\$0.00	0.00	0.00	Michigan Energy Measures Database

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Food Mfg	Motors	Compressed Air - System Controls	employee	New	338.15	10	\$78.36	9%	38%	\$0.03	2.57	2.57	UNIDO Study on Industrial Energy Efficiency
Food Mfg	Motors	Compressed Air - Leak Management Program	employee	New	858.00	10	\$78.77	18%	75%	\$0.04	13.01	13.00	7th Power Plan
Food Mfg	Motors	Compressed Air - Variable Speed Drive	employee	New	628.12	15	\$480.40	26%	45%	\$0.08	5.09	5.07	UNIDO Study on Industrial Energy Efficiency
Food Mfg	Motors	Compressed Air - Low Pressure-Drop Filters	employee	New	20.94	10	\$7.40	17%	50%	\$0.05	0.19	0.19	Illinois TRM
Food Mfg	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	New	127.09	10	\$24.02	17%	50%	\$0.03	1.13	1.13	UNIDO Study on Industrial Energy Efficiency
Food Mfg	Motors	Compressed Air - Outside Air Intake	employee	New	0.00	20	\$0.00	17%	50%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Food Mfg	Motors	Compressed Air - Receiver Capacity Addition	employee	New	126.56	15	\$66.05	17%	50%	\$0.06	1.79	1.79	UNIDO Study on Industrial Energy Efficiency
Food Mfg	Motors	Material Handling - Variable Speed Drive	employee	New	3,866.73	10	\$1,348.24	25%	45%	\$0.05	28.30	28.18	7th Power Plan
Food Mfg	Motors	Motors - Green Rewind (<100 HP)	employee	New	79.61	10	\$33.51	10%	50%	\$0.06	5.83	5.80	7th Power Plan
Food Mfg	Motors	Motors - Green Rewind (100 HP+)	employee	New	44.61	10	\$11.89	6%	25%	\$0.04	1.55	1.54	7th Power Plan
Food Mfg	Motors	Switch from Belt Drive to Direct Drive	employee	New	673.24	12	\$147.11	16%	25%	\$0.03	13.50	13.45	2015-mdu-irp-report---volume-iii.pdf
Food Mfg	Motors	Motors - Synchronous Belts	employee	New	178.62	10	\$44.26	16%	36%	\$0.03	4.76	4.75	7th Power Plan
Food Mfg	Miscellaneous	Agriculture - Engine Block Timer	employee	New	3,019.63	3	\$37.25	0%	0%	\$0.00	0.00	0.00	Vermont TRM
Food Mfg	Motors	Agriculture - Live Stock Waterer	employee	New	3,254.44	10	\$1,684.50	0%	0%	\$0.07	0.00	0.00	Ontario Power TRM
Food Mfg	Process	Dairy - Milk Precoolers	employee	New	6,276.99	15	\$2,921.76	0%	0%	\$0.05	0.00	0.00	Ontario Power TRM
Food Mfg	Process	Clean Room: Change Filter Strategy	employee	New	96.52	15	\$0.71	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Food Mfg	Process	Clean Room: Chiller Optimize	employee	New	1,868.61	15	\$173.01	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Food Mfg	Process	Clean Room: Clean Room HVAC	employee	New	1,129.86	15	\$208.84	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Food Mfg	Process	Elec Chip Fab: Solidstate Chiller	employee	New	1,129.86	15	\$655.97	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Food Mfg	Process	Elec Chip Fab: Eliminate Exhaust	employee	New	12.02	15	\$2.56	0%	0%	\$0.02	0.00	0.00	7th Power Plan

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Food Mfg	Process	Elec Chip Fab: Exhaust Injector	employee	New	24.03	15	\$12.35	0%	0%	\$0.06	0.00	0.00	7th Power Plan
Food Mfg	Process	Elec Chip Fab: Reduce Gas Pressure	employee	New	24.13	15	\$0.25	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Food Mfg	Motors	Panel: Hydraulic Press	employee	New	5,805.36	10	\$1,347.43	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Food Mfg	Motors	Wood: Replace Pneumatic Conveyor	employee	New	6,121.02	10	\$100.91	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Food Mfg	Process	Metal: New Arc Furnace	employee	New	3,357.22	10	\$353.89	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Food Mfg	Process	Paper: Premium Control Large Material	employee	New	1,260.52	10	\$634.86	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Food Mfg	Process	Paper: Efficient Pulp Screen	employee	New	1,012.26	10	\$209.13	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Food Mfg	Process	Kraft: Effluent Treatment System	employee	New	1,012.26	10	\$85.74	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Food Mfg	Motors	Kraft: Efficient Agitator	employee	New	10,490.09	10	\$1,005.49	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Food Mfg	Process	Mech Pulp: Premium Process	employee	New	11.30	5	\$1.47	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Food Mfg	Motors	Mech Pulp: Refiner Plate Improvement	employee	New	91.12	1	\$3.84	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Food Mfg	Cooling	Transformer - High Efficiency	employee	New	69.84	10	\$219.17	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Food Mfg	Heating	Transformer - High Efficiency	employee	New	456.49	10	\$219.17	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Food Mfg	Ventilation	Transformer - High Efficiency	employee	New	4.07	10	\$219.17	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Food Mfg	Interior Lighting	Transformer - High Efficiency	employee	New	47.57	10	\$219.17	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Food Mfg	Exterior Lighting	Transformer - High Efficiency	employee	New	9.83	10	\$219.17	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Food Mfg	Motors	Transformer - High Efficiency	employee	New	659.95	10	\$219.17	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Food Mfg	Process	Transformer - High Efficiency	employee	New	504.82	10	\$219.17	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Food Mfg	Miscellaneous	Transformer - High Efficiency	employee	New	108.25	10	\$219.17	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Food Mfg	Cooling	Strategic Energy Management	employee	New	199.47	3	\$1,346.06	0%	18%	\$0.08	0.02	0.02	AEG Research
Food Mfg	Heating	Strategic Energy Management	employee	New	1,315.53	3	\$1,346.06	0%	18%	\$0.08	0.14	0.15	AEG Research

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Food Mfg	Ventilation	Strategic Energy Management	employee	New	11.70	3	\$1,346.06	0%	18%	\$0.08	0.01	0.01	AEG Research
Food Mfg	Interior Lighting	Strategic Energy Management	employee	New	137.10	3	\$1,346.06	0%	18%	\$0.08	0.08	0.12	AEG Research
Food Mfg	Exterior Lighting	Strategic Energy Management	employee	New	28.40	3	\$1,346.06	0%	18%	\$0.08	0.02	0.03	AEG Research
Food Mfg	Motors	Strategic Energy Management	employee	New	1,906.53	3	\$1,346.06	0%	18%	\$0.08	1.04	1.06	AEG Research
Food Mfg	Process	Strategic Energy Management	employee	New	1,458.36	3	\$1,346.06	0%	18%	\$0.08	0.79	0.80	AEG Research
Food Mfg	Miscellaneous	Strategic Energy Management	employee	New	312.73	3	\$1,346.06	0%	18%	\$0.08	0.21	0.15	AEG Research
Food Mfg	Interior Lighting	Commissioning	employee	New	158.08	3	\$2,010.43	10%	37%	\$0.15	0.14	0.21	AEG Research
Food Mfg	Exterior Lighting	Commissioning	employee	New	32.75	3	\$2,010.43	10%	37%	\$0.15	0.03	0.05	AEG Research
Food Mfg	Motors	Commissioning	employee	New	2,198.26	3	\$2,010.43	10%	37%	\$0.15	1.81	1.83	AEG Research
Food Mfg	Process	Commissioning	employee	New	1,681.51	3	\$2,010.43	10%	37%	\$0.15	1.37	1.38	AEG Research
Food Mfg	Miscellaneous	Commissioning	employee	New	360.58	3	\$2,010.43	10%	37%	\$0.15	0.36	0.25	AEG Research
Food Mfg	Interior Lighting	Retrocommissioning	employee	New	158.58	3	\$1,276.26	0%	0%	\$0.10	0.00	0.00	AEG Research
Food Mfg	Exterior Lighting	Retrocommissioning	employee	New	32.77	3	\$1,276.26	0%	0%	\$0.10	0.00	0.00	AEG Research
Food Mfg	Motors	Retrocommissioning	employee	New	2,199.85	3	\$1,276.26	0%	0%	\$0.10	0.00	0.00	AEG Research
Food Mfg	Process	Retrocommissioning	employee	New	1,682.73	3	\$1,276.26	0%	0%	\$0.10	0.00	0.00	AEG Research
Food Mfg	Miscellaneous	Retrocommissioning	employee	New	360.85	3	\$1,276.26	0%	0%	\$0.10	0.00	0.00	AEG Research
Food Mfg	Motors	Municipal Sewage Treatment	employee	New	176.79	12	\$96.16	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Food Mfg	Motors	Municipal Water Supply Treatment	employee	New	0.00	12	\$0.00	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Paper Mfg	Cooling	Insulation - Ceiling	sqft	Existing	0.12	45	\$1.28	15%	25%	\$0.15	0.00	0.00	Building Energy Simulation Tool
Paper Mfg	Heating	Insulation - Ceiling	sqft	Existing	0.55	45	\$1.28	15%	25%	\$0.15	0.00	0.00	Building Energy Simulation Tool
Paper Mfg	Ventilation	Insulation - Ceiling	sqft	Existing	0.02	45	\$1.28	15%	25%	\$0.15	0.00	0.00	Building Energy Simulation Tool
Paper Mfg	Cooling	Insulation - Ducting	sqft	Existing	0.05	20	\$0.84	15%	25%	\$1.05	0.00	0.00	Building Energy Simulation Tool

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Paper Mfg	Heating	Insulation - Ducting	sqft	Existing	0.02	20	\$0.84	15%	25%	\$1.05	0.00	0.00	Building Energy Simulation Tool
Paper Mfg	Ventilation	Insulation - Ducting	sqft	Existing	0.00	20	\$0.84	15%	25%	\$1.05	0.00	0.00	Building Energy Simulation Tool
Paper Mfg	Cooling	Insulation - Wall Cavity	sqft	Existing	0.00	45	\$0.15	45%	50%	\$0.02	0.00	0.00	Building Energy Simulation Tool
Paper Mfg	Heating	Insulation - Wall Cavity	sqft	Existing	0.76	45	\$0.15	45%	50%	\$0.02	0.00	0.00	Building Energy Simulation Tool
Paper Mfg	Ventilation	Insulation - Wall Cavity	sqft	Existing	0.02	45	\$0.15	45%	50%	\$0.02	0.00	0.00	Building Energy Simulation Tool
Paper Mfg	Cooling	HVAC - Duct Repair and Sealing	sqft	Existing	0.02	18	\$0.00	15%	25%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Paper Mfg	Heating	HVAC - Duct Repair and Sealing	sqft	Existing	0.05	18	\$0.00	15%	25%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Paper Mfg	Ventilation	HVAC - Duct Repair and Sealing	sqft	Existing	0.00	18	\$0.00	15%	25%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Paper Mfg	Cooling	Chiller - Chilled Water Reset	sqft	Existing	0.05	10	\$0.01	15%	45%	\$0.03	0.00	0.00	AEG-BEST
Paper Mfg	Cooling	Chiller - Chilled Water Variable-Flow System	sqft	Existing	0.25	15	\$0.50	15%	60%	\$0.20	0.00	0.00	AEG-BEST
Paper Mfg	Cooling	Chiller - Variable Speed Fans	sqft	Existing	0.10	15	\$0.03	15%	75%	\$0.04	0.00	0.00	New Jersey TRM
Paper Mfg	Cooling	HVAC - Economizer	sqft	Existing	0.00	10	\$0.25	18%	30%	\$77.30	0.00	0.00	AEG-BEST
Paper Mfg	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.25	15%	35%	\$10.61	0.00	0.00	7th Power Plan
Paper Mfg	Cooling	Destratification Fans (HVLS)	sqft	Existing	0.16	15	\$0.63	15%	50%	\$0.05	0.00	0.00	AEG Research
Paper Mfg	Heating	Destratification Fans (HVLS)	sqft	Existing	1.39	15	\$0.63	15%	50%	\$0.05	0.04	0.04	AEG Research
Paper Mfg	Cooling	RTU - Maintenance	sqft	Existing	0.08	3	\$0.07	15%	75%	\$0.28	0.00	0.00	AEG Research
Paper Mfg	Cooling	Thermostat - WiFi/Interactive	sqft	Existing	0.29	5	\$0.66	5%	15%	\$0.09	0.00	0.00	7th Power Plan
Paper Mfg	Heating	Thermostat - WiFi/Interactive	sqft	Existing	1.29	5	\$0.66	5%	15%	\$0.09	0.01	0.01	7th Power Plan
Paper Mfg	Ventilation	Thermostat - WiFi/Interactive	sqft	Existing	0.04	5	\$0.66	5%	15%	\$0.09	0.00	0.00	7th Power Plan
Paper Mfg	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.00	15	\$0.35	7%	33%	\$89.83	0.02	0.02	7th Power Plan
Paper Mfg	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.00	15	\$0.58	7%	33%	\$105.87	0.02	0.03	7th Power Plan

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Paper Mfg	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	Existing	0.02	15	\$0.00	1%	2%	\$0.01	0.00	0.00	7th Power Plan
Paper Mfg	Interior Lighting	Interior Lighting - Timeclocks and Timers	sqft	Existing	0.00	8	\$0.00	7%	7%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Paper Mfg	Interior Lighting	Interior Lighting - Skylights	sqft	Existing	0.00	15	\$1.01	15%	23%	\$0.00	0.00	0.00	AEG Research
Paper Mfg	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	sqft	Existing	0.04	16	\$1.81	5%	40%	\$4.11	0.00	0.00	7th Power Plan
Paper Mfg	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	Existing	0.04	11	\$0.00	15%	50%	\$0.01	0.00	0.00	Illinois TRM
Paper Mfg	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	sqft	Existing	0.05	8	\$0.03	15%	25%	\$0.08	0.00	0.01	7th Power Plan
Paper Mfg	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	Existing	0.03	8	\$0.02	33%	60%	\$0.08	0.01	0.01	Pacific Gas and Electric Research
Paper Mfg	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	Existing	0.03	7	\$1.19	15%	30%	\$4.54	0.00	0.01	AEG Research
Paper Mfg	Process	Process - Conductivity Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Paper Mfg	Process	Process - Timers and Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Paper Mfg	Motors	Process - Timers and Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Paper Mfg	Process	Refrigeration - Floating Head Pressure	employee	Existing	0.73	15	\$0.72	20%	50%	\$0.11	0.00	0.00	RTF Workbook
Paper Mfg	Process	Refrigeration - System Optimization	employee	Existing	1.16	15	\$0.51	20%	50%	\$0.05	0.01	0.01	AEG Research
Paper Mfg	Motors	Pumping System - Equipment Upgrade	employee	Existing	39.53	10	\$5.86	9%	38%	\$0.05	0.16	0.17	7th Power Plan
Paper Mfg	Motors	Pumping System - System Optimization	employee	Existing	29.26	12	\$8.94	9%	38%	\$0.04	0.12	0.12	UNIDO Study on Industrial Energy Efficiency
Paper Mfg	Motors	Pumping System - Variable Speed Drive	employee	Existing	28.94	10	\$9.30	9%	38%	\$0.04	0.12	0.12	UNIDO Study on Industrial Energy Efficiency
Paper Mfg	Motors	Fan System - Equipment Upgrade	employee	Existing	21.20	10	\$2.14	9%	38%	\$0.05	0.09	0.09	UNIDO Study on Industrial Energy Efficiency
Paper Mfg	Motors	Fan System - Flow Optimization	employee	Existing	24.95	10	\$3.54	9%	38%	\$0.02	0.10	0.11	UNIDO Study on Industrial Energy Efficiency
Paper Mfg	Motors	Fan System - Variable Speed Drive	employee	Existing	36.53	10	\$17.80	9%	38%	\$0.06	0.14	0.16	UNIDO Study on Industrial Energy Efficiency

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Paper Mfg	Motors	Compressed Air - Equipment Upgrade	employee	Existing	39.22	10	\$2.85	17%	50%	\$0.04	0.19	0.19	7th Power Plan
Paper Mfg	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	Existing	0.00	15	\$0.00	16%	38%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Paper Mfg	Motors	Compressed Air - Refrigerated Cycling Dryers	employee	Existing	0.00	10	\$0.00	16%	30%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Paper Mfg	Motors	Compressed Air - System Controls	employee	Existing	8.43	10	\$2.04	9%	38%	\$0.03	0.03	0.04	UNIDO Study on Industrial Energy Efficiency
Paper Mfg	Motors	Compressed Air - Leak Management Program	employee	Existing	22.21	10	\$2.05	18%	75%	\$0.04	0.19	0.19	7th Power Plan
Paper Mfg	Motors	Compressed Air - Variable Speed Drive	employee	Existing	15.46	15	\$12.51	26%	45%	\$0.08	0.04	0.05	UNIDO Study on Industrial Energy Efficiency
Paper Mfg	Motors	Compressed Air - Low Pressure-Drop Filters	employee	Existing	0.52	10	\$0.19	17%	50%	\$0.05	0.00	0.00	Illinois TRM
Paper Mfg	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	Existing	3.18	10	\$0.63	17%	50%	\$0.03	0.02	0.02	UNIDO Study on Industrial Energy Efficiency
Paper Mfg	Motors	Compressed Air - Outside Air Intake	employee	Existing	0.00	20	\$0.00	17%	50%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Paper Mfg	Motors	Compressed Air - Receiver Capacity Addition	employee	Existing	3.15	15	\$1.72	17%	50%	\$0.06	0.01	0.02	UNIDO Study on Industrial Energy Efficiency
Paper Mfg	Motors	Material Handling - Variable Speed Drive	employee	Existing	82.83	10	\$30.37	25%	45%	\$0.05	0.23	0.25	7th Power Plan
Paper Mfg	Motors	Motors - Green Rewind (<100 HP)	employee	Existing	1.66	10	\$0.74	10%	50%	\$0.06	0.05	0.05	7th Power Plan
Paper Mfg	Motors	Motors - Green Rewind (100 HP+)	employee	Existing	0.94	10	\$0.26	6%	25%	\$0.04	0.01	0.01	7th Power Plan
Paper Mfg	Motors	Switch from Belt Drive to Direct Drive	employee	Existing	14.34	12	\$3.25	16%	25%	\$0.03	0.10	0.10	2015-mdu-irp-report---volume-iii.pdf
Paper Mfg	Motors	Motors - Synchronous Belts	employee	Existing	3.78	10	\$0.98	16%	36%	\$0.03	0.05	0.06	7th Power Plan
Paper Mfg	Miscellaneous	Agriculture - Engine Block Timer	employee	Existing	20.29	3	\$0.25	0%	0%	\$0.00	0.00	0.00	Vermont TRM
Paper Mfg	Motors	Agriculture - Live Stock Waterer	employee	Existing	93.81	10	\$51.63	0%	0%	\$0.07	0.00	0.00	Ontario Power TRM
Paper Mfg	Process	Dairy - Milk Precoolers	employee	Existing	4.84	15	\$2.29	0%	0%	\$0.05	0.00	0.00	Ontario Power TRM
Paper Mfg	Process	Clean Room: Change Filter Strategy	employee	Existing	7.01	15	\$0.05	0%	0%	\$0.00	0.00	0.00	7th Power Plan

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Paper Mfg	Process	Clean Room: Chiller Optimize	employee	Existing	1.46	15	\$0.14	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Paper Mfg	Process	Clean Room: Clean Room HVAC	employee	Existing	0.88	15	\$0.16	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Paper Mfg	Process	Elec Chip Fab: Solidstate Chiller	employee	Existing	0.87	15	\$0.51	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Paper Mfg	Process	Elec Chip Fab: Eliminate Exhaust	employee	Existing	0.87	15	\$0.19	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Paper Mfg	Process	Elec Chip Fab: Exhaust Injector	employee	Existing	1.72	15	\$0.90	0%	0%	\$0.06	0.00	0.00	7th Power Plan
Paper Mfg	Process	Elec Chip Fab: Reduce Gas Pressure	employee	Existing	1.75	15	\$0.02	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Paper Mfg	Motors	Panel: Hydraulic Press	employee	Existing	125.24	10	\$30.36	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Paper Mfg	Motors	Wood: Replace Pneumatic Conveyor	employee	Existing	137.90	10	\$2.27	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Paper Mfg	Process	Metal: New Arc Furnace	employee	Existing	44.10	10	\$4.66	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Paper Mfg	Process	Paper: Premium Control Large Material	employee	Existing	5.69	10	\$2.90	15%	40%	\$0.07	0.10	0.10	7th Power Plan
Paper Mfg	Process	Paper: Efficient Pulp Screen	employee	Existing	4.62	10	\$0.96	15%	29%	\$0.03	0.05	0.05	7th Power Plan
Paper Mfg	Process	Kraft: Effluent Treatment System	employee	Existing	4.65	10	\$0.39	15%	25%	\$0.01	0.03	0.03	7th Power Plan
Paper Mfg	Motors	Kraft: Efficient Agitator	employee	Existing	233.56	10	\$22.65	15%	29%	\$0.01	0.46	0.47	7th Power Plan
Paper Mfg	Process	Mech Pulp: Premium Process	employee	Existing	0.05	5	\$0.01	15%	38%	\$0.03	0.00	0.00	7th Power Plan
Paper Mfg	Motors	Mech Pulp: Refiner Plate Improvement	employee	Existing	1.93	1	\$0.09	15%	52%	\$0.04	0.01	0.01	7th Power Plan
Paper Mfg	Cooling	Transformer - High Efficiency	employee	Existing	0.54	10	\$2.58	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Paper Mfg	Heating	Transformer - High Efficiency	employee	Existing	3.30	10	\$2.58	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Paper Mfg	Ventilation	Transformer - High Efficiency	employee	Existing	0.05	10	\$2.58	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Paper Mfg	Interior Lighting	Transformer - High Efficiency	employee	Existing	0.49	10	\$2.58	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Paper Mfg	Exterior Lighting	Transformer - High Efficiency	employee	Existing	0.10	10	\$2.58	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Paper Mfg	Motors	Transformer - High Efficiency	employee	Existing	13.72	10	\$2.58	15%	15%	\$0.02	0.00	0.00	7th Power Plan

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Paper Mfg	Process	Transformer - High Efficiency	employee	Existing	2.23	10	\$2.58	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Paper Mfg	Miscellaneous	Transformer - High Efficiency	employee	Existing	0.77	10	\$2.58	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Paper Mfg	Cooling	Strategic Energy Management	employee	Existing	1.53	3	\$15.87	0%	24%	\$0.08	0.00	0.00	AEG Research
Paper Mfg	Heating	Strategic Energy Management	employee	Existing	9.46	3	\$15.87	0%	24%	\$0.08	0.01	0.01	AEG Research
Paper Mfg	Ventilation	Strategic Energy Management	employee	Existing	0.14	3	\$15.87	0%	24%	\$0.08	0.00	0.00	AEG Research
Paper Mfg	Interior Lighting	Strategic Energy Management	employee	Existing	1.40	3	\$15.87	0%	24%	\$0.08	0.00	0.01	AEG Research
Paper Mfg	Exterior Lighting	Strategic Energy Management	employee	Existing	0.29	3	\$15.87	0%	24%	\$0.08	0.00	0.00	AEG Research
Paper Mfg	Motors	Strategic Energy Management	employee	Existing	39.40	3	\$15.87	0%	24%	\$0.08	0.12	0.13	AEG Research
Paper Mfg	Process	Strategic Energy Management	employee	Existing	6.40	3	\$15.87	0%	24%	\$0.08	0.02	0.02	AEG Research
Paper Mfg	Miscellaneous	Strategic Energy Management	employee	Existing	2.20	3	\$15.87	0%	24%	\$0.08	0.01	0.01	AEG Research
Paper Mfg	Interior Lighting	Commissioning	employee	Existing	1.61	3	\$28.05	0%	0%	\$0.16	0.00	0.00	AEG Research
Paper Mfg	Exterior Lighting	Commissioning	employee	Existing	0.34	3	\$28.05	0%	0%	\$0.16	0.00	0.00	AEG Research
Paper Mfg	Motors	Commissioning	employee	Existing	45.24	3	\$28.05	0%	0%	\$0.16	0.00	0.00	AEG Research
Paper Mfg	Process	Commissioning	employee	Existing	7.35	3	\$28.05	0%	0%	\$0.16	0.00	0.00	AEG Research
Paper Mfg	Miscellaneous	Commissioning	employee	Existing	2.53	3	\$28.05	0%	0%	\$0.16	0.00	0.00	AEG Research
Paper Mfg	Interior Lighting	Retrocommissioning	employee	Existing	1.63	3	\$17.81	10%	35%	\$0.10	0.01	0.01	AEG Research
Paper Mfg	Exterior Lighting	Retrocommissioning	employee	Existing	0.34	3	\$17.81	10%	35%	\$0.10	0.00	0.00	AEG Research
Paper Mfg	Motors	Retrocommissioning	employee	Existing	45.73	3	\$17.81	10%	35%	\$0.10	0.15	0.16	AEG Research
Paper Mfg	Process	Retrocommissioning	employee	Existing	7.43	3	\$17.81	10%	35%	\$0.10	0.03	0.03	AEG Research
Paper Mfg	Miscellaneous	Retrocommissioning	employee	Existing	2.56	3	\$17.81	10%	35%	\$0.10	0.01	0.01	AEG Research
Paper Mfg	Motors	Municipal Sewage Treatment	employee	Existing	5.12	12	\$2.95	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Paper Mfg	Motors	Municipal Water Supply Treatment	employee	Existing	0.00	12	\$0.00	0%	0%	\$0.00	0.00	0.00	7th Power Plan

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Paper Mfg	Cooling	Insulation - Ceiling	sqft	New	0.11	45	\$1.28	15%	25%	\$0.16	0.00	0.00	Building Energy Simulation Tool
Paper Mfg	Heating	Insulation - Ceiling	sqft	New	0.52	45	\$1.28	15%	25%	\$0.16	0.00	0.00	Building Energy Simulation Tool
Paper Mfg	Ventilation	Insulation - Ceiling	sqft	New	0.01	45	\$1.28	15%	25%	\$0.16	0.00	0.00	Building Energy Simulation Tool
Paper Mfg	Cooling	Insulation - Ducting	sqft	New	0.04	20	\$0.84	15%	25%	\$1.13	0.00	0.00	Building Energy Simulation Tool
Paper Mfg	Heating	Insulation - Ducting	sqft	New	0.02	20	\$0.84	15%	25%	\$1.13	0.00	0.00	Building Energy Simulation Tool
Paper Mfg	Ventilation	Insulation - Ducting	sqft	New	0.00	20	\$0.84	15%	25%	\$1.13	0.00	0.00	Building Energy Simulation Tool
Paper Mfg	Cooling	Insulation - Wall Cavity	sqft	New	0.00	45	\$0.15	45%	50%	\$0.02	0.00	0.00	Building Energy Simulation Tool
Paper Mfg	Heating	Insulation - Wall Cavity	sqft	New	0.71	45	\$0.15	45%	50%	\$0.02	0.00	0.00	Building Energy Simulation Tool
Paper Mfg	Ventilation	Insulation - Wall Cavity	sqft	New	0.01	45	\$0.15	45%	50%	\$0.02	0.00	0.00	Building Energy Simulation Tool
Paper Mfg	Cooling	HVAC - Duct Repair and Sealing	sqft	New	0.01	18	\$0.00	15%	25%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Paper Mfg	Heating	HVAC - Duct Repair and Sealing	sqft	New	0.05	18	\$0.00	15%	25%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Paper Mfg	Ventilation	HVAC - Duct Repair and Sealing	sqft	New	0.00	18	\$0.00	15%	25%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Paper Mfg	Cooling	Chiller - Chilled Water Reset	sqft	New	0.04	10	\$0.01	15%	45%	\$0.03	0.00	0.00	AEG-BEST
Paper Mfg	Cooling	Chiller - Chilled Water Variable-Flow System	sqft	New	0.20	15	\$0.50	15%	60%	\$0.24	0.00	0.00	AEG-BEST
Paper Mfg	Cooling	Chiller - Variable Speed Fans	sqft	New	0.07	15	\$0.03	15%	75%	\$0.04	0.00	0.00	New Jersey TRM
Paper Mfg	Cooling	HVAC - Economizer	sqft	New	0.00	10	\$0.25	18%	30%	\$83.39	0.00	0.00	AEG-BEST
Paper Mfg	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.25	15%	35%	\$12.70	0.00	0.00	7th Power Plan
Paper Mfg	Cooling	Destratification Fans (HVLS)	sqft	New	0.14	15	\$0.63	15%	50%	\$0.05	0.00	0.00	AEG Research
Paper Mfg	Heating	Destratification Fans (HVLS)	sqft	New	1.30	15	\$0.63	15%	50%	\$0.05	0.01	0.01	AEG Research
Paper Mfg	Cooling	RTU - Maintenance	sqft	New	0.07	3	\$0.07	15%	75%	\$0.29	0.00	0.00	AEG Research
Paper Mfg	Cooling	Thermostat - WiFi/Interactive	sqft	New	0.26	5	\$0.66	5%	15%	\$0.09	0.00	0.00	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Paper Mfg	Heating	Thermostat - WiFi/Interactive	sqft	New	1.23	5	\$0.66	5%	15%	\$0.09	0.00	0.00	7th Power Plan
Paper Mfg	Ventilation	Thermostat - WiFi/Interactive	sqft	New	0.02	5	\$0.66	5%	15%	\$0.09	0.00	0.00	7th Power Plan
Paper Mfg	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.00	15	\$0.35	22%	41%	\$89.68	0.01	0.01	7th Power Plan
Paper Mfg	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.00	15	\$0.58	22%	41%	\$105.70	0.01	0.01	7th Power Plan
Paper Mfg	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	New	0.02	15	\$0.00	1%	2%	\$0.01	0.00	0.00	7th Power Plan
Paper Mfg	Interior Lighting	Interior Lighting - Timeclocks and Timers	sqft	New	0.00	8	\$0.00	7%	7%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Paper Mfg	Interior Lighting	Interior Lighting - Skylights	sqft	New	0.00	15	\$1.01	18%	24%	\$0.00	0.00	0.00	AEG Research
Paper Mfg	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	sqft	New	0.03	16	\$1.81	5%	40%	\$4.11	0.00	0.00	7th Power Plan
Paper Mfg	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	New	0.03	11	\$0.00	15%	50%	\$0.01	0.00	0.00	Illinois TRM
Paper Mfg	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	sqft	New	0.04	8	\$0.03	15%	25%	\$0.08	0.00	0.00	7th Power Plan
Paper Mfg	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	New	0.02	8	\$0.02	44%	60%	\$0.08	0.00	0.00	Pacific Gas and Electric Research
Paper Mfg	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	New	0.02	7	\$1.19	15%	30%	\$4.56	0.00	0.00	AEG Research
Paper Mfg	Process	Process - Conductivity Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Paper Mfg	Process	Process - Timers and Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Paper Mfg	Motors	Process - Timers and Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Paper Mfg	Process	Refrigeration - Floating Head Pressure	employee	New	0.73	15	\$0.51	20%	50%	\$0.08	0.00	0.00	RTF Workbook
Paper Mfg	Process	Refrigeration - System Optimization	employee	New	1.18	15	\$0.18	20%	50%	\$0.02	0.00	0.00	AEG Research
Paper Mfg	Motors	Pumping System - Equipment Upgrade	employee	New	40.46	10	\$5.86	9%	38%	\$0.05	0.02	0.02	7th Power Plan
Paper Mfg	Motors	Pumping System - System Optimization	employee	New	30.17	12	\$8.94	9%	38%	\$0.04	0.03	0.03	UNIDO Study on Industrial Energy Efficiency

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Paper Mfg	Motors	Pumping System - Variable Speed Drive	employee	New	30.01	10	\$9.30	9%	38%	\$0.04	0.02	0.02	UNIDO Study on Industrial Energy Efficiency
Paper Mfg	Motors	Fan System - Equipment Upgrade	employee	New	21.78	10	\$2.14	9%	38%	\$0.05	0.02	0.02	UNIDO Study on Industrial Energy Efficiency
Paper Mfg	Motors	Fan System - Flow Optimization	employee	New	25.48	10	\$3.54	9%	38%	\$0.02	0.02	0.02	UNIDO Study on Industrial Energy Efficiency
Paper Mfg	Motors	Fan System - Variable Speed Drive	employee	New	38.30	10	\$17.80	9%	38%	\$0.06	0.03	0.03	UNIDO Study on Industrial Energy Efficiency
Paper Mfg	Motors	Compressed Air - Equipment Upgrade	employee	New	39.22	10	\$2.85	17%	50%	\$0.04	0.03	0.03	7th Power Plan
Paper Mfg	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	New	0.00	15	\$0.00	16%	38%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Paper Mfg	Motors	Compressed Air - Refrigerated Cycling Dryers	employee	New	0.00	10	\$0.00	16%	30%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Paper Mfg	Motors	Compressed Air - System Controls	employee	New	8.72	10	\$2.04	9%	38%	\$0.03	0.01	0.01	UNIDO Study on Industrial Energy Efficiency
Paper Mfg	Motors	Compressed Air - Leak Management Program	employee	New	22.33	10	\$2.05	18%	75%	\$0.04	0.03	0.03	7th Power Plan
Paper Mfg	Motors	Compressed Air - Variable Speed Drive	employee	New	16.18	15	\$12.51	26%	45%	\$0.08	0.01	0.01	UNIDO Study on Industrial Energy Efficiency
Paper Mfg	Motors	Compressed Air - Low Pressure-Drop Filters	employee	New	0.54	10	\$0.19	17%	50%	\$0.05	0.00	0.00	Illinois TRM
Paper Mfg	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	New	3.28	10	\$0.63	17%	50%	\$0.03	0.00	0.00	UNIDO Study on Industrial Energy Efficiency
Paper Mfg	Motors	Compressed Air - Outside Air Intake	employee	New	0.00	20	\$0.00	17%	50%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Paper Mfg	Motors	Compressed Air - Receiver Capacity Addition	employee	New	3.26	15	\$1.72	17%	50%	\$0.06	0.00	0.00	UNIDO Study on Industrial Energy Efficiency
Paper Mfg	Motors	Material Handling - Variable Speed Drive	employee	New	86.16	10	\$30.37	25%	45%	\$0.05	0.05	0.05	7th Power Plan
Paper Mfg	Motors	Motors - Green Rewind (<100 HP)	employee	New	1.74	10	\$0.74	10%	50%	\$0.06	0.01	0.01	7th Power Plan
Paper Mfg	Motors	Motors - Green Rewind (100 HP+)	employee	New	0.98	10	\$0.26	6%	25%	\$0.04	0.00	0.00	7th Power Plan
Paper Mfg	Motors	Switch from Belt Drive to Direct Drive	employee	New	14.75	12	\$3.25	16%	25%	\$0.03	0.02	0.02	2015-mdu-irp-report---volume-iii.pdf
Paper Mfg	Motors	Motors - Synchronous Belts	employee	New	3.91	10	\$0.98	16%	36%	\$0.03	0.01	0.01	7th Power Plan

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Paper Mfg	Miscellaneous	Agriculture - Engine Block Timer	employee	New	20.29	3	\$0.25	0%	0%	\$0.00	0.00	0.00	Vermont TRM
Paper Mfg	Motors	Agriculture - Live Stock Waterer	employee	New	98.72	10	\$51.63	0%	0%	\$0.07	0.00	0.00	Ontario Power TRM
Paper Mfg	Process	Dairy - Milk Precoolers	employee	New	4.89	15	\$2.29	0%	0%	\$0.05	0.00	0.00	Ontario Power TRM
Paper Mfg	Process	Clean Room: Change Filter Strategy	employee	New	7.01	15	\$0.05	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Paper Mfg	Process	Clean Room: Chiller Optimize	employee	New	1.46	15	\$0.14	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Paper Mfg	Process	Clean Room: Clean Room HVAC	employee	New	0.88	15	\$0.16	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Paper Mfg	Process	Elec Chip Fab: Solidstate Chiller	employee	New	0.88	15	\$0.51	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Paper Mfg	Process	Elec Chip Fab: Eliminate Exhaust	employee	New	0.87	15	\$0.19	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Paper Mfg	Process	Elec Chip Fab: Exhaust Injector	employee	New	1.74	15	\$0.90	0%	0%	\$0.06	0.00	0.00	7th Power Plan
Paper Mfg	Process	Elec Chip Fab: Reduce Gas Pressure	employee	New	1.75	15	\$0.02	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Paper Mfg	Motors	Panel: Hydraulic Press	employee	New	129.47	10	\$30.36	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Paper Mfg	Motors	Wood: Replace Pneumatic Conveyor	employee	New	137.90	10	\$2.27	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Paper Mfg	Process	Metal: New Arc Furnace	employee	New	44.22	10	\$4.66	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Paper Mfg	Process	Paper: Premium Control Large Material	employee	New	5.75	10	\$2.90	15%	40%	\$0.07	0.03	0.03	7th Power Plan
Paper Mfg	Process	Paper: Efficient Pulp Screen	employee	New	4.63	10	\$0.96	15%	29%	\$0.03	0.01	0.01	7th Power Plan
Paper Mfg	Process	Kraft: Effluent Treatment System	employee	New	4.65	10	\$0.39	15%	25%	\$0.01	0.01	0.01	7th Power Plan
Paper Mfg	Motors	Kraft: Efficient Agitator	employee	New	235.64	10	\$22.65	15%	29%	\$0.01	0.13	0.13	7th Power Plan
Paper Mfg	Process	Mech Pulp: Premium Process	employee	New	0.05	5	\$0.01	15%	38%	\$0.03	0.00	0.00	7th Power Plan
Paper Mfg	Motors	Mech Pulp: Refiner Plate Improvement	employee	New	2.03	1	\$0.09	15%	52%	\$0.04	0.00	0.00	7th Power Plan
Paper Mfg	Cooling	Transformer - High Efficiency	employee	New	0.48	10	\$2.56	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Paper Mfg	Heating	Transformer - High Efficiency	employee	New	3.15	10	\$2.56	15%	15%	\$0.02	0.00	0.00	7th Power Plan

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Paper Mfg	Ventilation	Transformer - High Efficiency	employee	New	0.03	10	\$2.56	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Paper Mfg	Interior Lighting	Transformer - High Efficiency	employee	New	0.38	10	\$2.56	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Paper Mfg	Exterior Lighting	Transformer - High Efficiency	employee	New	0.07	10	\$2.56	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Paper Mfg	Motors	Transformer - High Efficiency	employee	New	14.44	10	\$2.56	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Paper Mfg	Process	Transformer - High Efficiency	employee	New	2.28	10	\$2.56	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Paper Mfg	Miscellaneous	Transformer - High Efficiency	employee	New	0.73	10	\$2.56	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Paper Mfg	Cooling	Strategic Energy Management	employee	New	1.38	3	\$15.71	0%	24%	\$0.08	0.00	0.00	AEG Research
Paper Mfg	Heating	Strategic Energy Management	employee	New	9.08	3	\$15.71	0%	24%	\$0.08	0.00	0.00	AEG Research
Paper Mfg	Ventilation	Strategic Energy Management	employee	New	0.08	3	\$15.71	0%	24%	\$0.08	0.00	0.00	AEG Research
Paper Mfg	Interior Lighting	Strategic Energy Management	employee	New	1.08	3	\$15.71	0%	24%	\$0.08	0.00	0.00	AEG Research
Paper Mfg	Exterior Lighting	Strategic Energy Management	employee	New	0.21	3	\$15.71	0%	24%	\$0.08	0.00	0.00	AEG Research
Paper Mfg	Motors	Strategic Energy Management	employee	New	41.71	3	\$15.71	0%	24%	\$0.08	0.00	0.00	AEG Research
Paper Mfg	Process	Strategic Energy Management	employee	New	6.57	3	\$15.71	0%	24%	\$0.08	0.00	0.00	AEG Research
Paper Mfg	Miscellaneous	Strategic Energy Management	employee	New	2.10	3	\$15.71	0%	24%	\$0.08	0.00	0.00	AEG Research
Paper Mfg	Interior Lighting	Commissioning	employee	New	1.25	3	\$28.14	10%	35%	\$0.16	0.00	0.00	AEG Research
Paper Mfg	Exterior Lighting	Commissioning	employee	New	0.25	3	\$28.14	10%	35%	\$0.16	0.00	0.00	AEG Research
Paper Mfg	Motors	Commissioning	employee	New	48.08	3	\$28.14	10%	35%	\$0.16	0.00	0.00	AEG Research
Paper Mfg	Process	Commissioning	employee	New	7.58	3	\$28.14	10%	35%	\$0.16	0.00	0.00	AEG Research
Paper Mfg	Miscellaneous	Commissioning	employee	New	2.42	3	\$28.14	10%	35%	\$0.16	0.00	0.00	AEG Research
Paper Mfg	Interior Lighting	Retrocommissioning	employee	New	1.25	3	\$17.87	0%	0%	\$0.10	0.00	0.00	AEG Research

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Paper Mfg	Exterior Lighting	Retrocommissioning	employee	New	0.25	3	\$17.87	0%	0%	\$0.10	0.00	0.00	AEG Research
Paper Mfg	Motors	Retrocommissioning	employee	New	48.13	3	\$17.87	0%	0%	\$0.10	0.00	0.00	AEG Research
Paper Mfg	Process	Retrocommissioning	employee	New	7.58	3	\$17.87	0%	0%	\$0.10	0.00	0.00	AEG Research
Paper Mfg	Miscellaneous	Retrocommissioning	employee	New	2.42	3	\$17.87	0%	0%	\$0.10	0.00	0.00	AEG Research
Paper Mfg	Motors	Municipal Sewage Treatment	employee	New	5.36	12	\$2.95	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Paper Mfg	Motors	Municipal Water Supply Treatment	employee	New	0.00	12	\$0.00	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Petroleum Refining	Cooling	Insulation - Ceiling	sqft	Existing	0.12	45	\$1.28	15%	25%	\$0.15	6.48	6.90	Building Energy Simulation Tool
Petroleum Refining	Heating	Insulation - Ceiling	sqft	Existing	0.55	45	\$1.28	15%	25%	\$0.15	31.97	32.84	Building Energy Simulation Tool
Petroleum Refining	Ventilation	Insulation - Ceiling	sqft	Existing	0.02	45	\$1.28	15%	25%	\$0.15	4.61	5.27	Building Energy Simulation Tool
Petroleum Refining	Cooling	Insulation - Ducting	sqft	Existing	0.05	20	\$0.84	15%	25%	\$1.05	2.37	2.60	Building Energy Simulation Tool
Petroleum Refining	Heating	Insulation - Ducting	sqft	Existing	0.02	20	\$0.84	15%	25%	\$1.05	1.33	1.38	Building Energy Simulation Tool
Petroleum Refining	Ventilation	Insulation - Ducting	sqft	Existing	0.00	20	\$0.84	15%	25%	\$1.05	0.19	0.22	Building Energy Simulation Tool
Petroleum Refining	Cooling	Insulation - Wall Cavity	sqft	Existing	0.00	45	\$0.15	45%	50%	\$0.02	0.05	0.05	Building Energy Simulation Tool
Petroleum Refining	Heating	Insulation - Wall Cavity	sqft	Existing	0.76	45	\$0.15	45%	50%	\$0.02	22.70	22.76	Building Energy Simulation Tool
Petroleum Refining	Ventilation	Insulation - Wall Cavity	sqft	Existing	0.02	45	\$0.15	45%	50%	\$0.02	3.10	3.52	Building Energy Simulation Tool
Petroleum Refining	Cooling	HVAC - Duct Repair and Sealing	sqft	Existing	0.02	18	\$0.00	15%	25%	\$0.00	0.87	0.90	Building Energy Simulation Tool
Petroleum Refining	Heating	HVAC - Duct Repair and Sealing	sqft	Existing	0.05	18	\$0.00	15%	25%	\$0.00	3.20	3.21	Building Energy Simulation Tool
Petroleum Refining	Ventilation	HVAC - Duct Repair and Sealing	sqft	Existing	0.00	18	\$0.00	15%	25%	\$0.00	0.44	0.50	Building Energy Simulation Tool
Petroleum Refining	Cooling	Chiller - Chilled Water Reset	sqft	Existing	0.05	10	\$0.01	15%	45%	\$0.03	2.08	2.23	AEG-BEST
Petroleum Refining	Cooling	Chiller - Chilled Water Variable-Flow System	sqft	Existing	0.25	15	\$0.50	15%	60%	\$0.20	16.44	18.17	AEG-BEST

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Petroleum Refining	Cooling	Chiller - Variable Speed Fans	sqft	Existing	0.09	15	\$0.03	15%	75%	\$0.04	8.48	9.05	New Jersey TRM
Petroleum Refining	Cooling	HVAC - Economizer	sqft	Existing	16.31	10	\$0.25	18%	30%	\$0.00	8.68	9.16	AEG-BEST
Petroleum Refining	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.25	15%	35%	\$10.61	0.93	1.14	7th Power Plan
Petroleum Refining	Cooling	Destratification Fans (HVLS)	sqft	Existing	0.16	15	\$0.63	15%	50%	\$0.05	36.07	38.52	AEG Research
Petroleum Refining	Heating	Destratification Fans (HVLS)	sqft	Existing	1.39	15	\$0.63	15%	50%	\$0.05	351.06	353.25	AEG Research
Petroleum Refining	Cooling	RTU - Maintenance	sqft	Existing	0.08	3	\$0.07	15%	75%	\$0.28	15.09	17.01	AEG Research
Petroleum Refining	Cooling	Thermostat - WiFi/Interactive	sqft	Existing	0.29	5	\$0.66	5%	15%	\$0.09	14.91	16.06	7th Power Plan
Petroleum Refining	Heating	Thermostat - WiFi/Interactive	sqft	Existing	1.29	5	\$0.66	5%	15%	\$0.09	75.19	77.47	7th Power Plan
Petroleum Refining	Ventilation	Thermostat - WiFi/Interactive	sqft	Existing	0.04	5	\$0.66	5%	15%	\$0.09	10.80	12.40	7th Power Plan
Petroleum Refining	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	36.52	15	\$0.35	7%	33%	\$0.00	111.83	138.75	7th Power Plan
Petroleum Refining	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	52.32	15	\$0.58	7%	33%	\$0.00	165.90	199.35	7th Power Plan
Petroleum Refining	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	Existing	0.02	15	\$0.00	1%	2%	\$0.01	0.66	0.93	7th Power Plan
Petroleum Refining	Interior Lighting	Interior Lighting - Timeclocks and Timers	sqft	Existing	0.00	8	\$0.00	7%	7%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Petroleum Refining	Interior Lighting	Interior Lighting - Skylights	sqft	Existing	0.00	15	\$1.01	15%	23%	\$0.00	0.00	0.00	AEG Research
Petroleum Refining	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	sqft	Existing	0.03	16	\$1.81	5%	40%	\$4.11	21.95	31.02	7th Power Plan
Petroleum Refining	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	Existing	0.03	11	\$0.00	15%	50%	\$0.01	21.98	30.54	Illinois TRM
Petroleum Refining	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	sqft	Existing	0.05	8	\$0.03	15%	25%	\$0.08	29.69	40.38	7th Power Plan
Petroleum Refining	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	Existing	0.03	8	\$0.02	33%	60%	\$0.08	41.33	57.75	Pacific Gas and Electric Research
Petroleum Refining	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	Existing	0.03	7	\$1.19	15%	30%	\$4.54	25.88	38.18	AEG Research

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Petroleum Refining	Process	Process - Conductivity Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Petroleum Refining	Process	Process - Timers and Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Petroleum Refining	Motors	Process - Timers and Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Petroleum Refining	Process	Refrigeration - Floating Head Pressure	employee	Existing	2,806.07	15	\$2,742.08	20%	50%	\$0.11	124.45	125.08	RTF Workbook
Petroleum Refining	Process	Refrigeration - System Optimization	employee	Existing	4,517.69	15	\$1,930.92	20%	50%	\$0.05	200.98	200.98	AEG Research
Petroleum Refining	Motors	Pumping System - Equipment Upgrade	employee	Existing	136,811.61	10	\$19,994.74	9%	38%	\$0.05	5,745.73	5,884.05	7th Power Plan
Petroleum Refining	Motors	Pumping System - System Optimization	employee	Existing	99,774.54	12	\$30,471.99	9%	38%	\$0.04	4,058.36	4,235.65	UNIDO Study on Industrial Energy Efficiency
Petroleum Refining	Motors	Pumping System - Variable Speed Drive	employee	Existing	97,618.23	10	\$31,702.24	9%	38%	\$0.04	3,917.12	4,166.18	UNIDO Study on Industrial Energy Efficiency
Petroleum Refining	Motors	Fan System - Equipment Upgrade	employee	Existing	12,385.10	10	\$1,236.21	9%	38%	\$0.05	512.76	521.87	UNIDO Study on Industrial Energy Efficiency
Petroleum Refining	Motors	Fan System - Flow Optimization	employee	Existing	14,610.02	10	\$2,045.36	9%	38%	\$0.02	604.18	615.91	UNIDO Study on Industrial Energy Efficiency
Petroleum Refining	Motors	Fan System - Variable Speed Drive	employee	Existing	20,843.59	10	\$10,292.16	9%	38%	\$0.06	823.68	894.68	UNIDO Study on Industrial Energy Efficiency
Petroleum Refining	Motors	Compressed Air - Equipment Upgrade	employee	Existing	64,578.74	10	\$4,699.09	17%	50%	\$0.04	3,211.00	3,211.00	7th Power Plan
Petroleum Refining	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	Existing	0.00	15	\$0.00	16%	38%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Petroleum Refining	Motors	Compressed Air - Refrigerated Cycling Dryers	employee	Existing	0.00	10	\$0.00	16%	30%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Petroleum Refining	Motors	Compressed Air - System Controls	employee	Existing	13,746.41	10	\$3,359.85	9%	38%	\$0.03	562.98	599.93	UNIDO Study on Industrial Energy Efficiency
Petroleum Refining	Motors	Compressed Air - Leak Management Program	employee	Existing	36,457.90	10	\$3,377.47	18%	75%	\$0.04	3,088.61	3,119.66	7th Power Plan
Petroleum Refining	Motors	Compressed Air - Variable Speed Drive	employee	Existing	25,139.27	15	\$20,599.03	26%	45%	\$0.08	675.58	737.84	UNIDO Study on Industrial Energy Efficiency
Petroleum Refining	Motors	Compressed Air - Low Pressure-Drop Filters	employee	Existing	838.12	10	\$317.49	17%	50%	\$0.05	39.42	43.05	Illinois TRM
Petroleum Refining	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	Existing	5,239.40	10	\$1,029.95	17%	50%	\$0.03	252.98	265.22	UNIDO Study on Industrial Energy Efficiency

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Petroleum Refining	Motors	Compressed Air - Outside Air Intake	employee	Existing	0.00	20	\$0.00	17%	50%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Petroleum Refining	Motors	Compressed Air - Receiver Capacity Addition	employee	Existing	5,129.12	15	\$2,832.37	17%	50%	\$0.06	244.42	261.57	UNIDO Study on Industrial Energy Efficiency
Petroleum Refining	Motors	Material Handling - Variable Speed Drive	employee	Existing	28,207.93	10	\$10,558.21	25%	45%	\$0.05	786.33	848.01	7th Power Plan
Petroleum Refining	Motors	Motors - Green Rewind (<100 HP)	employee	Existing	2,010.45	10	\$908.54	10%	50%	\$0.06	558.36	605.26	7th Power Plan
Petroleum Refining	Motors	Motors - Green Rewind (100 HP+)	employee	Existing	1,141.53	10	\$322.48	6%	25%	\$0.04	152.75	162.37	7th Power Plan
Petroleum Refining	Motors	Switch from Belt Drive to Direct Drive	employee	Existing	17,586.68	12	\$3,988.13	16%	25%	\$0.03	1,196.29	1,242.65	2015-mdu-irp-report---volume-iii.pdf
Petroleum Refining	Motors	Motors - Synchronous Belts	employee	Existing	4,583.11	10	\$1,199.78	16%	36%	\$0.03	656.14	700.58	7th Power Plan
Petroleum Refining	Miscellaneous	Agriculture - Engine Block Timer	employee	Existing	9,804.02	3	\$120.94	0%	0%	\$0.00	0.00	0.00	Vermont TRM
Petroleum Refining	Motors	Agriculture - Live Stock Waterer	employee	Existing	316,832.91	10	\$176,089.04	0%	0%	\$0.07	0.00	0.00	Ontario Power TRM
Petroleum Refining	Process	Dairy - Milk Precoolers	employee	Existing	18,707.13	15	\$8,725.53	0%	0%	\$0.05	0.00	0.00	Ontario Power TRM
Petroleum Refining	Process	Clean Room: Change Filter Strategy	employee	Existing	606.03	15	\$4.47	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Petroleum Refining	Process	Clean Room: Chiller Optimize	employee	Existing	5,580.41	15	\$516.67	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Petroleum Refining	Process	Clean Room: Clean Room HVAC	employee	Existing	3,388.27	15	\$623.68	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Petroleum Refining	Process	Elec Chip Fab: Solidstate Chiller	employee	Existing	3,367.28	15	\$1,959.00	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Petroleum Refining	Process	Elec Chip Fab: Eliminate Exhaust	employee	Existing	75.75	15	\$16.08	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Petroleum Refining	Process	Elec Chip Fab: Exhaust Injector	employee	Existing	150.57	15	\$77.57	0%	0%	\$0.06	0.00	0.00	7th Power Plan
Petroleum Refining	Process	Elec Chip Fab: Reduce Gas Pressure	employee	Existing	151.51	15	\$1.56	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Petroleum Refining	Motors	Panel: Hydraulic Press	employee	Existing	43,001.22	10	\$10,551.88	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Petroleum Refining	Motors	Wood: Replace Pneumatic Conveyor	employee	Existing	47,934.34	10	\$790.24	0%	0%	\$0.00	0.00	0.00	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Petroleum Refining	Process	Metal: New Arc Furnace	employee	Existing	27,787.59	10	\$2,916.93	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Petroleum Refining	Process	Paper: Premium Control Large Material	employee	Existing	5,563.30	10	\$2,811.31	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Petroleum Refining	Process	Paper: Efficient Pulp Screen	employee	Existing	4,501.19	10	\$926.05	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Petroleum Refining	Process	Kraft: Effluent Treatment System	employee	Existing	4,501.19	10	\$379.66	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Petroleum Refining	Motors	Kraft: Efficient Agitator	employee	Existing	80,690.82	10	\$7,874.11	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Petroleum Refining	Process	Mech Pulp: Premium Process	employee	Existing	50.07	5	\$6.50	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Petroleum Refining	Motors	Mech Pulp: Refiner Plate Improvement	employee	Existing	664.54	1	\$30.04	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Petroleum Refining	Cooling	Transformer - High Efficiency	employee	Existing	494.68	10	\$2,862.60	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Petroleum Refining	Heating	Transformer - High Efficiency	employee	Existing	3,030.62	10	\$2,862.60	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Petroleum Refining	Ventilation	Transformer - High Efficiency	employee	Existing	45.61	10	\$2,862.60	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Petroleum Refining	Interior Lighting	Transformer - High Efficiency	employee	Existing	312.12	10	\$2,862.60	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Petroleum Refining	Exterior Lighting	Transformer - High Efficiency	employee	Existing	67.50	10	\$2,862.60	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Petroleum Refining	Motors	Transformer - High Efficiency	employee	Existing	16,662.74	10	\$2,862.60	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Petroleum Refining	Process	Transformer - High Efficiency	employee	Existing	2,228.01	10	\$2,862.60	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Petroleum Refining	Miscellaneous	Transformer - High Efficiency	employee	Existing	371.07	10	\$2,862.60	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Petroleum Refining	Cooling	Strategic Energy Management	employee	Existing	1,397.73	3	\$17,581.17	0%	5%	\$0.08	1.69	1.86	AEG Research
Petroleum Refining	Heating	Strategic Energy Management	employee	Existing	8,698.08	3	\$17,581.17	0%	5%	\$0.08	11.93	12.37	AEG Research
Petroleum Refining	Ventilation	Strategic Energy Management	employee	Existing	130.36	3	\$17,581.17	0%	5%	\$0.08	0.92	1.08	AEG Research
Petroleum Refining	Interior Lighting	Strategic Energy Management	employee	Existing	891.10	3	\$17,581.17	0%	5%	\$0.08	5.46	7.16	AEG Research

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Petroleum Refining	Exterior Lighting	Strategic Energy Management	employee	Existing	193.70	3	\$17,581.17	0%	5%	\$0.08	1.21	1.61	AEG Research
Petroleum Refining	Motors	Strategic Energy Management	employee	Existing	47,757.46	3	\$17,581.17	0%	5%	\$0.08	313.49	337.71	AEG Research
Petroleum Refining	Process	Strategic Energy Management	employee	Existing	6,383.73	3	\$17,581.17	0%	5%	\$0.08	44.33	44.97	AEG Research
Petroleum Refining	Miscellaneous	Strategic Energy Management	employee	Existing	1,062.15	3	\$17,581.17	0%	5%	\$0.08	9.39	7.73	AEG Research
Petroleum Refining	Interior Lighting	Commissioning	employee	Existing	1,027.29	3	\$32,766.08	0%	0%	\$0.16	0.00	0.00	AEG Research
Petroleum Refining	Exterior Lighting	Commissioning	employee	Existing	223.31	3	\$32,766.08	0%	0%	\$0.16	0.00	0.00	AEG Research
Petroleum Refining	Motors	Commissioning	employee	Existing	55,049.70	3	\$32,766.08	0%	0%	\$0.16	0.00	0.00	AEG Research
Petroleum Refining	Process	Commissioning	employee	Existing	7,358.19	3	\$32,766.08	0%	0%	\$0.16	0.00	0.00	AEG Research
Petroleum Refining	Miscellaneous	Commissioning	employee	Existing	1,224.14	3	\$32,766.08	0%	0%	\$0.16	0.00	0.00	AEG Research
Petroleum Refining	Interior Lighting	Retrocommissioning	employee	Existing	1,040.40	3	\$20,800.56	5%	39%	\$0.10	43.92	56.90	AEG Research
Petroleum Refining	Exterior Lighting	Retrocommissioning	employee	Existing	224.99	3	\$20,800.56	5%	39%	\$0.10	9.64	12.71	AEG Research
Petroleum Refining	Motors	Retrocommissioning	employee	Existing	55,542.48	3	\$20,800.56	5%	39%	\$0.10	2,501.26	2,670.46	AEG Research
Petroleum Refining	Process	Retrocommissioning	employee	Existing	7,426.71	3	\$20,800.56	5%	39%	\$0.10	353.67	355.67	AEG Research
Petroleum Refining	Miscellaneous	Retrocommissioning	employee	Existing	1,236.89	3	\$20,800.56	5%	39%	\$0.10	74.94	61.22	AEG Research
Petroleum Refining	Motors	Municipal Sewage Treatment	employee	Existing	17,215.10	12	\$10,051.75	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Petroleum Refining	Motors	Municipal Water Supply Treatment	employee	Existing	0.00	12	\$0.00	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Petroleum Refining	Cooling	Insulation - Ceiling	sqft	New	0.11	45	\$1.28	15%	25%	\$0.16	2.69	2.73	Building Energy Simulation Tool
Petroleum Refining	Heating	Insulation - Ceiling	sqft	New	0.52	45	\$1.28	15%	25%	\$0.16	13.45	13.45	Building Energy Simulation Tool
Petroleum Refining	Ventilation	Insulation - Ceiling	sqft	New	0.01	45	\$1.28	15%	25%	\$0.16	1.60	1.75	Building Energy Simulation Tool

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Petroleum Refining	Cooling	Insulation - Ducting	sqft	New	0.04	20	\$0.84	15%	25%	\$1.13	1.04	1.05	Building Energy Simulation Tool
Petroleum Refining	Heating	Insulation - Ducting	sqft	New	0.02	20	\$0.84	15%	25%	\$1.13	0.57	0.57	Building Energy Simulation Tool
Petroleum Refining	Ventilation	Insulation - Ducting	sqft	New	0.00	20	\$0.84	15%	25%	\$1.13	0.07	0.07	Building Energy Simulation Tool
Petroleum Refining	Cooling	Insulation - Wall Cavity	sqft	New	0.00	45	\$0.15	45%	50%	\$0.02	0.02	0.02	Building Energy Simulation Tool
Petroleum Refining	Heating	Insulation - Wall Cavity	sqft	New	0.71	45	\$0.15	45%	50%	\$0.02	9.14	9.15	Building Energy Simulation Tool
Petroleum Refining	Ventilation	Insulation - Wall Cavity	sqft	New	0.01	45	\$0.15	45%	50%	\$0.02	1.07	1.17	Building Energy Simulation Tool
Petroleum Refining	Cooling	HVAC - Duct Repair and Sealing	sqft	New	0.01	18	\$0.00	15%	25%	\$0.00	0.34	0.34	Building Energy Simulation Tool
Petroleum Refining	Heating	HVAC - Duct Repair and Sealing	sqft	New	0.05	18	\$0.00	15%	25%	\$0.00	1.27	1.27	Building Energy Simulation Tool
Petroleum Refining	Ventilation	HVAC - Duct Repair and Sealing	sqft	New	0.00	18	\$0.00	15%	25%	\$0.00	0.15	0.16	Building Energy Simulation Tool
Petroleum Refining	Cooling	Chiller - Chilled Water Reset	sqft	New	0.04	10	\$0.01	15%	45%	\$0.03	0.25	0.26	AEG-BEST
Petroleum Refining	Cooling	Chiller - Chilled Water Variable-Flow System	sqft	New	0.20	15	\$0.50	15%	60%	\$0.24	3.29	3.40	AEG-BEST
Petroleum Refining	Cooling	Chiller - Variable Speed Fans	sqft	New	0.07	15	\$0.03	15%	75%	\$0.04	1.63	1.68	New Jersey TRM
Petroleum Refining	Cooling	HVAC - Economizer	sqft	New	14.03	10	\$0.25	18%	30%	\$0.00	1.11	1.15	AEG-BEST
Petroleum Refining	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.25	15%	35%	\$12.70	0.18	0.20	7th Power Plan
Petroleum Refining	Cooling	Destratification Fans (HVLS)	sqft	New	0.14	15	\$0.63	15%	50%	\$0.05	8.06	8.31	AEG Research
Petroleum Refining	Heating	Destratification Fans (HVLS)	sqft	New	1.30	15	\$0.63	15%	50%	\$0.05	78.53	78.72	AEG Research
Petroleum Refining	Cooling	RTU - Maintenance	sqft	New	0.07	3	\$0.07	15%	75%	\$0.29	0.28	0.30	AEG Research
Petroleum Refining	Cooling	Thermostat - WiFi/Interactive	sqft	New	0.26	5	\$0.66	5%	15%	\$0.09	1.05	1.09	7th Power Plan
Petroleum Refining	Heating	Thermostat - WiFi/Interactive	sqft	New	1.23	5	\$0.66	5%	15%	\$0.09	5.27	5.30	7th Power Plan

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Petroleum Refining	Ventilation	Thermostat - WiFi/Interactive	sqft	New	0.02	5	\$0.66	5%	15%	\$0.09	0.63	0.73	7th Power Plan
Petroleum Refining	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	28.60	15	\$0.35	22%	41%	\$0.00	60.30	70.47	7th Power Plan
Petroleum Refining	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	39.24	15	\$0.58	22%	41%	\$0.00	82.14	96.74	7th Power Plan
Petroleum Refining	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	New	0.02	15	\$0.00	1%	2%	\$0.01	0.13	0.16	7th Power Plan
Petroleum Refining	Interior Lighting	Interior Lighting - Timeclocks and Timers	sqft	New	0.00	8	\$0.00	7%	7%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Petroleum Refining	Interior Lighting	Interior Lighting - Skylights	sqft	New	0.00	15	\$1.01	18%	24%	\$0.00	0.00	0.00	AEG Research
Petroleum Refining	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	sqft	New	0.03	16	\$1.81	5%	40%	\$4.11	5.24	6.61	7th Power Plan
Petroleum Refining	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	New	0.03	11	\$0.00	15%	50%	\$0.01	3.37	4.48	Illinois TRM
Petroleum Refining	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	sqft	New	0.04	8	\$0.03	15%	25%	\$0.08	2.90	4.02	7th Power Plan
Petroleum Refining	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	New	0.02	8	\$0.02	44%	60%	\$0.08	2.48	3.43	Pacific Gas and Electric Research
Petroleum Refining	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	New	0.02	7	\$1.19	15%	30%	\$4.56	2.41	3.36	AEG Research
Petroleum Refining	Process	Process - Conductivity Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Petroleum Refining	Process	Process - Timers and Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Petroleum Refining	Motors	Process - Timers and Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Petroleum Refining	Process	Refrigeration - Floating Head Pressure	employee	New	2,815.65	15	\$1,937.89	20%	50%	\$0.08	28.40	28.40	RTF Workbook
Petroleum Refining	Process	Refrigeration - System Optimization	employee	New	4,517.69	15	\$677.64	20%	50%	\$0.02	45.56	45.56	AEG Research
Petroleum Refining	Motors	Pumping System - Equipment Upgrade	employee	New	139,088.74	10	\$19,994.74	9%	38%	\$0.05	845.74	844.00	7th Power Plan
Petroleum Refining	Motors	Pumping System - System Optimization	employee	New	103,108.28	12	\$30,471.99	9%	38%	\$0.04	995.43	989.03	UNIDO Study on Industrial Energy Efficiency
Petroleum Refining	Motors	Pumping System - Variable Speed Drive	employee	New	102,036.43	10	\$31,702.24	9%	38%	\$0.04	854.11	848.17	UNIDO Study on Industrial Energy Efficiency

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Petroleum Refining	Motors	Fan System - Equipment Upgrade	employee	New	12,564.73	10	\$1,236.21	9%	38%	\$0.05	104.62	104.31	UNIDO Study on Industrial Energy Efficiency
Petroleum Refining	Motors	Fan System - Flow Optimization	employee	New	14,836.25	10	\$2,045.36	9%	38%	\$0.02	123.55	123.17	UNIDO Study on Industrial Energy Efficiency
Petroleum Refining	Motors	Fan System - Variable Speed Drive	employee	New	22,054.56	10	\$10,292.16	9%	38%	\$0.06	184.94	183.43	UNIDO Study on Industrial Energy Efficiency
Petroleum Refining	Motors	Compressed Air - Equipment Upgrade	employee	New	64,578.74	10	\$4,699.09	17%	50%	\$0.04	456.45	456.45	7th Power Plan
Petroleum Refining	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	New	0.00	15	\$0.00	16%	38%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Petroleum Refining	Motors	Compressed Air - Refrigerated Cycling Dryers	employee	New	0.00	10	\$0.00	16%	30%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Petroleum Refining	Motors	Compressed Air - System Controls	employee	New	14,313.71	10	\$3,359.85	9%	38%	\$0.03	87.40	87.17	UNIDO Study on Industrial Energy Efficiency
Petroleum Refining	Motors	Compressed Air - Leak Management Program	employee	New	36,724.76	10	\$3,377.47	18%	75%	\$0.04	445.73	445.26	7th Power Plan
Petroleum Refining	Motors	Compressed Air - Variable Speed Drive	employee	New	26,528.82	15	\$20,599.03	26%	45%	\$0.08	172.61	171.48	UNIDO Study on Industrial Energy Efficiency
Petroleum Refining	Motors	Compressed Air - Low Pressure-Drop Filters	employee	New	884.35	10	\$317.49	17%	50%	\$0.05	6.31	6.30	Illinois TRM
Petroleum Refining	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	New	5,411.18	10	\$1,029.95	17%	50%	\$0.03	38.52	38.37	UNIDO Study on Industrial Energy Efficiency
Petroleum Refining	Motors	Compressed Air - Outside Air Intake	employee	New	0.00	20	\$0.00	17%	50%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Petroleum Refining	Motors	Compressed Air - Receiver Capacity Addition	employee	New	5,355.22	15	\$2,832.37	17%	50%	\$0.06	60.88	60.54	UNIDO Study on Industrial Energy Efficiency
Petroleum Refining	Motors	Material Handling - Variable Speed Drive	employee	New	29,717.02	10	\$10,558.21	25%	45%	\$0.05	174.78	173.40	7th Power Plan
Petroleum Refining	Motors	Motors - Green Rewind (<100 HP)	employee	New	2,124.85	10	\$908.54	10%	50%	\$0.06	125.02	124.01	7th Power Plan
Petroleum Refining	Motors	Motors - Green Rewind (100 HP+)	employee	New	1,193.39	10	\$322.48	6%	25%	\$0.04	33.30	33.06	7th Power Plan
Petroleum Refining	Motors	Switch from Belt Drive to Direct Drive	employee	New	18,123.33	12	\$3,988.13	16%	25%	\$0.03	291.51	289.71	2015-mdu-irp-report---volume-iii.pdf
Petroleum Refining	Motors	Motors - Synchronous Belts	employee	New	4,778.81	10	\$1,199.78	16%	36%	\$0.03	102.16	101.87	7th Power Plan
Petroleum Refining	Miscellaneous	Agriculture - Engine Block Timer	employee	New	9,804.02	3	\$120.94	0%	0%	\$0.00	0.00	0.00	Vermont TRM

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Petroleum Refining	Motors	Agriculture - Live Stock Waterer	employee	New	335,801.88	10	\$176,089.04	0%	0%	\$0.07	0.00	0.00	Ontario Power TRM
Petroleum Refining	Process	Dairy - Milk Precoolers	employee	New	18,771.01	15	\$8,725.53	0%	0%	\$0.05	0.00	0.00	Ontario Power TRM
Petroleum Refining	Process	Clean Room: Change Filter Strategy	employee	New	606.03	15	\$4.47	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Petroleum Refining	Process	Clean Room: Chiller Optimize	employee	New	5,580.41	15	\$516.67	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Petroleum Refining	Process	Clean Room: Clean Room HVAC	employee	New	3,378.78	15	\$623.68	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Petroleum Refining	Process	Elec Chip Fab: Solidstate Chiller	employee	New	3,378.78	15	\$1,959.00	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Petroleum Refining	Process	Elec Chip Fab: Eliminate Exhaust	employee	New	75.54	15	\$16.08	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Petroleum Refining	Process	Elec Chip Fab: Exhaust Injector	employee	New	151.08	15	\$77.57	0%	0%	\$0.06	0.00	0.00	7th Power Plan
Petroleum Refining	Process	Elec Chip Fab: Reduce Gas Pressure	employee	New	151.51	15	\$1.56	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Petroleum Refining	Motors	Panel: Hydraulic Press	employee	New	44,879.46	10	\$10,551.88	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Petroleum Refining	Motors	Wood: Replace Pneumatic Conveyor	employee	New	47,934.34	10	\$790.24	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Petroleum Refining	Process	Metal: New Arc Furnace	employee	New	27,709.79	10	\$2,916.93	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Petroleum Refining	Process	Paper: Premium Control Large Material	employee	New	5,594.15	10	\$2,811.31	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Petroleum Refining	Process	Paper: Efficient Pulp Screen	employee	New	4,488.58	10	\$926.05	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Petroleum Refining	Process	Kraft: Effluent Treatment System	employee	New	4,488.58	10	\$379.66	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Petroleum Refining	Motors	Kraft: Efficient Agitator	employee	New	81,861.10	10	\$7,874.11	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Petroleum Refining	Process	Mech Pulp: Premium Process	employee	New	50.16	5	\$6.50	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Petroleum Refining	Motors	Mech Pulp: Refiner Plate Improvement	employee	New	704.33	1	\$30.04	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Petroleum Refining	Cooling	Transformer - High Efficiency	employee	New	443.11	10	\$2,836.70	15%	15%	\$0.02	0.00	0.00	7th Power Plan

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Petroleum Refining	Heating	Transformer - High Efficiency	employee	New	2,896.08	10	\$2,836.70	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Petroleum Refining	Ventilation	Transformer - High Efficiency	employee	New	25.80	10	\$2,836.70	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Petroleum Refining	Interior Lighting	Transformer - High Efficiency	employee	New	237.14	10	\$2,836.70	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Petroleum Refining	Exterior Lighting	Transformer - High Efficiency	employee	New	49.01	10	\$2,836.70	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Petroleum Refining	Motors	Transformer - High Efficiency	employee	New	17,660.35	10	\$2,836.70	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Petroleum Refining	Process	Transformer - High Efficiency	employee	New	2,240.37	10	\$2,836.70	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Petroleum Refining	Miscellaneous	Transformer - High Efficiency	employee	New	351.48	10	\$2,836.70	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Petroleum Refining	Cooling	Strategic Energy Management	employee	New	1,265.49	3	\$17,422.11	0%	5%	\$0.08	0.03	0.03	AEG Research
Petroleum Refining	Heating	Strategic Energy Management	employee	New	8,346.08	3	\$17,422.11	0%	5%	\$0.08	0.20	0.21	AEG Research
Petroleum Refining	Ventilation	Strategic Energy Management	employee	New	74.21	3	\$17,422.11	0%	5%	\$0.08	0.01	0.02	AEG Research
Petroleum Refining	Interior Lighting	Strategic Energy Management	employee	New	683.40	3	\$17,422.11	0%	5%	\$0.08	0.09	0.13	AEG Research
Petroleum Refining	Exterior Lighting	Strategic Energy Management	employee	New	141.57	3	\$17,422.11	0%	5%	\$0.08	0.02	0.03	AEG Research
Petroleum Refining	Motors	Strategic Energy Management	employee	New	51,018.75	3	\$17,422.11	0%	5%	\$0.08	6.23	6.31	AEG Research
Petroleum Refining	Process	Strategic Energy Management	employee	New	6,472.17	3	\$17,422.11	0%	5%	\$0.08	0.78	0.78	AEG Research
Petroleum Refining	Miscellaneous	Strategic Energy Management	employee	New	1,015.38	3	\$17,422.11	0%	5%	\$0.08	0.15	0.11	AEG Research
Petroleum Refining	Interior Lighting	Commissioning	employee	New	788.38	3	\$32,828.17	5%	39%	\$0.16	0.73	1.05	AEG Research
Petroleum Refining	Exterior Lighting	Commissioning	employee	New	163.32	3	\$32,828.17	5%	39%	\$0.16	0.17	0.24	AEG Research
Petroleum Refining	Motors	Commissioning	employee	New	58,856.05	3	\$32,828.17	5%	39%	\$0.16	48.91	49.50	AEG Research
Petroleum Refining	Process	Commissioning	employee	New	7,466.39	3	\$32,828.17	5%	39%	\$0.16	6.14	6.15	AEG Research

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Petroleum Refining	Miscellaneous	Commissioning	employee	New	1,171.35	3	\$32,828.17	5%	39%	\$0.16	1.19	0.82	AEG Research
Petroleum Refining	Interior Lighting	Retrocommissioning	employee	New	790.47	3	\$20,839.97	0%	0%	\$0.10	0.00	0.00	AEG Research
Petroleum Refining	Exterior Lighting	Retrocommissioning	employee	New	163.35	3	\$20,839.97	0%	0%	\$0.10	0.00	0.00	AEG Research
Petroleum Refining	Motors	Retrocommissioning	employee	New	58,867.84	3	\$20,839.97	0%	0%	\$0.10	0.00	0.00	AEG Research
Petroleum Refining	Process	Retrocommissioning	employee	New	7,467.89	3	\$20,839.97	0%	0%	\$0.10	0.00	0.00	AEG Research
Petroleum Refining	Miscellaneous	Retrocommissioning	employee	New	1,171.59	3	\$20,839.97	0%	0%	\$0.10	0.00	0.00	AEG Research
Petroleum Refining	Motors	Municipal Sewage Treatment	employee	New	18,194.67	12	\$10,051.75	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Petroleum Refining	Motors	Municipal Water Supply Treatment	employee	New	0.00	12	\$0.00	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Cooling	Insulation - Ceiling	sqft	Existing	0.12	45	\$1.28	15%	25%	\$0.15	5.09	5.42	Building Energy Simulation Tool
Stone Clay Glass Products	Heating	Insulation - Ceiling	sqft	Existing	0.55	45	\$1.28	15%	25%	\$0.15	25.12	25.81	Building Energy Simulation Tool
Stone Clay Glass Products	Ventilation	Insulation - Ceiling	sqft	Existing	0.02	45	\$1.28	15%	25%	\$0.15	3.63	4.14	Building Energy Simulation Tool
Stone Clay Glass Products	Cooling	Insulation - Ducting	sqft	Existing	0.05	20	\$0.84	15%	25%	\$1.05	1.86	2.04	Building Energy Simulation Tool
Stone Clay Glass Products	Heating	Insulation - Ducting	sqft	Existing	0.02	20	\$0.84	15%	25%	\$1.05	1.04	1.08	Building Energy Simulation Tool
Stone Clay Glass Products	Ventilation	Insulation - Ducting	sqft	Existing	0.00	20	\$0.84	15%	25%	\$1.05	0.15	0.17	Building Energy Simulation Tool
Stone Clay Glass Products	Cooling	Insulation - Wall Cavity	sqft	Existing	0.00	45	\$0.15	45%	50%	\$0.02	0.04	0.04	Building Energy Simulation Tool
Stone Clay Glass Products	Heating	Insulation - Wall Cavity	sqft	Existing	0.76	45	\$0.15	45%	50%	\$0.02	17.84	17.88	Building Energy Simulation Tool
Stone Clay Glass Products	Ventilation	Insulation - Wall Cavity	sqft	Existing	0.02	45	\$0.15	45%	50%	\$0.02	2.43	2.77	Building Energy Simulation Tool
Stone Clay Glass Products	Cooling	HVAC - Duct Repair and Sealing	sqft	Existing	0.02	18	\$0.00	15%	25%	\$0.00	0.68	0.71	Building Energy Simulation Tool
Stone Clay Glass Products	Heating	HVAC - Duct Repair and Sealing	sqft	Existing	0.05	18	\$0.00	15%	25%	\$0.00	2.51	2.52	Building Energy Simulation Tool

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Stone Clay Glass Products	Ventilation	HVAC - Duct Repair and Sealing	sqft	Existing	0.00	18	\$0.00	15%	25%	\$0.00	0.34	0.39	Building Energy Simulation Tool
Stone Clay Glass Products	Cooling	Chiller - Chilled Water Reset	sqft	Existing	0.05	10	\$0.01	15%	45%	\$0.03	1.63	1.75	AEG-BEST
Stone Clay Glass Products	Cooling	Chiller - Chilled Water Variable-Flow System	sqft	Existing	0.25	15	\$0.50	15%	60%	\$0.20	12.92	14.28	AEG-BEST
Stone Clay Glass Products	Cooling	Chiller - Variable Speed Fans	sqft	Existing	0.09	15	\$0.03	15%	75%	\$0.04	6.67	7.11	New Jersey TRM
Stone Clay Glass Products	Cooling	HVAC - Economizer	sqft	Existing	5.50	10	\$0.25	18%	30%	\$0.01	6.82	7.20	AEG-BEST
Stone Clay Glass Products	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.25	15%	35%	\$10.61	0.74	0.90	7th Power Plan
Stone Clay Glass Products	Cooling	Destratification Fans (HVLS)	sqft	Existing	0.16	15	\$0.63	15%	50%	\$0.05	28.34	30.27	AEG Research
Stone Clay Glass Products	Heating	Destratification Fans (HVLS)	sqft	Existing	1.39	15	\$0.63	15%	50%	\$0.05	275.87	277.60	AEG Research
Stone Clay Glass Products	Cooling	RTU - Maintenance	sqft	Existing	0.08	3	\$0.07	15%	75%	\$0.28	11.86	13.36	AEG Research
Stone Clay Glass Products	Cooling	Thermostat - WiFi/Interactive	sqft	Existing	0.29	5	\$0.66	5%	15%	\$0.09	11.72	12.62	7th Power Plan
Stone Clay Glass Products	Heating	Thermostat - WiFi/Interactive	sqft	Existing	1.29	5	\$0.66	5%	15%	\$0.09	59.09	60.88	7th Power Plan
Stone Clay Glass Products	Ventilation	Thermostat - WiFi/Interactive	sqft	Existing	0.04	5	\$0.66	5%	15%	\$0.09	8.49	9.75	7th Power Plan
Stone Clay Glass Products	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	12.33	15	\$0.35	7%	33%	\$0.00	107.56	133.45	7th Power Plan
Stone Clay Glass Products	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	17.66	15	\$0.58	7%	33%	\$0.00	159.57	191.74	7th Power Plan
Stone Clay Glass Products	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	Existing	0.02	15	\$0.00	1%	2%	\$0.01	0.63	0.89	7th Power Plan
Stone Clay Glass Products	Interior Lighting	Interior Lighting - Timers and Timers	sqft	Existing	0.00	8	\$0.00	7%	7%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Stone Clay Glass Products	Interior Lighting	Interior Lighting - Skylights	sqft	Existing	0.00	15	\$1.01	15%	23%	\$0.00	0.00	0.00	AEG Research
Stone Clay Glass Products	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	sqft	Existing	0.03	16	\$1.81	5%	40%	\$4.11	21.16	29.85	7th Power Plan
Stone Clay Glass Products	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	Existing	0.03	11	\$0.00	15%	50%	\$0.01	21.14	29.37	Illinois TRM

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Stone Clay Glass Products	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	sqft	Existing	0.05	8	\$0.03	15%	25%	\$0.08	28.56	38.84	7th Power Plan
Stone Clay Glass Products	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	Existing	0.03	8	\$0.02	33%	60%	\$0.08	39.75	55.54	Pacific Gas and Electric Research
Stone Clay Glass Products	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	Existing	0.03	7	\$1.19	15%	30%	\$4.54	25.00	36.76	AEG Research
Stone Clay Glass Products	Process	Process - Conductivity Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Process	Process - Timers and Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Motors	Process - Timers and Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Process	Refrigeration - Floating Head Pressure	employee	Existing	628.06	15	\$610.63	20%	50%	\$0.11	27.93	27.95	RTF Workbook
Stone Clay Glass Products	Process	Refrigeration - System Optimization	employee	Existing	1,006.03	15	\$429.99	20%	50%	\$0.05	44.76	44.76	AEG Research
Stone Clay Glass Products	Motors	Pumping System - Equipment Upgrade	employee	Existing	8,801.34	10	\$1,265.69	9%	38%	\$0.05	372.58	376.63	7th Power Plan
Stone Clay Glass Products	Motors	Pumping System - System Optimization	employee	Existing	6,540.03	12	\$1,928.92	9%	38%	\$0.04	270.81	275.48	UNIDO Study on Industrial Energy Efficiency
Stone Clay Glass Products	Motors	Pumping System - Variable Speed Drive	employee	Existing	6,493.55	10	\$2,006.79	9%	38%	\$0.04	267.79	273.99	UNIDO Study on Industrial Energy Efficiency
Stone Clay Glass Products	Motors	Fan System - Equipment Upgrade	employee	Existing	6,860.67	10	\$671.75	9%	38%	\$0.05	286.84	287.83	UNIDO Study on Industrial Energy Efficiency
Stone Clay Glass Products	Motors	Fan System - Flow Optimization	employee	Existing	8,081.74	10	\$1,111.44	9%	38%	\$0.02	337.21	339.34	UNIDO Study on Industrial Energy Efficiency
Stone Clay Glass Products	Motors	Fan System - Variable Speed Drive	employee	Existing	11,919.08	10	\$5,592.72	9%	38%	\$0.06	484.69	505.73	UNIDO Study on Industrial Energy Efficiency
Stone Clay Glass Products	Motors	Compressed Air - Equipment Upgrade	employee	Existing	3,947.84	10	\$287.27	17%	50%	\$0.04	196.29	196.29	7th Power Plan
Stone Clay Glass Products	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	Existing	0.00	15	\$0.00	16%	38%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Stone Clay Glass Products	Motors	Compressed Air - Refrigerated Cycling Dryers	employee	Existing	0.00	10	\$0.00	16%	30%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Stone Clay Glass Products	Motors	Compressed Air - System Controls	employee	Existing	880.78	10	\$205.39	9%	38%	\$0.03	37.02	37.85	UNIDO Study on Industrial Energy Efficiency
Stone Clay Glass Products	Motors	Compressed Air - Leak Management Program	employee	Existing	2,250.55	10	\$206.47	18%	75%	\$0.04	191.60	191.98	7th Power Plan

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Stone Clay Glass Products	Motors	Compressed Air - Variable Speed Drive	employee	Existing	1,613.61	15	\$1,259.26	26%	45%	\$0.08	44.56	46.61	UNIDO Study on Industrial Energy Efficiency
Stone Clay Glass Products	Motors	Compressed Air - Low Pressure-Drop Filters	employee	Existing	53.79	10	\$19.41	17%	50%	\$0.05	2.60	2.72	Illinois TRM
Stone Clay Glass Products	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	Existing	331.39	10	\$62.96	17%	50%	\$0.03	16.28	16.60	UNIDO Study on Industrial Energy Efficiency
Stone Clay Glass Products	Motors	Compressed Air - Outside Air Intake	employee	Existing	0.00	20	\$0.00	17%	50%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Stone Clay Glass Products	Motors	Compressed Air - Receiver Capacity Addition	employee	Existing	329.04	15	\$173.15	17%	50%	\$0.06	16.10	16.52	UNIDO Study on Industrial Energy Efficiency
Stone Clay Glass Products	Motors	Material Handling - Variable Speed Drive	employee	Existing	47,085.31	10	\$16,571.45	25%	45%	\$0.05	1,359.94	1,395.32	7th Power Plan
Stone Clay Glass Products	Motors	Motors - Green Rewind (<100 HP)	employee	Existing	655.31	10	\$281.40	10%	50%	\$0.06	187.27	195.01	7th Power Plan
Stone Clay Glass Products	Motors	Motors - Green Rewind (100 HP+)	employee	Existing	371.62	10	\$99.88	6%	25%	\$0.04	51.11	52.26	7th Power Plan
Stone Clay Glass Products	Motors	Switch from Belt Drive to Direct Drive	employee	Existing	5,636.12	12	\$1,235.23	16%	25%	\$0.03	390.10	395.21	2015-mdu-irp-report---volume-iii.pdf
Stone Clay Glass Products	Motors	Motors - Synchronous Belts	employee	Existing	1,490.56	10	\$371.61	16%	36%	\$0.03	219.20	224.23	7th Power Plan
Stone Clay Glass Products	Miscellaneous	Agriculture - Engine Block Timer	employee	Existing	13,258.59	3	\$163.56	0%	0%	\$0.00	0.00	0.00	Vermont TRM
Stone Clay Glass Products	Motors	Agriculture - Live Stock Waterer	employee	Existing	21,051.43	10	\$11,146.66	0%	0%	\$0.07	0.00	0.00	Ontario Power TRM
Stone Clay Glass Products	Process	Dairy - Milk Precoolers	employee	Existing	4,187.08	15	\$1,943.07	0%	0%	\$0.05	0.00	0.00	Ontario Power TRM
Stone Clay Glass Products	Process	Clean Room: Change Filter Strategy	employee	Existing	940.53	15	\$6.94	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Process	Clean Room: Chiller Optimize	employee	Existing	1,242.69	15	\$115.06	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Process	Clean Room: Clean Room HVAC	employee	Existing	754.53	15	\$138.89	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Process	Elec Chip Fab: Solidstate Chiller	employee	Existing	753.68	15	\$436.24	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Process	Elec Chip Fab: Eliminate Exhaust	employee	Existing	117.57	15	\$24.96	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Process	Elec Chip Fab: Exhaust Injector	employee	Existing	234.87	15	\$120.39	0%	0%	\$0.06	0.00	0.00	7th Power Plan

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Stone Clay Glass Products	Process	Elec Chip Fab: Reduce Gas Pressure	employee	Existing	235.13	15	\$2.41	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Motors	Panel: Hydraulic Press	employee	Existing	70,902.52	10	\$16,561.51	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Motors	Wood: Replace Pneumatic Conveyor	employee	Existing	75,234.48	10	\$1,240.31	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Process	Metal: New Arc Furnace	employee	Existing	61,479.15	10	\$6,453.62	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Process	Paper: Premium Control Large Material	employee	Existing	6,864.35	10	\$3,440.27	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Process	Paper: Efficient Pulp Screen	employee	Existing	5,508.21	10	\$1,133.23	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Process	Kraft: Effluent Treatment System	employee	Existing	5,508.21	10	\$464.60	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Motors	Kraft: Efficient Agitator	employee	Existing	129,105.40	10	\$12,358.66	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Process	Mech Pulp: Premium Process	employee	Existing	61.59	5	\$7.95	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Motors	Mech Pulp: Refiner Plate Improvement	employee	Existing	1,094.79	1	\$47.14	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Cooling	Transformer - High Efficiency	employee	Existing	388.73	10	\$1,391.87	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Heating	Transformer - High Efficiency	employee	Existing	2,381.55	10	\$1,391.87	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Ventilation	Transformer - High Efficiency	employee	Existing	35.84	10	\$1,391.87	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Interior Lighting	Transformer - High Efficiency	employee	Existing	300.21	10	\$1,391.87	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Exterior Lighting	Transformer - High Efficiency	employee	Existing	64.92	10	\$1,391.87	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Motors	Transformer - High Efficiency	employee	Existing	5,417.09	10	\$1,391.87	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Process	Transformer - High Efficiency	employee	Existing	2,749.06	10	\$1,391.87	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Miscellaneous	Transformer - High Efficiency	employee	Existing	501.82	10	\$1,391.87	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Cooling	Strategic Energy Management	employee	Existing	1,098.38	3	\$8,548.43	0%	0%	\$0.08	0.00	0.00	AEG Research

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Stone Clay Glass Products	Heating	Strategic Energy Management	employee	Existing	6,835.20	3	\$8,548.43	0%	0%	\$0.08	0.00	0.00	AEG Research
Stone Clay Glass Products	Ventilation	Strategic Energy Management	employee	Existing	102.44	3	\$8,548.43	0%	0%	\$0.08	0.00	0.00	AEG Research
Stone Clay Glass Products	Interior Lighting	Strategic Energy Management	employee	Existing	857.79	3	\$8,548.43	0%	0%	\$0.08	0.00	0.00	AEG Research
Stone Clay Glass Products	Exterior Lighting	Strategic Energy Management	employee	Existing	186.45	3	\$8,548.43	0%	0%	\$0.08	0.00	0.00	AEG Research
Stone Clay Glass Products	Motors	Strategic Energy Management	employee	Existing	15,538.45	3	\$8,548.43	0%	0%	\$0.08	0.00	0.00	AEG Research
Stone Clay Glass Products	Process	Strategic Energy Management	employee	Existing	7,884.14	3	\$8,548.43	0%	0%	\$0.08	0.00	0.00	AEG Research
Stone Clay Glass Products	Miscellaneous	Strategic Energy Management	employee	Existing	1,437.98	3	\$8,548.43	0%	0%	\$0.08	0.00	0.00	AEG Research
Stone Clay Glass Products	Interior Lighting	Commissioning	employee	Existing	989.76	3	\$13,852.05	0%	0%	\$0.15	0.00	0.00	AEG Research
Stone Clay Glass Products	Exterior Lighting	Commissioning	employee	Existing	215.14	3	\$13,852.05	0%	0%	\$0.15	0.00	0.00	AEG Research
Stone Clay Glass Products	Motors	Commissioning	employee	Existing	17,928.99	3	\$13,852.05	0%	0%	\$0.15	0.00	0.00	AEG Research
Stone Clay Glass Products	Process	Commissioning	employee	Existing	9,097.09	3	\$13,852.05	0%	0%	\$0.15	0.00	0.00	AEG Research
Stone Clay Glass Products	Miscellaneous	Commissioning	employee	Existing	1,659.21	3	\$13,852.05	0%	0%	\$0.15	0.00	0.00	AEG Research
Stone Clay Glass Products	Interior Lighting	Retrocommissioning	employee	Existing	1,000.70	3	\$8,793.56	10%	40%	\$0.10	37.28	48.29	AEG Research
Stone Clay Glass Products	Exterior Lighting	Retrocommissioning	employee	Existing	216.41	3	\$8,793.56	10%	40%	\$0.10	8.18	10.79	AEG Research
Stone Clay Glass Products	Motors	Retrocommissioning	employee	Existing	18,056.95	3	\$8,793.56	10%	40%	\$0.10	737.18	764.28	AEG Research
Stone Clay Glass Products	Process	Retrocommissioning	employee	Existing	9,163.54	3	\$8,793.56	10%	40%	\$0.10	386.64	387.04	AEG Research
Stone Clay Glass Products	Miscellaneous	Retrocommissioning	employee	Existing	1,672.72	3	\$8,793.56	10%	40%	\$0.10	89.43	73.05	AEG Research
Stone Clay Glass Products	Motors	Municipal Sewage Treatment	employee	Existing	1,146.81	12	\$636.29	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Motors	Municipal Water Supply Treatment	employee	Existing	0.00	12	\$0.00	0%	0%	\$0.00	0.00	0.00	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Stone Clay Glass Products	Cooling	Insulation - Ceiling	sqft	New	0.11	45	\$1.28	15%	25%	\$0.16	2.11	2.14	Building Energy Simulation Tool
Stone Clay Glass Products	Heating	Insulation - Ceiling	sqft	New	0.52	45	\$1.28	15%	25%	\$0.16	10.57	10.57	Building Energy Simulation Tool
Stone Clay Glass Products	Ventilation	Insulation - Ceiling	sqft	New	0.01	45	\$1.28	15%	25%	\$0.16	1.26	1.37	Building Energy Simulation Tool
Stone Clay Glass Products	Cooling	Insulation - Ducting	sqft	New	0.04	20	\$0.84	15%	25%	\$1.13	0.81	0.83	Building Energy Simulation Tool
Stone Clay Glass Products	Heating	Insulation - Ducting	sqft	New	0.02	20	\$0.84	15%	25%	\$1.13	0.45	0.45	Building Energy Simulation Tool
Stone Clay Glass Products	Ventilation	Insulation - Ducting	sqft	New	0.00	20	\$0.84	15%	25%	\$1.13	0.05	0.06	Building Energy Simulation Tool
Stone Clay Glass Products	Cooling	Insulation - Wall Cavity	sqft	New	0.00	45	\$0.15	45%	50%	\$0.02	0.02	0.02	Building Energy Simulation Tool
Stone Clay Glass Products	Heating	Insulation - Wall Cavity	sqft	New	0.71	45	\$0.15	45%	50%	\$0.02	7.18	7.19	Building Energy Simulation Tool
Stone Clay Glass Products	Ventilation	Insulation - Wall Cavity	sqft	New	0.01	45	\$0.15	45%	50%	\$0.02	0.84	0.92	Building Energy Simulation Tool
Stone Clay Glass Products	Cooling	HVAC - Duct Repair and Sealing	sqft	New	0.01	18	\$0.00	15%	25%	\$0.00	0.27	0.27	Building Energy Simulation Tool
Stone Clay Glass Products	Heating	HVAC - Duct Repair and Sealing	sqft	New	0.05	18	\$0.00	15%	25%	\$0.00	1.00	1.00	Building Energy Simulation Tool
Stone Clay Glass Products	Ventilation	HVAC - Duct Repair and Sealing	sqft	New	0.00	18	\$0.00	15%	25%	\$0.00	0.12	0.13	Building Energy Simulation Tool
Stone Clay Glass Products	Cooling	Chiller - Chilled Water Reset	sqft	New	0.04	10	\$0.01	15%	45%	\$0.03	0.20	0.21	AEG-BEST
Stone Clay Glass Products	Cooling	Chiller - Chilled Water Variable-Flow System	sqft	New	0.20	15	\$0.50	15%	60%	\$0.24	2.59	2.67	AEG-BEST
Stone Clay Glass Products	Cooling	Chiller - Variable Speed Fans	sqft	New	0.07	15	\$0.03	15%	75%	\$0.04	1.28	1.32	New Jersey TRM
Stone Clay Glass Products	Cooling	HVAC - Economizer	sqft	New	4.73	10	\$0.25	18%	30%	\$0.01	0.87	0.90	AEG-BEST
Stone Clay Glass Products	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.25	15%	35%	\$12.70	0.14	0.16	7th Power Plan
Stone Clay Glass Products	Cooling	Destratification Fans (HVLS)	sqft	New	0.14	15	\$0.63	15%	50%	\$0.05	6.34	6.53	AEG Research
Stone Clay Glass Products	Heating	Destratification Fans (HVLS)	sqft	New	1.30	15	\$0.63	15%	50%	\$0.05	61.71	61.86	AEG Research

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Stone Clay Glass Products	Cooling	RTU - Maintenance	sqft	New	0.07	3	\$0.07	15%	75%	\$0.29	0.22	0.24	AEG Research
Stone Clay Glass Products	Cooling	Thermostat - WiFi/Interactive	sqft	New	0.26	5	\$0.66	5%	15%	\$0.09	0.82	0.85	7th Power Plan
Stone Clay Glass Products	Heating	Thermostat - WiFi/Interactive	sqft	New	1.23	5	\$0.66	5%	15%	\$0.09	4.14	4.16	7th Power Plan
Stone Clay Glass Products	Ventilation	Thermostat - WiFi/Interactive	sqft	New	0.02	5	\$0.66	5%	15%	\$0.09	0.49	0.58	7th Power Plan
Stone Clay Glass Products	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	9.65	15	\$0.35	22%	41%	\$0.00	58.00	67.78	7th Power Plan
Stone Clay Glass Products	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	13.24	15	\$0.58	22%	41%	\$0.00	79.01	93.05	7th Power Plan
Stone Clay Glass Products	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	New	0.02	15	\$0.00	1%	2%	\$0.01	0.12	0.16	7th Power Plan
Stone Clay Glass Products	Interior Lighting	Interior Lighting - Timeclocks and Timers	sqft	New	0.00	8	\$0.00	7%	7%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Stone Clay Glass Products	Interior Lighting	Interior Lighting - Skylights	sqft	New	0.00	15	\$1.01	18%	24%	\$0.00	0.00	0.00	AEG Research
Stone Clay Glass Products	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	sqft	New	0.03	16	\$1.81	5%	40%	\$4.11	5.04	6.36	7th Power Plan
Stone Clay Glass Products	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	New	0.03	11	\$0.00	15%	50%	\$0.01	3.24	4.31	Illinois TRM
Stone Clay Glass Products	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	sqft	New	0.04	8	\$0.03	15%	25%	\$0.08	2.79	3.87	7th Power Plan
Stone Clay Glass Products	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	New	0.02	8	\$0.02	44%	60%	\$0.08	2.39	3.30	Pacific Gas and Electric Research
Stone Clay Glass Products	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	New	0.02	7	\$1.19	15%	30%	\$4.56	2.32	3.23	AEG Research
Stone Clay Glass Products	Process	Process - Conductivity Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Process	Process - Timers and Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Motors	Process - Timers and Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Process	Refrigeration - Floating Head Pressure	employee	New	628.45	15	\$431.54	20%	50%	\$0.08	6.34	6.34	RTF Workbook
Stone Clay Glass Products	Process	Refrigeration - System Optimization	employee	New	1,006.03	15	\$150.90	20%	50%	\$0.02	10.15	10.15	AEG Research

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Stone Clay Glass Products	Motors	Pumping System - Equipment Upgrade	employee	New	8,859.36	10	\$1,265.69	9%	38%	\$0.05	53.74	53.72	7th Power Plan
Stone Clay Glass Products	Motors	Pumping System - System Optimization	employee	New	6,616.96	12	\$1,928.92	9%	38%	\$0.04	63.56	63.44	UNIDO Study on Industrial Energy Efficiency
Stone Clay Glass Products	Motors	Pumping System - Variable Speed Drive	employee	New	6,595.65	10	\$2,006.79	9%	38%	\$0.04	54.89	54.77	UNIDO Study on Industrial Energy Efficiency
Stone Clay Glass Products	Motors	Fan System - Equipment Upgrade	employee	New	6,880.11	10	\$671.75	9%	38%	\$0.05	57.13	57.10	UNIDO Study on Industrial Energy Efficiency
Stone Clay Glass Products	Motors	Fan System - Flow Optimization	employee	New	8,118.56	10	\$1,111.44	9%	38%	\$0.02	67.44	67.38	UNIDO Study on Industrial Energy Efficiency
Stone Clay Glass Products	Motors	Fan System - Variable Speed Drive	employee	New	12,247.34	10	\$5,592.72	9%	38%	\$0.06	102.10	101.76	UNIDO Study on Industrial Energy Efficiency
Stone Clay Glass Products	Motors	Compressed Air - Equipment Upgrade	employee	New	3,947.84	10	\$287.27	17%	50%	\$0.04	27.90	27.90	7th Power Plan
Stone Clay Glass Products	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	New	0.00	15	\$0.00	16%	38%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Stone Clay Glass Products	Motors	Compressed Air - Refrigerated Cycling Dryers	employee	New	0.00	10	\$0.00	16%	30%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Stone Clay Glass Products	Motors	Compressed Air - System Controls	employee	New	892.53	10	\$205.39	9%	38%	\$0.03	5.42	5.42	UNIDO Study on Industrial Energy Efficiency
Stone Clay Glass Products	Motors	Compressed Air - Leak Management Program	employee	New	2,253.77	10	\$206.47	18%	75%	\$0.04	27.32	27.31	7th Power Plan
Stone Clay Glass Products	Motors	Compressed Air - Variable Speed Drive	employee	New	1,655.59	15	\$1,259.26	26%	45%	\$0.08	10.71	10.68	UNIDO Study on Industrial Energy Efficiency
Stone Clay Glass Products	Motors	Compressed Air - Low Pressure-Drop Filters	employee	New	55.19	10	\$19.41	17%	50%	\$0.05	0.39	0.39	Illinois TRM
Stone Clay Glass Products	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	New	335.25	10	\$62.96	17%	50%	\$0.03	2.37	2.37	UNIDO Study on Industrial Energy Efficiency
Stone Clay Glass Products	Motors	Compressed Air - Outside Air Intake	employee	New	0.00	20	\$0.00	17%	50%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Stone Clay Glass Products	Motors	Compressed Air - Receiver Capacity Addition	employee	New	334.27	15	\$173.15	17%	50%	\$0.06	3.78	3.77	UNIDO Study on Industrial Energy Efficiency
Stone Clay Glass Products	Motors	Material Handling - Variable Speed Drive	employee	New	47,904.09	10	\$16,571.45	25%	45%	\$0.05	279.82	279.19	7th Power Plan
Stone Clay Glass Products	Motors	Motors - Green Rewind (<100 HP)	employee	New	672.57	10	\$281.40	10%	50%	\$0.06	39.34	39.21	7th Power Plan
Stone Clay Glass Products	Motors	Motors - Green Rewind (100 HP+)	employee	New	377.27	10	\$99.88	6%	25%	\$0.04	10.46	10.44	7th Power Plan

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Stone Clay Glass Products	Motors	Switch from Belt Drive to Direct Drive	employee	New	5,688.92	12	\$1,235.23	16%	25%	\$0.03	91.06	90.90	2015-mdi-irp-report---volume-iii.pdf
Stone Clay Glass Products	Motors	Motors - Synchronous Belts	employee	New	1,510.88	10	\$371.61	16%	36%	\$0.03	32.11	32.11	7th Power Plan
Stone Clay Glass Products	Miscellaneous	Agriculture - Engine Block Timer	employee	New	13,258.59	3	\$163.56	0%	0%	\$0.00	0.00	0.00	Vermont TRM
Stone Clay Glass Products	Motors	Agriculture - Live Stock Waterer	employee	New	21,696.99	10	\$11,146.66	0%	0%	\$0.07	0.00	0.00	Ontario Power TRM
Stone Clay Glass Products	Process	Dairy - Milk Precoolers	employee	New	4,189.67	15	\$1,943.07	0%	0%	\$0.05	0.00	0.00	Ontario Power TRM
Stone Clay Glass Products	Process	Clean Room: Change Filter Strategy	employee	New	940.53	15	\$6.94	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Process	Clean Room: Chiller Optimize	employee	New	1,242.69	15	\$115.06	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Process	Clean Room: Clean Room HVAC	employee	New	754.14	15	\$138.89	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Process	Elec Chip Fab: Solidstate Chiller	employee	New	754.14	15	\$436.24	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Process	Elec Chip Fab: Eliminate Exhaust	employee	New	117.51	15	\$24.96	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Process	Elec Chip Fab: Exhaust Injector	employee	New	235.01	15	\$120.39	0%	0%	\$0.06	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Process	Elec Chip Fab: Reduce Gas Pressure	employee	New	235.13	15	\$2.41	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Motors	Panel: Hydraulic Press	employee	New	71,835.68	10	\$16,561.51	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Motors	Wood: Replace Pneumatic Conveyor	employee	New	75,234.48	10	\$1,240.31	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Process	Metal: New Arc Furnace	employee	New	61,447.82	10	\$6,453.62	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Process	Paper: Premium Control Large Material	employee	New	6,871.24	10	\$3,440.27	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Process	Paper: Efficient Pulp Screen	employee	New	5,505.40	10	\$1,133.23	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Process	Kraft: Effluent Treatment System	employee	New	5,505.40	10	\$464.60	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Motors	Kraft: Efficient Agitator	employee	New	129,272.41	10	\$12,358.66	0%	0%	\$0.01	0.00	0.00	7th Power Plan

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Stone Clay Glass Products	Process	Mech Pulp: Premium Process	employee	New	61.61	5	\$7.95	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Motors	Mech Pulp: Refiner Plate Improvement	employee	New	1,128.36	1	\$47.14	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Cooling	Transformer - High Efficiency	employee	New	348.21	10	\$1,372.88	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Heating	Transformer - High Efficiency	employee	New	2,275.82	10	\$1,372.88	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Ventilation	Transformer - High Efficiency	employee	New	20.28	10	\$1,372.88	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Interior Lighting	Transformer - High Efficiency	employee	New	228.09	10	\$1,372.88	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Exterior Lighting	Transformer - High Efficiency	employee	New	47.14	10	\$1,372.88	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Motors	Transformer - High Efficiency	employee	New	5,583.20	10	\$1,372.88	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Process	Transformer - High Efficiency	employee	New	2,751.82	10	\$1,372.88	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Miscellaneous	Transformer - High Efficiency	employee	New	475.32	10	\$1,372.88	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Cooling	Strategic Energy Management	employee	New	994.45	3	\$8,431.82	0%	0%	\$0.08	0.00	0.00	AEG Research
Stone Clay Glass Products	Heating	Strategic Energy Management	employee	New	6,558.58	3	\$8,431.82	0%	0%	\$0.08	0.00	0.00	AEG Research
Stone Clay Glass Products	Ventilation	Strategic Energy Management	employee	New	58.31	3	\$8,431.82	0%	0%	\$0.08	0.00	0.00	AEG Research
Stone Clay Glass Products	Interior Lighting	Strategic Energy Management	employee	New	657.32	3	\$8,431.82	0%	0%	\$0.08	0.00	0.00	AEG Research
Stone Clay Glass Products	Exterior Lighting	Strategic Energy Management	employee	New	136.17	3	\$8,431.82	0%	0%	\$0.08	0.00	0.00	AEG Research
Stone Clay Glass Products	Motors	Strategic Energy Management	employee	New	16,129.24	3	\$8,431.82	0%	0%	\$0.08	0.00	0.00	AEG Research
Stone Clay Glass Products	Process	Strategic Energy Management	employee	New	7,949.71	3	\$8,431.82	0%	0%	\$0.08	0.00	0.00	AEG Research
Stone Clay Glass Products	Miscellaneous	Strategic Energy Management	employee	New	1,373.16	3	\$8,431.82	0%	0%	\$0.08	0.00	0.00	AEG Research
Stone Clay Glass Products	Interior Lighting	Commissioning	employee	New	758.45	3	\$13,911.77	10%	40%	\$0.16	0.62	0.89	AEG Research

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Stone Clay Glass Products	Exterior Lighting	Commissioning	employee	New	157.12	3	\$13,911.77	10%	40%	\$0.16	0.14	0.21	AEG Research
Stone Clay Glass Products	Motors	Commissioning	employee	New	18,610.68	3	\$13,911.77	10%	40%	\$0.16	13.57	13.69	AEG Research
Stone Clay Glass Products	Process	Commissioning	employee	New	9,172.75	3	\$13,911.77	10%	40%	\$0.16	6.65	6.66	AEG Research
Stone Clay Glass Products	Miscellaneous	Commissioning	employee	New	1,584.41	3	\$13,911.77	10%	40%	\$0.16	1.42	0.98	AEG Research
Stone Clay Glass Products	Interior Lighting	Retrocommissioning	employee	New	760.31	3	\$8,831.47	0%	0%	\$0.10	0.00	0.00	AEG Research
Stone Clay Glass Products	Exterior Lighting	Retrocommissioning	employee	New	157.12	3	\$8,831.47	0%	0%	\$0.10	0.00	0.00	AEG Research
Stone Clay Glass Products	Motors	Retrocommissioning	employee	New	18,610.68	3	\$8,831.47	0%	0%	\$0.10	0.00	0.00	AEG Research
Stone Clay Glass Products	Process	Retrocommissioning	employee	New	9,172.75	3	\$8,831.47	0%	0%	\$0.10	0.00	0.00	AEG Research
Stone Clay Glass Products	Miscellaneous	Retrocommissioning	employee	New	1,584.41	3	\$8,831.47	0%	0%	\$0.10	0.00	0.00	AEG Research
Stone Clay Glass Products	Motors	Municipal Sewage Treatment	employee	New	1,177.02	12	\$636.29	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Stone Clay Glass Products	Motors	Municipal Water Supply Treatment	employee	New	0.00	12	\$0.00	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Cooling	Insulation - Ceiling	sqft	Existing	0.12	45	\$1.28	15%	25%	\$0.15	0.55	0.58	Building Energy Simulation Tool
Transportation Equipment Mfg	Heating	Insulation - Ceiling	sqft	Existing	0.55	45	\$1.28	15%	25%	\$0.15	2.67	2.75	Building Energy Simulation Tool
Transportation Equipment Mfg	Ventilation	Insulation - Ceiling	sqft	Existing	0.02	45	\$1.28	15%	25%	\$0.15	0.39	0.44	Building Energy Simulation Tool
Transportation Equipment Mfg	Cooling	Insulation - Ducting	sqft	Existing	0.05	20	\$0.84	15%	25%	\$1.05	0.20	0.22	Building Energy Simulation Tool
Transportation Equipment Mfg	Heating	Insulation - Ducting	sqft	Existing	0.02	20	\$0.84	15%	25%	\$1.05	0.11	0.12	Building Energy Simulation Tool
Transportation Equipment Mfg	Ventilation	Insulation - Ducting	sqft	Existing	0.00	20	\$0.84	15%	25%	\$1.05	0.02	0.02	Building Energy Simulation Tool
Transportation Equipment Mfg	Cooling	Insulation - Wall Cavity	sqft	Existing	0.00	45	\$0.15	45%	50%	\$0.02	0.00	0.00	Building Energy Simulation Tool
Transportation Equipment Mfg	Heating	Insulation - Wall Cavity	sqft	Existing	0.76	45	\$0.15	45%	50%	\$0.02	1.90	1.90	Building Energy Simulation Tool

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Transportation Equipment Mfg	Ventilation	Insulation - Wall Cavity	sqft	Existing	0.02	45	\$0.15	45%	50%	\$0.02	0.26	0.29	Building Energy Simulation Tool
Transportation Equipment Mfg	Cooling	HVAC - Duct Repair and Sealing	sqft	Existing	0.02	18	\$0.00	15%	25%	\$0.00	0.07	0.08	Building Energy Simulation Tool
Transportation Equipment Mfg	Heating	HVAC - Duct Repair and Sealing	sqft	Existing	0.05	18	\$0.00	15%	25%	\$0.00	0.27	0.27	Building Energy Simulation Tool
Transportation Equipment Mfg	Ventilation	HVAC - Duct Repair and Sealing	sqft	Existing	0.00	18	\$0.00	15%	25%	\$0.00	0.04	0.04	Building Energy Simulation Tool
Transportation Equipment Mfg	Cooling	Chiller - Chilled Water Reset	sqft	Existing	0.05	10	\$0.01	15%	45%	\$0.03	0.18	0.19	AEG-BEST
Transportation Equipment Mfg	Cooling	Chiller - Chilled Water Variable-Flow System	sqft	Existing	0.25	15	\$0.50	15%	60%	\$0.20	1.37	1.52	AEG-BEST
Transportation Equipment Mfg	Cooling	Chiller - Variable Speed Fans	sqft	Existing	0.10	15	\$0.03	15%	75%	\$0.04	0.72	0.76	New Jersey TRM
Transportation Equipment Mfg	Cooling	HVAC - Economizer	sqft	Existing	0.31	10	\$0.25	18%	30%	\$0.11	0.68	0.75	AEG-BEST
Transportation Equipment Mfg	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.25	15%	35%	\$10.61	0.08	0.10	7th Power Plan
Transportation Equipment Mfg	Cooling	Destratification Fans (HVLS)	sqft	Existing	0.16	15	\$0.63	15%	50%	\$0.05	3.04	3.23	AEG Research
Transportation Equipment Mfg	Heating	Destratification Fans (HVLS)	sqft	Existing	1.39	15	\$0.63	15%	50%	\$0.05	29.35	29.54	AEG Research
Transportation Equipment Mfg	Cooling	RTU - Maintenance	sqft	Existing	0.08	3	\$0.07	15%	75%	\$0.28	1.26	1.42	AEG Research
Transportation Equipment Mfg	Cooling	Thermostat - WiFi/Interactive	sqft	Existing	0.29	5	\$0.66	5%	15%	\$0.09	1.25	1.34	7th Power Plan
Transportation Equipment Mfg	Heating	Thermostat - WiFi/Interactive	sqft	Existing	1.29	5	\$0.66	5%	15%	\$0.09	6.29	6.48	7th Power Plan
Transportation Equipment Mfg	Ventilation	Thermostat - WiFi/Interactive	sqft	Existing	0.04	5	\$0.66	5%	15%	\$0.09	0.90	1.04	7th Power Plan
Transportation Equipment Mfg	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.73	15	\$0.35	7%	33%	\$0.04	10.66	12.85	7th Power Plan
Transportation Equipment Mfg	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	1.01	15	\$0.58	7%	33%	\$0.05	14.32	17.66	7th Power Plan
Transportation Equipment Mfg	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	Existing	0.02	15	\$0.00	1%	2%	\$0.01	0.07	0.09	7th Power Plan
Transportation Equipment Mfg	Interior Lighting	Interior Lighting - Timers and Timers	sqft	Existing	0.00	8	\$0.00	7%	7%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx

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Transportation Equipment Mfg	Interior Lighting	Interior Lighting - Skylights	sqft	Existing	0.00	15	\$1.01	15%	23%	\$0.00	0.00	0.00	AEG Research
Transportation Equipment Mfg	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	sqft	Existing	0.03	16	\$1.81	5%	40%	\$4.11	1.99	2.81	7th Power Plan
Transportation Equipment Mfg	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	Existing	0.04	11	\$0.00	15%	50%	\$0.01	2.20	2.84	Illinois TRM
Transportation Equipment Mfg	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	sqft	Existing	0.05	8	\$0.03	15%	25%	\$0.08	2.69	3.66	7th Power Plan
Transportation Equipment Mfg	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	Existing	0.03	8	\$0.02	33%	60%	\$0.08	3.75	5.24	Pacific Gas and Electric Research
Transportation Equipment Mfg	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	Existing	0.03	7	\$1.19	15%	30%	\$4.54	2.35	3.46	AEG Research
Transportation Equipment Mfg	Process	Process - Conductivity Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Process	Process - Timers and Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Motors	Process - Timers and Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Process	Refrigeration - Floating Head Pressure	employee	Existing	99.91	15	\$97.32	20%	50%	\$0.11	2.22	2.22	RTF Workbook
Transportation Equipment Mfg	Process	Refrigeration - System Optimization	employee	Existing	160.34	15	\$68.53	20%	50%	\$0.05	3.57	3.57	AEG Research
Transportation Equipment Mfg	Motors	Pumping System - Equipment Upgrade	employee	Existing	424.02	10	\$61.74	9%	38%	\$0.05	8.92	9.11	7th Power Plan
Transportation Equipment Mfg	Motors	Pumping System - System Optimization	employee	Existing	314.65	12	\$94.10	9%	38%	\$0.04	6.47	6.65	UNIDO Study on Industrial Energy Efficiency
Transportation Equipment Mfg	Motors	Pumping System - Variable Speed Drive	employee	Existing	311.55	10	\$97.90	9%	38%	\$0.04	6.37	6.60	UNIDO Study on Industrial Energy Efficiency
Transportation Equipment Mfg	Motors	Fan System - Equipment Upgrade	employee	Existing	111.69	10	\$11.12	9%	38%	\$0.05	2.31	2.35	UNIDO Study on Industrial Energy Efficiency
Transportation Equipment Mfg	Motors	Fan System - Flow Optimization	employee	Existing	131.83	10	\$18.40	9%	38%	\$0.02	2.73	2.78	UNIDO Study on Industrial Energy Efficiency
Transportation Equipment Mfg	Motors	Fan System - Variable Speed Drive	employee	Existing	193.73	10	\$92.59	9%	38%	\$0.06	3.90	4.13	UNIDO Study on Industrial Energy Efficiency
Transportation Equipment Mfg	Motors	Compressed Air - Equipment Upgrade	employee	Existing	768.03	10	\$55.89	17%	50%	\$0.04	19.09	19.09	7th Power Plan

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Transportation Equipment Mfg	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	Existing	0.00	15	\$0.00	16%	38%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Transportation Equipment Mfg	Motors	Compressed Air - Refrigerated Cycling Dryers	employee	Existing	0.00	10	\$0.00	16%	30%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Transportation Equipment Mfg	Motors	Compressed Air - System Controls	employee	Existing	168.92	10	\$39.96	9%	38%	\$0.03	3.53	3.65	UNIDO Study on Industrial Energy Efficiency
Transportation Equipment Mfg	Motors	Compressed Air - Leak Management Program	employee	Existing	434.11	10	\$40.17	18%	75%	\$0.04	18.40	18.57	7th Power Plan
Transportation Equipment Mfg	Motors	Compressed Air - Variable Speed Drive	employee	Existing	308.80	15	\$244.98	26%	45%	\$0.08	4.23	4.48	UNIDO Study on Industrial Energy Efficiency
Transportation Equipment Mfg	Motors	Compressed Air - Low Pressure-Drop Filters	employee	Existing	10.29	10	\$3.78	17%	50%	\$0.05	0.25	0.26	Illinois TRM
Transportation Equipment Mfg	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	Existing	63.63	10	\$12.25	17%	50%	\$0.03	1.55	1.60	UNIDO Study on Industrial Energy Efficiency
Transportation Equipment Mfg	Motors	Compressed Air - Outside Air Intake	employee	Existing	0.00	20	\$0.00	17%	50%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Transportation Equipment Mfg	Motors	Compressed Air - Receiver Capacity Addition	employee	Existing	63.00	15	\$33.69	17%	50%	\$0.06	1.53	1.59	UNIDO Study on Industrial Energy Efficiency
Transportation Equipment Mfg	Motors	Material Handling - Variable Speed Drive	employee	Existing	1,891.05	10	\$677.00	25%	45%	\$0.05	27.08	28.12	7th Power Plan
Transportation Equipment Mfg	Motors	Motors - Green Rewind (<100 HP)	employee	Existing	27.41	10	\$11.99	10%	50%	\$0.06	3.88	4.09	7th Power Plan
Transportation Equipment Mfg	Motors	Motors - Green Rewind (100 HP+)	employee	Existing	15.58	10	\$4.26	6%	25%	\$0.04	1.06	1.10	7th Power Plan
Transportation Equipment Mfg	Motors	Switch from Belt Drive to Direct Drive	employee	Existing	236.99	12	\$52.63	16%	25%	\$0.03	8.15	8.33	2015-mdu-irp-report---volume-iii.pdf
Transportation Equipment Mfg	Motors	Motors - Synchronous Belts	employee	Existing	62.50	10	\$15.83	16%	36%	\$0.03	4.56	4.72	7th Power Plan
Transportation Equipment Mfg	Miscellaneous	Agriculture - Engine Block Timer	employee	Existing	1,621.73	3	\$20.01	0%	0%	\$0.00	0.00	0.00	Vermont TRM
Transportation Equipment Mfg	Motors	Agriculture - Live Stock Waterer	employee	Existing	1,011.78	10	\$543.77	0%	0%	\$0.07	0.00	0.00	Ontario Power TRM
Transportation Equipment Mfg	Process	Dairy - Milk Precoolers	employee	Existing	666.09	15	\$309.68	0%	0%	\$0.05	0.00	0.00	Ontario Power TRM
Transportation Equipment Mfg	Process	Clean Room: Change Filter Strategy	employee	Existing	290.49	15	\$2.14	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Process	Clean Room: Chiller Optimize	employee	Existing	198.06	15	\$18.34	0%	0%	\$0.01	0.00	0.00	7th Power Plan

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Transportation Equipment Mfg	Process	Clean Room: Clean Room HVAC	employee	Existing	120.25	15	\$22.14	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Process	Elec Chip Fab: Solidstate Chiller	employee	Existing	119.90	15	\$69.53	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Process	Elec Chip Fab: Eliminate Exhaust	employee	Existing	36.31	15	\$7.71	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Process	Elec Chip Fab: Exhaust Injector	employee	Existing	72.41	15	\$37.18	0%	0%	\$0.06	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Process	Elec Chip Fab: Reduce Gas Pressure	employee	Existing	72.62	15	\$0.75	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Motors	Panel: Hydraulic Press	employee	Existing	2,855.52	10	\$676.60	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Motors	Wood: Replace Pneumatic Conveyor	employee	Existing	3,073.59	10	\$50.67	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Process	Metal: New Arc Furnace	employee	Existing	2,724.08	10	\$285.95	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Process	Paper: Premium Control Large Material	employee	Existing	413.10	10	\$207.66	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Process	Paper: Efficient Pulp Screen	employee	Existing	332.48	10	\$68.40	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Process	Kraft: Effluent Treatment System	employee	Existing	332.48	10	\$28.04	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Motors	Kraft: Efficient Agitator	employee	Existing	5,186.26	10	\$504.90	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Process	Mech Pulp: Premium Process	employee	Existing	3.71	5	\$0.48	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Motors	Mech Pulp: Refiner Plate Improvement	employee	Existing	44.07	1	\$1.93	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Cooling	Transformer - High Efficiency	employee	Existing	82.72	10	\$133.84	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Heating	Transformer - High Efficiency	employee	Existing	506.78	10	\$133.84	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Ventilation	Transformer - High Efficiency	employee	Existing	7.63	10	\$133.84	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Interior Lighting	Transformer - High Efficiency	employee	Existing	56.61	10	\$133.84	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Exterior Lighting	Transformer - High Efficiency	employee	Existing	12.24	10	\$133.84	15%	15%	\$0.02	0.00	0.00	7th Power Plan

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Transportation Equipment Mfg	Motors	Transformer - High Efficiency	employee	Existing	227.39	10	\$133.84	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Process	Transformer - High Efficiency	employee	Existing	165.44	10	\$133.84	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Miscellaneous	Transformer - High Efficiency	employee	Existing	61.38	10	\$133.84	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Cooling	Strategic Energy Management	employee	Existing	233.73	3	\$821.98	0%	5%	\$0.08	0.14	0.16	AEG Research
Transportation Equipment Mfg	Heating	Strategic Energy Management	employee	Existing	1,454.48	3	\$821.98	0%	5%	\$0.08	1.00	1.03	AEG Research
Transportation Equipment Mfg	Ventilation	Strategic Energy Management	employee	Existing	21.80	3	\$821.98	0%	5%	\$0.08	0.08	0.09	AEG Research
Transportation Equipment Mfg	Interior Lighting	Strategic Energy Management	employee	Existing	161.63	3	\$821.98	0%	5%	\$0.08	0.50	0.65	AEG Research
Transportation Equipment Mfg	Exterior Lighting	Strategic Energy Management	employee	Existing	35.13	3	\$821.98	0%	5%	\$0.08	0.11	0.15	AEG Research
Transportation Equipment Mfg	Motors	Strategic Energy Management	employee	Existing	651.64	3	\$821.98	0%	5%	\$0.08	2.18	2.30	AEG Research
Transportation Equipment Mfg	Process	Strategic Energy Management	employee	Existing	474.01	3	\$821.98	0%	5%	\$0.08	1.65	1.67	AEG Research
Transportation Equipment Mfg	Miscellaneous	Strategic Energy Management	employee	Existing	175.70	3	\$821.98	0%	5%	\$0.08	0.78	0.64	AEG Research
Transportation Equipment Mfg	Interior Lighting	Commissioning	employee	Existing	186.34	3	\$780.99	0%	0%	\$0.15	0.00	0.00	AEG Research
Transportation Equipment Mfg	Exterior Lighting	Commissioning	employee	Existing	40.50	3	\$780.99	0%	0%	\$0.15	0.00	0.00	AEG Research
Transportation Equipment Mfg	Motors	Commissioning	employee	Existing	751.14	3	\$780.99	0%	0%	\$0.15	0.00	0.00	AEG Research
Transportation Equipment Mfg	Process	Commissioning	employee	Existing	546.37	3	\$780.99	0%	0%	\$0.15	0.00	0.00	AEG Research
Transportation Equipment Mfg	Miscellaneous	Commissioning	employee	Existing	202.49	3	\$780.99	0%	0%	\$0.15	0.00	0.00	AEG Research
Transportation Equipment Mfg	Interior Lighting	Retrocommissioning	employee	Existing	188.71	3	\$495.79	5%	39%	\$0.09	3.98	5.16	AEG Research
Transportation Equipment Mfg	Exterior Lighting	Retrocommissioning	employee	Existing	40.81	3	\$495.79	5%	39%	\$0.09	0.87	1.15	AEG Research
Transportation Equipment Mfg	Motors	Retrocommissioning	employee	Existing	757.95	3	\$495.79	5%	39%	\$0.09	17.41	18.20	AEG Research

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Transportation Equipment Mfg	Process	Retrocommissioning	employee	Existing	551.46	3	\$495.79	5%	39%	\$0.09	13.17	13.20	AEG Research
Transportation Equipment Mfg	Miscellaneous	Retrocommissioning	employee	Existing	204.60	3	\$495.79	5%	39%	\$0.09	6.20	5.06	AEG Research
Transportation Equipment Mfg	Motors	Municipal Sewage Treatment	employee	Existing	54.92	12	\$31.04	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Motors	Municipal Water Supply Treatment	employee	Existing	0.00	12	\$0.00	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Cooling	Insulation - Ceiling	sqft	New	0.11	45	\$1.28	15%	25%	\$0.16	0.23	0.23	Building Energy Simulation Tool
Transportation Equipment Mfg	Heating	Insulation - Ceiling	sqft	New	0.52	45	\$1.28	15%	25%	\$0.16	1.12	1.12	Building Energy Simulation Tool
Transportation Equipment Mfg	Ventilation	Insulation - Ceiling	sqft	New	0.01	45	\$1.28	15%	25%	\$0.16	0.13	0.15	Building Energy Simulation Tool
Transportation Equipment Mfg	Cooling	Insulation - Ducting	sqft	New	0.04	20	\$0.84	15%	25%	\$1.13	0.09	0.09	Building Energy Simulation Tool
Transportation Equipment Mfg	Heating	Insulation - Ducting	sqft	New	0.02	20	\$0.84	15%	25%	\$1.13	0.05	0.05	Building Energy Simulation Tool
Transportation Equipment Mfg	Ventilation	Insulation - Ducting	sqft	New	0.00	20	\$0.84	15%	25%	\$1.13	0.01	0.01	Building Energy Simulation Tool
Transportation Equipment Mfg	Cooling	Insulation - Wall Cavity	sqft	New	0.00	45	\$0.15	45%	50%	\$0.02	0.00	0.00	Building Energy Simulation Tool
Transportation Equipment Mfg	Heating	Insulation - Wall Cavity	sqft	New	0.71	45	\$0.15	45%	50%	\$0.02	0.76	0.76	Building Energy Simulation Tool
Transportation Equipment Mfg	Ventilation	Insulation - Wall Cavity	sqft	New	0.01	45	\$0.15	45%	50%	\$0.02	0.09	0.10	Building Energy Simulation Tool
Transportation Equipment Mfg	Cooling	HVAC - Duct Repair and Sealing	sqft	New	0.01	18	\$0.00	15%	25%	\$0.00	0.03	0.03	Building Energy Simulation Tool
Transportation Equipment Mfg	Heating	HVAC - Duct Repair and Sealing	sqft	New	0.05	18	\$0.00	15%	25%	\$0.00	0.11	0.11	Building Energy Simulation Tool
Transportation Equipment Mfg	Ventilation	HVAC - Duct Repair and Sealing	sqft	New	0.00	18	\$0.00	15%	25%	\$0.00	0.01	0.01	Building Energy Simulation Tool
Transportation Equipment Mfg	Cooling	Chiller - Chilled Water Reset	sqft	New	0.04	10	\$0.01	15%	45%	\$0.03	0.02	0.02	AEG-BEST
Transportation Equipment Mfg	Cooling	Chiller - Chilled Water Variable-Flow System	sqft	New	0.20	15	\$0.50	15%	60%	\$0.24	0.28	0.28	AEG-BEST
Transportation Equipment Mfg	Cooling	Chiller - Variable Speed Fans	sqft	New	0.07	15	\$0.03	15%	75%	\$0.04	0.14	0.14	New Jersey TRM

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Transportation Equipment Mfg	Cooling	HVAC - Economizer	sqft	New	0.27	10	\$0.25	18%	30%	\$0.11	0.09	0.09	AEG-BEST
Transportation Equipment Mfg	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.25	15%	35%	\$12.70	0.01	0.02	7th Power Plan
Transportation Equipment Mfg	Cooling	Destratification Fans (HVLS)	sqft	New	0.14	15	\$0.63	15%	50%	\$0.05	0.68	0.70	AEG Research
Transportation Equipment Mfg	Heating	Destratification Fans (HVLS)	sqft	New	1.30	15	\$0.63	15%	50%	\$0.05	6.57	6.58	AEG Research
Transportation Equipment Mfg	Cooling	RTU - Maintenance	sqft	New	0.07	3	\$0.07	15%	75%	\$0.29	0.02	0.03	AEG Research
Transportation Equipment Mfg	Cooling	Thermostat - WiFi/Interactive	sqft	New	0.26	5	\$0.66	5%	15%	\$0.09	0.09	0.09	7th Power Plan
Transportation Equipment Mfg	Heating	Thermostat - WiFi/Interactive	sqft	New	1.23	5	\$0.66	5%	15%	\$0.09	0.44	0.44	7th Power Plan
Transportation Equipment Mfg	Ventilation	Thermostat - WiFi/Interactive	sqft	New	0.02	5	\$0.66	5%	15%	\$0.09	0.05	0.06	7th Power Plan
Transportation Equipment Mfg	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.56	15	\$0.35	22%	41%	\$0.04	5.46	6.38	7th Power Plan
Transportation Equipment Mfg	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.77	15	\$0.58	22%	41%	\$0.05	7.44	8.76	7th Power Plan
Transportation Equipment Mfg	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	New	0.02	15	\$0.00	1%	2%	\$0.01	0.01	0.02	7th Power Plan
Transportation Equipment Mfg	Interior Lighting	Interior Lighting - Timeclocks and Timers	sqft	New	0.00	8	\$0.00	7%	7%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Transportation Equipment Mfg	Interior Lighting	Interior Lighting - Skylights	sqft	New	0.00	15	\$1.01	18%	24%	\$0.00	0.00	0.00	AEG Research
Transportation Equipment Mfg	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	sqft	New	0.03	16	\$1.81	5%	40%	\$4.11	0.47	0.60	7th Power Plan
Transportation Equipment Mfg	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	New	0.03	11	\$0.00	15%	50%	\$0.01	0.33	0.42	Illinois TRM
Transportation Equipment Mfg	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	sqft	New	0.04	8	\$0.03	15%	25%	\$0.08	0.26	0.36	7th Power Plan
Transportation Equipment Mfg	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	New	0.02	8	\$0.02	44%	60%	\$0.08	0.23	0.31	Pacific Gas and Electric Research
Transportation Equipment Mfg	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	New	0.02	7	\$1.19	15%	30%	\$4.56	0.22	0.30	AEG Research
Transportation Equipment Mfg	Process	Process - Conductivity Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A

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Transportation Equipment Mfg	Process	Process - Timers and Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Motors	Process - Timers and Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Process	Refrigeration - Floating Head Pressure	employee	New	100.08	15	\$68.78	20%	50%	\$0.08	0.50	0.50	RTF Workbook
Transportation Equipment Mfg	Process	Refrigeration - System Optimization	employee	New	160.34	15	\$24.05	20%	50%	\$0.02	0.81	0.81	AEG Research
Transportation Equipment Mfg	Motors	Pumping System - Equipment Upgrade	employee	New	430.18	10	\$61.74	9%	38%	\$0.05	1.31	1.30	7th Power Plan
Transportation Equipment Mfg	Motors	Pumping System - System Optimization	employee	New	321.12	12	\$94.10	9%	38%	\$0.04	1.55	1.54	UNIDO Study on Industrial Energy Efficiency
Transportation Equipment Mfg	Motors	Pumping System - Variable Speed Drive	employee	New	319.69	10	\$97.90	9%	38%	\$0.04	1.33	1.33	UNIDO Study on Industrial Energy Efficiency
Transportation Equipment Mfg	Motors	Fan System - Equipment Upgrade	employee	New	113.15	10	\$11.12	9%	38%	\$0.05	0.47	0.47	UNIDO Study on Industrial Energy Efficiency
Transportation Equipment Mfg	Motors	Fan System - Flow Optimization	employee	New	133.64	10	\$18.40	9%	38%	\$0.02	0.56	0.55	UNIDO Study on Industrial Energy Efficiency
Transportation Equipment Mfg	Motors	Fan System - Variable Speed Drive	employee	New	201.29	10	\$92.59	9%	38%	\$0.06	0.84	0.84	UNIDO Study on Industrial Energy Efficiency
Transportation Equipment Mfg	Motors	Compressed Air - Equipment Upgrade	employee	New	768.03	10	\$55.89	17%	50%	\$0.04	2.71	2.71	7th Power Plan
Transportation Equipment Mfg	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	New	0.00	15	\$0.00	16%	38%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Transportation Equipment Mfg	Motors	Compressed Air - Refrigerated Cycling Dryers	employee	New	0.00	10	\$0.00	16%	30%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Transportation Equipment Mfg	Motors	Compressed Air - System Controls	employee	New	172.70	10	\$39.96	9%	38%	\$0.03	0.53	0.52	UNIDO Study on Industrial Energy Efficiency
Transportation Equipment Mfg	Motors	Compressed Air - Leak Management Program	employee	New	436.97	10	\$40.17	18%	75%	\$0.04	2.65	2.65	7th Power Plan
Transportation Equipment Mfg	Motors	Compressed Air - Variable Speed Drive	employee	New	320.04	15	\$244.98	26%	45%	\$0.08	1.04	1.03	UNIDO Study on Industrial Energy Efficiency
Transportation Equipment Mfg	Motors	Compressed Air - Low Pressure-Drop Filters	employee	New	10.67	10	\$3.78	17%	50%	\$0.05	0.04	0.04	Illinois TRM
Transportation Equipment Mfg	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	New	64.90	10	\$12.25	17%	50%	\$0.03	0.23	0.23	UNIDO Study on Industrial Energy Efficiency
Transportation Equipment Mfg	Motors	Compressed Air - Outside Air Intake	employee	New	0.00	20	\$0.00	17%	50%	\$0.00	0.00	0.00	Michigan Energy Measures Database

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Transportation Equipment Mfg	Motors	Compressed Air - Receiver Capacity Addition	employee	New	64.62	15	\$33.69	17%	50%	\$0.06	0.37	0.36	UNIDO Study on Industrial Energy Efficiency
Transportation Equipment Mfg	Motors	Material Handling - Variable Speed Drive	employee	New	1,944.09	10	\$677.00	25%	45%	\$0.05	5.69	5.67	7th Power Plan
Transportation Equipment Mfg	Motors	Motors - Green Rewind (<100 HP)	employee	New	28.45	10	\$11.99	10%	50%	\$0.06	0.83	0.83	7th Power Plan
Transportation Equipment Mfg	Motors	Motors - Green Rewind (100 HP+)	employee	New	15.98	10	\$4.26	6%	25%	\$0.04	0.22	0.22	7th Power Plan
Transportation Equipment Mfg	Motors	Switch from Belt Drive to Direct Drive	employee	New	241.19	12	\$52.63	16%	25%	\$0.03	1.93	1.93	2015-mdu-irp-report---volume-iii.pdf
Transportation Equipment Mfg	Motors	Motors - Synchronous Belts	employee	New	63.98	10	\$15.83	16%	36%	\$0.03	0.68	0.68	7th Power Plan
Transportation Equipment Mfg	Miscellaneous	Agriculture - Engine Block Timer	employee	New	1,621.73	3	\$20.01	0%	0%	\$0.00	0.00	0.00	Vermont TRM
Transportation Equipment Mfg	Motors	Agriculture - Live Stock Waterer	employee	New	1,052.53	10	\$543.77	0%	0%	\$0.07	0.00	0.00	Ontario Power TRM
Transportation Equipment Mfg	Process	Dairy - Milk Precoolers	employee	New	667.18	15	\$309.68	0%	0%	\$0.05	0.00	0.00	Ontario Power TRM
Transportation Equipment Mfg	Process	Clean Room: Change Filter Strategy	employee	New	290.49	15	\$2.14	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Process	Clean Room: Chiller Optimize	employee	New	198.06	15	\$18.34	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Process	Clean Room: Clean Room HVAC	employee	New	120.09	15	\$22.14	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Process	Elec Chip Fab: Solidstate Chiller	employee	New	120.09	15	\$69.53	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Process	Elec Chip Fab: Eliminate Exhaust	employee	New	36.26	15	\$7.71	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Process	Elec Chip Fab: Exhaust Injector	employee	New	72.53	15	\$37.18	0%	0%	\$0.06	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Process	Elec Chip Fab: Reduce Gas Pressure	employee	New	72.62	15	\$0.75	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Motors	Panel: Hydraulic Press	employee	New	2,919.36	10	\$676.60	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Motors	Wood: Replace Pneumatic Conveyor	employee	New	3,073.59	10	\$50.67	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Process	Metal: New Arc Furnace	employee	New	2,720.42	10	\$285.95	0%	0%	\$0.01	0.00	0.00	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Transportation Equipment Mfg	Process	Paper: Premium Control Large Material	employee	New	414.20	10	\$207.66	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Process	Paper: Efficient Pulp Screen	employee	New	332.04	10	\$68.40	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Process	Kraft: Effluent Treatment System	employee	New	332.04	10	\$28.04	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Motors	Kraft: Efficient Agitator	employee	New	5,253.96	10	\$504.90	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Process	Mech Pulp: Premium Process	employee	New	3.71	5	\$0.48	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Motors	Mech Pulp: Refiner Plate Improvement	employee	New	45.84	1	\$1.93	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Cooling	Transformer - High Efficiency	employee	New	74.10	10	\$129.57	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Heating	Transformer - High Efficiency	employee	New	484.28	10	\$129.57	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Ventilation	Transformer - High Efficiency	employee	New	4.31	10	\$129.57	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Interior Lighting	Transformer - High Efficiency	employee	New	43.01	10	\$129.57	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Exterior Lighting	Transformer - High Efficiency	employee	New	8.89	10	\$129.57	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Motors	Transformer - High Efficiency	employee	New	236.55	10	\$129.57	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Process	Transformer - High Efficiency	employee	New	165.88	10	\$129.57	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Miscellaneous	Transformer - High Efficiency	employee	New	58.14	10	\$129.57	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Cooling	Strategic Energy Management	employee	New	211.61	3	\$795.76	0%	5%	\$0.08	0.00	0.00	AEG Research
Transportation Equipment Mfg	Heating	Strategic Energy Management	employee	New	1,395.62	3	\$795.76	0%	5%	\$0.08	0.02	0.02	AEG Research
Transportation Equipment Mfg	Ventilation	Strategic Energy Management	employee	New	12.41	3	\$795.76	0%	5%	\$0.08	0.00	0.00	AEG Research
Transportation Equipment Mfg	Interior Lighting	Strategic Energy Management	employee	New	123.96	3	\$795.76	0%	5%	\$0.08	0.01	0.01	AEG Research
Transportation Equipment Mfg	Exterior Lighting	Strategic Energy Management	employee	New	25.68	3	\$795.76	0%	5%	\$0.08	0.00	0.00	AEG Research

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Transportation Equipment Mfg	Motors	Strategic Energy Management	employee	New	683.35	3	\$795.76	0%	5%	\$0.08	0.04	0.04	AEG Research
Transportation Equipment Mfg	Process	Strategic Energy Management	employee	New	479.21	3	\$795.76	0%	5%	\$0.08	0.03	0.03	AEG Research
Transportation Equipment Mfg	Miscellaneous	Strategic Energy Management	employee	New	167.96	3	\$795.76	0%	5%	\$0.08	0.01	0.01	AEG Research
Transportation Equipment Mfg	Interior Lighting	Commissioning	employee	New	143.00	3	\$792.25	5%	39%	\$0.15	0.07	0.10	AEG Research
Transportation Equipment Mfg	Exterior Lighting	Commissioning	employee	New	29.62	3	\$792.25	5%	39%	\$0.15	0.02	0.02	AEG Research
Transportation Equipment Mfg	Motors	Commissioning	employee	New	788.33	3	\$792.25	5%	39%	\$0.15	0.33	0.33	AEG Research
Transportation Equipment Mfg	Process	Commissioning	employee	New	552.82	3	\$792.25	5%	39%	\$0.15	0.23	0.23	AEG Research
Transportation Equipment Mfg	Miscellaneous	Commissioning	employee	New	193.76	3	\$792.25	5%	39%	\$0.15	0.10	0.07	AEG Research
Transportation Equipment Mfg	Interior Lighting	Retrocommissioning	employee	New	143.38	3	\$502.94	0%	0%	\$0.09	0.00	0.00	AEG Research
Transportation Equipment Mfg	Exterior Lighting	Retrocommissioning	employee	New	29.63	3	\$502.94	0%	0%	\$0.09	0.00	0.00	AEG Research
Transportation Equipment Mfg	Motors	Retrocommissioning	employee	New	788.48	3	\$502.94	0%	0%	\$0.09	0.00	0.00	AEG Research
Transportation Equipment Mfg	Process	Retrocommissioning	employee	New	552.93	3	\$502.94	0%	0%	\$0.09	0.00	0.00	AEG Research
Transportation Equipment Mfg	Miscellaneous	Retrocommissioning	employee	New	193.80	3	\$502.94	0%	0%	\$0.09	0.00	0.00	AEG Research
Transportation Equipment Mfg	Motors	Municipal Sewage Treatment	employee	New	57.00	12	\$31.04	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Transportation Equipment Mfg	Motors	Municipal Water Supply Treatment	employee	New	0.00	12	\$0.00	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Wastewater	Cooling	Insulation - Ceiling	sqft	Existing	0.12	45	\$1.28	15%	25%	\$0.15	0.62	0.66	Building Energy Simulation Tool
Wastewater	Heating	Insulation - Ceiling	sqft	Existing	0.55	45	\$1.28	15%	25%	\$0.15	3.02	3.11	Building Energy Simulation Tool
Wastewater	Ventilation	Insulation - Ceiling	sqft	Existing	0.02	45	\$1.28	15%	25%	\$0.15	0.44	0.50	Building Energy Simulation Tool
Wastewater	Cooling	Insulation - Ducting	sqft	Existing	0.05	20	\$0.84	15%	25%	\$1.05	0.22	0.25	Building Energy Simulation Tool

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Wastewater	Heating	Insulation - Ducting	sqft	Existing	0.02	20	\$0.84	15%	25%	\$1.05	0.13	0.13	Building Energy Simulation Tool
Wastewater	Ventilation	Insulation - Ducting	sqft	Existing	0.00	20	\$0.84	15%	25%	\$1.05	0.02	0.02	Building Energy Simulation Tool
Wastewater	Cooling	Insulation - Wall Cavity	sqft	Existing	0.00	45	\$0.15	45%	50%	\$0.02	0.01	0.01	Building Energy Simulation Tool
Wastewater	Heating	Insulation - Wall Cavity	sqft	Existing	0.76	45	\$0.15	45%	50%	\$0.02	2.15	2.15	Building Energy Simulation Tool
Wastewater	Ventilation	Insulation - Wall Cavity	sqft	Existing	0.02	45	\$0.15	45%	50%	\$0.02	0.29	0.33	Building Energy Simulation Tool
Wastewater	Cooling	HVAC - Duct Repair and Sealing	sqft	Existing	0.02	18	\$0.00	15%	25%	\$0.00	0.08	0.09	Building Energy Simulation Tool
Wastewater	Heating	HVAC - Duct Repair and Sealing	sqft	Existing	0.05	18	\$0.00	15%	25%	\$0.00	0.30	0.30	Building Energy Simulation Tool
Wastewater	Ventilation	HVAC - Duct Repair and Sealing	sqft	Existing	0.00	18	\$0.00	15%	25%	\$0.00	0.04	0.05	Building Energy Simulation Tool
Wastewater	Cooling	Chiller - Chilled Water Reset	sqft	Existing	0.05	10	\$0.01	15%	45%	\$0.03	0.20	0.21	AEG-BEST
Wastewater	Cooling	Chiller - Chilled Water Variable-Flow System	sqft	Existing	0.25	15	\$0.50	15%	60%	\$0.20	1.57	1.73	AEG-BEST
Wastewater	Cooling	Chiller - Variable Speed Fans	sqft	Existing	0.10	15	\$0.03	15%	75%	\$0.04	0.81	0.86	New Jersey TRM
Wastewater	Cooling	HVAC - Economizer	sqft	Existing	0.22	10	\$0.25	18%	30%	\$0.14	0.76	0.84	AEG-BEST
Wastewater	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.25	15%	35%	\$10.61	0.09	0.11	7th Power Plan
Wastewater	Cooling	Destratification Fans (HVLS)	sqft	Existing	0.16	15	\$0.63	15%	50%	\$0.05	3.45	3.66	AEG Research
Wastewater	Heating	Destratification Fans (HVLS)	sqft	Existing	1.39	15	\$0.63	15%	50%	\$0.05	33.21	33.42	AEG Research
Wastewater	Cooling	RTU - Maintenance	sqft	Existing	0.08	3	\$0.07	15%	75%	\$0.28	1.43	1.61	AEG Research
Wastewater	Cooling	Thermostat - WiFi/Interactive	sqft	Existing	0.29	5	\$0.66	5%	15%	\$0.09	1.41	1.52	7th Power Plan
Wastewater	Heating	Thermostat - WiFi/Interactive	sqft	Existing	1.29	5	\$0.66	5%	15%	\$0.09	7.11	7.33	7th Power Plan
Wastewater	Ventilation	Thermostat - WiFi/Interactive	sqft	Existing	0.04	5	\$0.66	5%	15%	\$0.09	1.02	1.17	7th Power Plan
Wastewater	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.53	15	\$0.35	7%	33%	\$0.06	15.43	18.60	7th Power Plan
Wastewater	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.74	15	\$0.58	7%	33%	\$0.06	20.74	25.57	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Wastewater	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	Existing	0.02	15	\$0.00	1%	2%	\$0.01	0.10	0.13	7th Power Plan
Wastewater	Interior Lighting	Interior Lighting - Timeclocks and Timers	sqft	Existing	0.00	8	\$0.00	7%	7%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Wastewater	Interior Lighting	Interior Lighting - Skylights	sqft	Existing	0.00	15	\$1.01	15%	23%	\$0.00	0.00	0.00	AEG Research
Wastewater	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	sqft	Existing	0.03	16	\$1.81	5%	40%	\$4.11	2.88	4.07	7th Power Plan
Wastewater	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	Existing	0.04	11	\$0.00	15%	50%	\$0.01	3.19	4.11	Illinois TRM
Wastewater	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	sqft	Existing	0.05	8	\$0.03	15%	25%	\$0.08	3.90	5.30	7th Power Plan
Wastewater	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	Existing	0.03	8	\$0.02	33%	60%	\$0.08	5.43	7.58	Pacific Gas and Electric Research
Wastewater	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	Existing	0.03	7	\$1.19	15%	30%	\$4.54	3.40	5.01	AEG Research
Wastewater	Process	Process - Conductivity Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Wastewater	Process	Process - Timers and Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Wastewater	Motors	Process - Timers and Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Wastewater	Process	Refrigeration - Floating Head Pressure	employee	Existing	0.00	15	\$421.61	20%	50%	\$0.00	0.00	0.00	RTF Workbook
Wastewater	Process	Refrigeration - System Optimization	employee	Existing	0.00	15	\$296.89	20%	50%	\$0.00	0.00	0.00	AEG Research
Wastewater	Motors	Pumping System - Equipment Upgrade	employee	Existing	9,750.75	10	\$1,428.18	9%	38%	\$0.05	203.95	210.04	7th Power Plan
Wastewater	Motors	Pumping System - System Optimization	employee	Existing	7,205.64	12	\$2,176.55	9%	38%	\$0.04	146.99	152.67	UNIDO Study on Industrial Energy Efficiency
Wastewater	Motors	Pumping System - Variable Speed Drive	employee	Existing	7,129.77	10	\$2,264.42	9%	38%	\$0.04	144.50	151.46	UNIDO Study on Industrial Energy Efficiency
Wastewater	Motors	Fan System - Equipment Upgrade	employee	Existing	13,577.70	10	\$1,326.10	9%	38%	\$0.05	284.20	284.65	UNIDO Study on Industrial Energy Efficiency
Wastewater	Motors	Fan System - Flow Optimization	employee	Existing	15,841.71	10	\$2,194.10	9%	38%	\$0.02	328.95	333.21	UNIDO Study on Industrial Energy Efficiency
Wastewater	Motors	Fan System - Variable Speed Drive	employee	Existing	23,131.41	10	\$11,040.58	9%	38%	\$0.06	465.24	492.82	UNIDO Study on Industrial Energy Efficiency

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Wastewater	Motors	Compressed Air - Equipment Upgrade	employee	Existing	926.27	10	\$67.40	17%	50%	\$0.04	23.03	23.03	7th Power Plan
Wastewater	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	Existing	0.00	15	\$0.00	16%	38%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Wastewater	Motors	Compressed Air - Refrigerated Cycling Dryers	employee	Existing	0.00	10	\$0.00	16%	30%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Wastewater	Motors	Compressed Air - System Controls	employee	Existing	201.01	10	\$48.19	9%	38%	\$0.03	4.15	4.36	UNIDO Study on Industrial Energy Efficiency
Wastewater	Motors	Compressed Air - Leak Management Program	employee	Existing	528.71	10	\$48.44	18%	75%	\$0.04	22.52	22.54	7th Power Plan
Wastewater	Motors	Compressed Air - Variable Speed Drive	employee	Existing	372.40	15	\$295.46	26%	45%	\$0.08	5.09	5.41	UNIDO Study on Industrial Energy Efficiency
Wastewater	Motors	Compressed Air - Low Pressure-Drop Filters	employee	Existing	12.41	10	\$4.55	17%	50%	\$0.05	0.30	0.32	Illinois TRM
Wastewater	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	Existing	75.91	10	\$14.77	17%	50%	\$0.03	1.84	1.92	UNIDO Study on Industrial Energy Efficiency
Wastewater	Motors	Compressed Air - Outside Air Intake	employee	Existing	0.00	20	\$0.00	17%	50%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Wastewater	Motors	Compressed Air - Receiver Capacity Addition	employee	Existing	75.11	15	\$40.63	17%	50%	\$0.06	1.81	1.90	UNIDO Study on Industrial Energy Efficiency
Wastewater	Motors	Material Handling - Variable Speed Drive	employee	Existing	2,079.70	10	\$755.09	25%	45%	\$0.05	29.44	31.06	7th Power Plan
Wastewater	Motors	Motors - Green Rewind (<100 HP)	employee	Existing	324.04	10	\$141.55	10%	50%	\$0.06	45.80	48.42	7th Power Plan
Wastewater	Motors	Motors - Green Rewind (100 HP+)	employee	Existing	181.87	10	\$50.24	6%	25%	\$0.04	12.29	12.88	7th Power Plan
Wastewater	Motors	Switch from Belt Drive to Direct Drive	employee	Existing	2,767.74	12	\$621.33	16%	25%	\$0.03	94.37	97.63	2015-mdu-irp-report---volume-iii.pdf
Wastewater	Motors	Motors - Synchronous Belts	employee	Existing	729.46	10	\$186.92	16%	36%	\$0.03	52.72	55.41	7th Power Plan
Wastewater	Miscellaneous	Agriculture - Engine Block Timer	employee	Existing	3,528.81	3	\$43.53	0%	0%	\$0.00	0.00	0.00	Vermont TRM
Wastewater	Motors	Agriculture - Live Stock Waterer	employee	Existing	22,957.40	10	\$12,577.65	0%	0%	\$0.07	0.00	0.00	Ontario Power TRM
Wastewater	Process	Dairy - Milk Precoolers	employee	Existing	0.00	15	\$1,341.59	0%	0%	\$0.00	0.00	0.00	Ontario Power TRM
Wastewater	Process	Clean Room: Change Filter Strategy	employee	Existing	0.00	15	\$17.08	0%	0%	\$0.00	0.00	0.00	7th Power Plan

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Wastewater	Process	Clean Room: Chiller Optimize	employee	Existing	0.00	15	\$79.44	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Wastewater	Process	Clean Room: Clean Room HVAC	employee	Existing	0.00	15	\$95.89	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Wastewater	Process	Elec Chip Fab: Solidstate Chiller	employee	Existing	0.00	15	\$301.21	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Wastewater	Process	Elec Chip Fab: Eliminate Exhaust	employee	Existing	0.00	15	\$61.44	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Wastewater	Process	Elec Chip Fab: Exhaust Injector	employee	Existing	0.00	15	\$296.37	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Wastewater	Process	Elec Chip Fab: Reduce Gas Pressure	employee	Existing	0.00	15	\$5.94	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Wastewater	Motors	Panel: Hydraulic Press	employee	Existing	3,141.77	10	\$754.63	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Wastewater	Motors	Wood: Replace Pneumatic Conveyor	employee	Existing	3,428.10	10	\$56.52	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Wastewater	Process	Metal: New Arc Furnace	employee	Existing	0.00	10	\$273.43	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Wastewater	Process	Paper: Premium Control Large Material	employee	Existing	1,834.53	10	\$917.75	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Wastewater	Process	Paper: Efficient Pulp Screen	employee	Existing	1,469.40	10	\$302.31	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Wastewater	Process	Kraft: Effluent Treatment System	employee	Existing	1,469.40	10	\$123.94	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Wastewater	Motors	Kraft: Efficient Agitator	employee	Existing	5,897.55	10	\$563.13	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Wastewater	Process	Mech Pulp: Premium Process	employee	Existing	16.45	5	\$2.12	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Wastewater	Motors	Mech Pulp: Refiner Plate Improvement	employee	Existing	48.21	1	\$2.15	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Wastewater	Cooling	Transformer - High Efficiency	employee	Existing	94.17	10	\$449.37	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Wastewater	Heating	Transformer - High Efficiency	employee	Existing	573.41	10	\$449.37	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Wastewater	Ventilation	Transformer - High Efficiency	employee	Existing	8.63	10	\$449.37	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Wastewater	Interior Lighting	Transformer - High Efficiency	employee	Existing	81.99	10	\$449.37	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Wastewater	Exterior Lighting	Transformer - High Efficiency	employee	Existing	17.73	10	\$449.37	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Wastewater	Motors	Transformer - High Efficiency	employee	Existing	2,633.45	10	\$449.37	15%	15%	\$0.02	0.00	0.00	7th Power Plan

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Wastewater	Process	Transformer - High Efficiency	employee	Existing	146.94	10	\$449.37	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Wastewater	Miscellaneous	Transformer - High Efficiency	employee	Existing	133.56	10	\$449.37	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Wastewater	Cooling	Strategic Energy Management	employee	Existing	264.46	3	\$2,759.89	0%	5%	\$0.08	0.16	0.18	AEG Research
Wastewater	Heating	Strategic Energy Management	employee	Existing	1,645.71	3	\$2,759.89	0%	5%	\$0.08	1.13	1.17	AEG Research
Wastewater	Ventilation	Strategic Energy Management	employee	Existing	24.66	3	\$2,759.89	0%	5%	\$0.08	0.09	0.10	AEG Research
Wastewater	Interior Lighting	Strategic Energy Management	employee	Existing	234.08	3	\$2,759.89	0%	5%	\$0.08	0.72	0.94	AEG Research
Wastewater	Exterior Lighting	Strategic Energy Management	employee	Existing	50.88	3	\$2,759.89	0%	5%	\$0.08	0.16	0.21	AEG Research
Wastewater	Motors	Strategic Energy Management	employee	Existing	7,547.58	3	\$2,759.89	0%	5%	\$0.08	24.89	26.65	AEG Research
Wastewater	Process	Strategic Energy Management	employee	Existing	421.00	3	\$2,759.89	0%	5%	\$0.08	1.47	1.48	AEG Research
Wastewater	Miscellaneous	Strategic Energy Management	employee	Existing	382.31	3	\$2,759.89	0%	5%	\$0.08	1.69	1.39	AEG Research
Wastewater	Interior Lighting	Commissioning	employee	Existing	269.86	3	\$4,879.15	0%	0%	\$0.16	0.00	0.00	AEG Research
Wastewater	Exterior Lighting	Commissioning	employee	Existing	58.66	3	\$4,879.15	0%	0%	\$0.16	0.00	0.00	AEG Research
Wastewater	Motors	Commissioning	employee	Existing	8,700.02	3	\$4,879.15	0%	0%	\$0.16	0.00	0.00	AEG Research
Wastewater	Process	Commissioning	employee	Existing	485.27	3	\$4,879.15	0%	0%	\$0.16	0.00	0.00	AEG Research
Wastewater	Miscellaneous	Commissioning	employee	Existing	440.61	3	\$4,879.15	0%	0%	\$0.16	0.00	0.00	AEG Research
Wastewater	Interior Lighting	Retrocommissioning	employee	Existing	273.30	3	\$3,097.38	5%	39%	\$0.10	5.77	7.47	AEG Research
Wastewater	Exterior Lighting	Retrocommissioning	employee	Existing	59.10	3	\$3,097.38	5%	39%	\$0.10	1.27	1.67	AEG Research
Wastewater	Motors	Retrocommissioning	employee	Existing	8,778.17	3	\$3,097.38	5%	39%	\$0.10	198.58	210.77	AEG Research
Wastewater	Process	Retrocommissioning	employee	Existing	489.80	3	\$3,097.38	5%	39%	\$0.10	11.72	11.72	AEG Research
Wastewater	Miscellaneous	Retrocommissioning	employee	Existing	445.20	3	\$3,097.38	5%	39%	\$0.10	13.49	11.02	AEG Research
Wastewater	Motors	Municipal Sewage Treatment	employee	Existing	1,273.24	12	\$717.97	15%	35%	\$0.07	18.01	19.02	7th Power Plan
Wastewater	Motors	Municipal Water Supply Treatment	employee	Existing	0.00	12	\$0.00	0%	0%	\$0.00	0.00	0.00	7th Power Plan

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Wastewater	Cooling	Insulation - Ceiling	sqft	New	0.11	45	\$1.28	15%	25%	\$0.16	0.25	0.26	Building Energy Simulation Tool
Wastewater	Heating	Insulation - Ceiling	sqft	New	0.52	45	\$1.28	15%	25%	\$0.16	1.27	1.27	Building Energy Simulation Tool
Wastewater	Ventilation	Insulation - Ceiling	sqft	New	0.01	45	\$1.28	15%	25%	\$0.16	0.15	0.17	Building Energy Simulation Tool
Wastewater	Cooling	Insulation - Ducting	sqft	New	0.04	20	\$0.84	15%	25%	\$1.13	0.10	0.10	Building Energy Simulation Tool
Wastewater	Heating	Insulation - Ducting	sqft	New	0.02	20	\$0.84	15%	25%	\$1.13	0.05	0.05	Building Energy Simulation Tool
Wastewater	Ventilation	Insulation - Ducting	sqft	New	0.00	20	\$0.84	15%	25%	\$1.13	0.01	0.01	Building Energy Simulation Tool
Wastewater	Cooling	Insulation - Wall Cavity	sqft	New	0.00	45	\$0.15	45%	50%	\$0.02	0.00	0.00	Building Energy Simulation Tool
Wastewater	Heating	Insulation - Wall Cavity	sqft	New	0.71	45	\$0.15	45%	50%	\$0.02	0.86	0.87	Building Energy Simulation Tool
Wastewater	Ventilation	Insulation - Wall Cavity	sqft	New	0.01	45	\$0.15	45%	50%	\$0.02	0.10	0.11	Building Energy Simulation Tool
Wastewater	Cooling	HVAC - Duct Repair and Sealing	sqft	New	0.01	18	\$0.00	15%	25%	\$0.00	0.03	0.03	Building Energy Simulation Tool
Wastewater	Heating	HVAC - Duct Repair and Sealing	sqft	New	0.05	18	\$0.00	15%	25%	\$0.00	0.12	0.12	Building Energy Simulation Tool
Wastewater	Ventilation	HVAC - Duct Repair and Sealing	sqft	New	0.00	18	\$0.00	15%	25%	\$0.00	0.01	0.02	Building Energy Simulation Tool
Wastewater	Cooling	Chiller - Chilled Water Reset	sqft	New	0.04	10	\$0.01	15%	45%	\$0.03	0.02	0.02	AEG-BEST
Wastewater	Cooling	Chiller - Chilled Water Variable-Flow System	sqft	New	0.20	15	\$0.50	15%	60%	\$0.24	0.31	0.32	AEG-BEST
Wastewater	Cooling	Chiller - Variable Speed Fans	sqft	New	0.07	15	\$0.03	15%	75%	\$0.04	0.15	0.16	New Jersey TRM
Wastewater	Cooling	HVAC - Economizer	sqft	New	0.20	10	\$0.25	18%	30%	\$0.16	0.10	0.11	AEG-BEST
Wastewater	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.25	15%	35%	\$12.70	0.02	0.02	7th Power Plan
Wastewater	Cooling	Destratification Fans (HVLS)	sqft	New	0.14	15	\$0.63	15%	50%	\$0.05	0.76	0.79	AEG Research
Wastewater	Heating	Destratification Fans (HVLS)	sqft	New	1.30	15	\$0.63	15%	50%	\$0.05	7.43	7.45	AEG Research
Wastewater	Cooling	RTU - Maintenance	sqft	New	0.07	3	\$0.07	15%	75%	\$0.29	0.03	0.03	AEG Research
Wastewater	Cooling	Thermostat - WiFi/Interactive	sqft	New	0.26	5	\$0.66	5%	15%	\$0.09	0.10	0.10	7th Power Plan

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Wastewater	Heating	Thermostat - WiFi/Interactive	sqft	New	1.23	5	\$0.66	5%	15%	\$0.09	0.50	0.50	7th Power Plan
Wastewater	Ventilation	Thermostat - WiFi/Interactive	sqft	New	0.02	5	\$0.66	5%	15%	\$0.09	0.06	0.07	7th Power Plan
Wastewater	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.41	15	\$0.35	22%	41%	\$0.05	7.91	9.24	7th Power Plan
Wastewater	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.56	15	\$0.58	22%	41%	\$0.06	10.77	12.68	7th Power Plan
Wastewater	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	New	0.02	15	\$0.00	1%	2%	\$0.01	0.02	0.02	7th Power Plan
Wastewater	Interior Lighting	Interior Lighting - Timeclocks and Timers	sqft	New	0.00	8	\$0.00	7%	7%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Wastewater	Interior Lighting	Interior Lighting - Skylights	sqft	New	0.00	15	\$1.01	18%	24%	\$0.00	0.00	0.00	AEG Research
Wastewater	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	sqft	New	0.03	16	\$1.81	5%	40%	\$4.11	0.69	0.87	7th Power Plan
Wastewater	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	New	0.03	11	\$0.00	15%	50%	\$0.01	0.47	0.61	Illinois TRM
Wastewater	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	sqft	New	0.04	8	\$0.03	15%	25%	\$0.08	0.38	0.53	7th Power Plan
Wastewater	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	New	0.02	8	\$0.02	44%	60%	\$0.08	0.33	0.45	Pacific Gas and Electric Research
Wastewater	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	New	0.02	7	\$1.19	15%	30%	\$4.56	0.32	0.44	AEG Research
Wastewater	Process	Process - Conductivity Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Wastewater	Process	Process - Timers and Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Wastewater	Motors	Process - Timers and Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Wastewater	Process	Refrigeration - Floating Head Pressure	employee	New	0.00	15	\$297.96	20%	50%	\$0.00	0.00	0.00	RTF Workbook
Wastewater	Process	Refrigeration - System Optimization	employee	New	0.00	15	\$104.19	20%	50%	\$0.00	0.00	0.00	AEG Research
Wastewater	Motors	Pumping System - Equipment Upgrade	employee	New	9,908.89	10	\$1,428.18	9%	38%	\$0.05	30.09	30.10	7th Power Plan
Wastewater	Motors	Pumping System - System Optimization	employee	New	7,384.36	12	\$2,176.55	9%	38%	\$0.04	35.54	35.41	UNIDO Study on Industrial Energy Efficiency

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Wastewater	Motors	Pumping System - Variable Speed Drive	employee	New	7,347.42	10	\$2,264.42	9%	38%	\$0.04	30.64	30.53	UNIDO Study on Industrial Energy Efficiency
Wastewater	Motors	Fan System - Equipment Upgrade	employee	New	13,595.62	10	\$1,326.10	9%	38%	\$0.05	56.43	56.42	UNIDO Study on Industrial Energy Efficiency
Wastewater	Motors	Fan System - Flow Optimization	employee	New	15,970.75	10	\$2,194.10	9%	38%	\$0.02	66.36	66.29	UNIDO Study on Industrial Energy Efficiency
Wastewater	Motors	Fan System - Variable Speed Drive	employee	New	23,983.39	10	\$11,040.58	9%	38%	\$0.06	100.11	99.67	UNIDO Study on Industrial Energy Efficiency
Wastewater	Motors	Compressed Air - Equipment Upgrade	employee	New	926.27	10	\$67.40	17%	50%	\$0.04	3.27	3.27	7th Power Plan
Wastewater	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	New	0.00	15	\$0.00	16%	38%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Wastewater	Motors	Compressed Air - Refrigerated Cycling Dryers	employee	New	0.00	10	\$0.00	16%	30%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Wastewater	Motors	Compressed Air - System Controls	employee	New	206.71	10	\$48.19	9%	38%	\$0.03	0.63	0.63	UNIDO Study on Industrial Energy Efficiency
Wastewater	Motors	Compressed Air - Leak Management Program	employee	New	529.07	10	\$48.44	18%	75%	\$0.04	3.21	3.21	7th Power Plan
Wastewater	Motors	Compressed Air - Variable Speed Drive	employee	New	385.45	15	\$295.46	26%	45%	\$0.08	1.25	1.24	UNIDO Study on Industrial Energy Efficiency
Wastewater	Motors	Compressed Air - Low Pressure-Drop Filters	employee	New	12.85	10	\$4.55	17%	50%	\$0.05	0.05	0.05	Illinois TRM
Wastewater	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	New	77.79	10	\$14.77	17%	50%	\$0.03	0.28	0.28	UNIDO Study on Industrial Energy Efficiency
Wastewater	Motors	Compressed Air - Outside Air Intake	employee	New	0.00	20	\$0.00	17%	50%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Wastewater	Motors	Compressed Air - Receiver Capacity Addition	employee	New	77.40	15	\$40.63	17%	50%	\$0.06	0.44	0.44	UNIDO Study on Industrial Energy Efficiency
Wastewater	Motors	Material Handling - Variable Speed Drive	employee	New	2,150.96	10	\$755.09	25%	45%	\$0.05	6.30	6.27	7th Power Plan
Wastewater	Motors	Motors - Green Rewind (<100 HP)	employee	New	335.59	10	\$141.55	10%	50%	\$0.06	9.83	9.79	7th Power Plan
Wastewater	Motors	Motors - Green Rewind (100 HP+)	employee	New	187.36	10	\$50.24	6%	25%	\$0.04	2.60	2.59	7th Power Plan
Wastewater	Motors	Switch from Belt Drive to Direct Drive	employee	New	2,829.96	12	\$621.33	16%	25%	\$0.03	22.70	22.61	2015-mdu-irp-report---volume-iii.pdf
Wastewater	Motors	Motors - Synchronous Belts	employee	New	750.24	10	\$186.92	16%	36%	\$0.03	7.99	7.99	7th Power Plan

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Wastewater	Miscellaneous	Agriculture - Engine Block Timer	employee	New	3,528.81	3	\$43.53	0%	0%	\$0.00	0.00	0.00	Vermont TRM
Wastewater	Motors	Agriculture - Live Stock Waterer	employee	New	24,088.70	10	\$12,577.65	0%	0%	\$0.07	0.00	0.00	Ontario Power TRM
Wastewater	Process	Dairy - Milk Precoolers	employee	New	0.00	15	\$1,341.59	0%	0%	\$0.00	0.00	0.00	Ontario Power TRM
Wastewater	Process	Clean Room: Change Filter Strategy	employee	New	0.00	15	\$17.08	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Wastewater	Process	Clean Room: Chiller Optimize	employee	New	0.00	15	\$79.44	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Wastewater	Process	Clean Room: Clean Room HVAC	employee	New	0.00	15	\$95.89	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Wastewater	Process	Elec Chip Fab: Solidstate Chiller	employee	New	0.00	15	\$301.21	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Wastewater	Process	Elec Chip Fab: Eliminate Exhaust	employee	New	0.00	15	\$61.44	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Wastewater	Process	Elec Chip Fab: Exhaust Injector	employee	New	0.00	15	\$296.37	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Wastewater	Process	Elec Chip Fab: Reduce Gas Pressure	employee	New	0.00	15	\$5.94	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Wastewater	Motors	Panel: Hydraulic Press	employee	New	3,231.57	10	\$754.63	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Wastewater	Motors	Wood: Replace Pneumatic Conveyor	employee	New	3,428.10	10	\$56.52	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Wastewater	Process	Metal: New Arc Furnace	employee	New	0.00	10	\$273.43	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Wastewater	Process	Paper: Premium Control Large Material	employee	New	1,834.53	10	\$917.75	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Wastewater	Process	Paper: Efficient Pulp Screen	employee	New	1,469.40	10	\$302.31	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Wastewater	Process	Kraft: Effluent Treatment System	employee	New	1,469.40	10	\$123.94	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Wastewater	Motors	Kraft: Efficient Agitator	employee	New	5,869.76	10	\$563.13	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Wastewater	Process	Mech Pulp: Premium Process	employee	New	16.45	5	\$2.12	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Wastewater	Motors	Mech Pulp: Refiner Plate Improvement	employee	New	50.59	1	\$2.15	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Wastewater	Cooling	Transformer - High Efficiency	employee	New	84.04	10	\$444.97	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Wastewater	Heating	Transformer - High Efficiency	employee	New	547.95	10	\$444.97	15%	15%	\$0.02	0.00	0.00	7th Power Plan

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Wastewater	Ventilation	Transformer - High Efficiency	employee	New	4.88	10	\$444.97	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Wastewater	Interior Lighting	Transformer - High Efficiency	employee	New	62.29	10	\$444.97	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Wastewater	Exterior Lighting	Transformer - High Efficiency	employee	New	12.87	10	\$444.97	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Wastewater	Motors	Transformer - High Efficiency	employee	New	2,763.22	10	\$444.97	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Wastewater	Process	Transformer - High Efficiency	employee	New	146.94	10	\$444.97	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Wastewater	Miscellaneous	Transformer - High Efficiency	employee	New	126.51	10	\$444.97	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Wastewater	Cooling	Strategic Energy Management	employee	New	239.44	3	\$2,732.89	0%	5%	\$0.08	0.00	0.00	AEG Research
Wastewater	Heating	Strategic Energy Management	employee	New	1,579.11	3	\$2,732.89	0%	5%	\$0.08	0.02	0.02	AEG Research
Wastewater	Ventilation	Strategic Energy Management	employee	New	14.04	3	\$2,732.89	0%	5%	\$0.08	0.00	0.00	AEG Research
Wastewater	Interior Lighting	Strategic Energy Management	employee	New	179.52	3	\$2,732.89	0%	5%	\$0.08	0.01	0.02	AEG Research
Wastewater	Exterior Lighting	Strategic Energy Management	employee	New	37.19	3	\$2,732.89	0%	5%	\$0.08	0.00	0.00	AEG Research
Wastewater	Motors	Strategic Energy Management	employee	New	7,982.64	3	\$2,732.89	0%	5%	\$0.08	0.49	0.49	AEG Research
Wastewater	Process	Strategic Energy Management	employee	New	424.49	3	\$2,732.89	0%	5%	\$0.08	0.03	0.03	AEG Research
Wastewater	Miscellaneous	Strategic Energy Management	employee	New	365.47	3	\$2,732.89	0%	5%	\$0.08	0.03	0.02	AEG Research
Wastewater	Interior Lighting	Commissioning	employee	New	207.10	3	\$4,895.46	5%	39%	\$0.16	0.10	0.14	AEG Research
Wastewater	Exterior Lighting	Commissioning	employee	New	42.90	3	\$4,895.46	5%	39%	\$0.16	0.02	0.03	AEG Research
Wastewater	Motors	Commissioning	employee	New	9,208.90	3	\$4,895.46	5%	39%	\$0.16	3.81	3.87	AEG Research
Wastewater	Process	Commissioning	employee	New	489.70	3	\$4,895.46	5%	39%	\$0.16	0.20	0.20	AEG Research
Wastewater	Miscellaneous	Commissioning	employee	New	421.61	3	\$4,895.46	5%	39%	\$0.16	0.21	0.15	AEG Research
Wastewater	Interior Lighting	Retrocommissioning	employee	New	207.65	3	\$3,107.73	0%	0%	\$0.10	0.00	0.00	AEG Research

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Wastewater	Exterior Lighting	Retrocommissioning	employee	New	42.91	3	\$3,107.73	0%	0%	\$0.10	0.00	0.00	AEG Research
Wastewater	Motors	Retrocommissioning	employee	New	9,210.74	3	\$3,107.73	0%	0%	\$0.10	0.00	0.00	AEG Research
Wastewater	Process	Retrocommissioning	employee	New	489.80	3	\$3,107.73	0%	0%	\$0.10	0.00	0.00	AEG Research
Wastewater	Miscellaneous	Retrocommissioning	employee	New	421.70	3	\$3,107.73	0%	0%	\$0.10	0.00	0.00	AEG Research
Wastewater	Motors	Municipal Sewage Treatment	employee	New	1,318.05	12	\$717.97	15%	35%	\$0.07	4.46	4.44	7th Power Plan
Wastewater	Motors	Municipal Water Supply Treatment	employee	New	0.00	12	\$0.00	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Water	Cooling	Insulation - Ceiling	sqft	Existing	0.12	45	\$1.28	15%	25%	\$0.15	0.85	0.91	Building Energy Simulation Tool
Water	Heating	Insulation - Ceiling	sqft	Existing	0.55	45	\$1.28	15%	25%	\$0.15	4.20	4.31	Building Energy Simulation Tool
Water	Ventilation	Insulation - Ceiling	sqft	Existing	0.02	45	\$1.28	15%	25%	\$0.15	0.61	0.69	Building Energy Simulation Tool
Water	Cooling	Insulation - Ducting	sqft	Existing	0.05	20	\$0.84	15%	25%	\$1.05	0.31	0.34	Building Energy Simulation Tool
Water	Heating	Insulation - Ducting	sqft	Existing	0.02	20	\$0.84	15%	25%	\$1.05	0.17	0.18	Building Energy Simulation Tool
Water	Ventilation	Insulation - Ducting	sqft	Existing	0.00	20	\$0.84	15%	25%	\$1.05	0.02	0.03	Building Energy Simulation Tool
Water	Cooling	Insulation - Wall Cavity	sqft	Existing	0.00	45	\$0.15	45%	50%	\$0.02	0.01	0.01	Building Energy Simulation Tool
Water	Heating	Insulation - Wall Cavity	sqft	Existing	0.76	45	\$0.15	45%	50%	\$0.02	2.98	2.99	Building Energy Simulation Tool
Water	Ventilation	Insulation - Wall Cavity	sqft	Existing	0.02	45	\$0.15	45%	50%	\$0.02	0.41	0.46	Building Energy Simulation Tool
Water	Cooling	HVAC - Duct Repair and Sealing	sqft	Existing	0.02	18	\$0.00	15%	25%	\$0.00	0.11	0.12	Building Energy Simulation Tool
Water	Heating	HVAC - Duct Repair and Sealing	sqft	Existing	0.05	18	\$0.00	15%	25%	\$0.00	0.42	0.42	Building Energy Simulation Tool
Water	Ventilation	HVAC - Duct Repair and Sealing	sqft	Existing	0.00	18	\$0.00	15%	25%	\$0.00	0.06	0.07	Building Energy Simulation Tool
Water	Cooling	Chiller - Chilled Water Reset	sqft	Existing	0.05	10	\$0.01	15%	45%	\$0.03	0.28	0.29	AEG-BEST
Water	Cooling	Chiller - Chilled Water Variable-Flow System	sqft	Existing	0.25	15	\$0.50	15%	60%	\$0.20	2.16	2.39	AEG-BEST

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Water	Cooling	Chiller - Variable Speed Fans	sqft	Existing	0.10	15	\$0.03	15%	75%	\$0.04	1.12	1.19	New Jersey TRM
Water	Cooling	HVAC - Economizer	sqft	Existing	0.71	10	\$0.25	18%	30%	\$0.05	1.13	1.20	AEG-BEST
Water	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.25	15%	35%	\$10.61	0.12	0.15	7th Power Plan
Water	Cooling	Destratification Fans (HVLS)	sqft	Existing	0.16	15	\$0.63	15%	50%	\$0.05	4.74	5.06	AEG Research
Water	Heating	Destratification Fans (HVLS)	sqft	Existing	1.39	15	\$0.63	15%	50%	\$0.05	46.10	46.39	AEG Research
Water	Cooling	RTU - Maintenance	sqft	Existing	0.08	3	\$0.07	15%	75%	\$0.28	1.98	2.23	AEG Research
Water	Cooling	Thermostat - WiFi/Interactive	sqft	Existing	0.29	5	\$0.66	5%	15%	\$0.09	1.96	2.11	7th Power Plan
Water	Heating	Thermostat - WiFi/Interactive	sqft	Existing	1.29	5	\$0.66	5%	15%	\$0.09	9.87	10.17	7th Power Plan
Water	Ventilation	Thermostat - WiFi/Interactive	sqft	Existing	0.04	5	\$0.66	5%	15%	\$0.09	1.42	1.63	7th Power Plan
Water	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	1.64	15	\$0.35	7%	33%	\$0.02	21.42	25.82	7th Power Plan
Water	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	2.26	15	\$0.58	7%	33%	\$0.02	28.78	35.49	7th Power Plan
Water	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	Existing	0.02	15	\$0.00	1%	2%	\$0.01	0.13	0.17	7th Power Plan
Water	Interior Lighting	Interior Lighting - Timeclocks and Timers	sqft	Existing	0.00	8	\$0.00	7%	7%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Water	Interior Lighting	Interior Lighting - Skylights	sqft	Existing	0.00	15	\$1.01	15%	23%	\$0.00	0.00	0.00	AEG Research
Water	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	sqft	Existing	0.03	16	\$1.81	5%	40%	\$4.11	4.00	5.66	7th Power Plan
Water	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	Existing	0.04	11	\$0.00	15%	50%	\$0.01	4.43	5.71	Illinois TRM
Water	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	sqft	Existing	0.05	8	\$0.03	15%	25%	\$0.08	5.41	7.36	7th Power Plan
Water	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	Existing	0.03	8	\$0.02	33%	60%	\$0.08	7.54	10.53	Pacific Gas and Electric Research
Water	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	Existing	0.03	7	\$1.19	15%	30%	\$4.54	4.72	6.96	AEG Research
Water	Process	Process - Conductivity Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A

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Water	Process	Process - Timers and Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Water	Motors	Process - Timers and Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Water	Process	Refrigeration - Floating Head Pressure	employee	Existing	0.00	15	\$292.63	20%	50%	\$0.00	0.00	0.00	RTF Workbook
Water	Process	Refrigeration - System Optimization	employee	Existing	0.00	15	\$206.06	20%	50%	\$0.00	0.00	0.00	AEG Research
Water	Motors	Pumping System - Equipment Upgrade	employee	Existing	25,141.59	10	\$3,580.97	9%	38%	\$0.05	1,070.33	1,072.26	7th Power Plan
Water	Motors	Pumping System - System Optimization	employee	Existing	18,072.16	12	\$5,457.39	9%	38%	\$0.04	739.71	765.26	UNIDO Study on Industrial Energy Efficiency
Water	Motors	Pumping System - Variable Speed Drive	employee	Existing	17,554.39	10	\$5,677.73	9%	38%	\$0.04	705.27	748.76	UNIDO Study on Industrial Energy Efficiency
Water	Motors	Fan System - Equipment Upgrade	employee	Existing	0.00	10	\$43.07	9%	38%	\$0.00	0.00	0.00	UNIDO Study on Industrial Energy Efficiency
Water	Motors	Fan System - Flow Optimization	employee	Existing	0.00	10	\$71.26	9%	38%	\$0.00	0.00	0.00	UNIDO Study on Industrial Energy Efficiency
Water	Motors	Fan System - Variable Speed Drive	employee	Existing	0.00	10	\$358.57	9%	38%	\$0.00	0.00	0.00	UNIDO Study on Industrial Energy Efficiency
Water	Motors	Compressed Air - Equipment Upgrade	employee	Existing	642.90	10	\$46.78	17%	50%	\$0.04	31.97	31.97	7th Power Plan
Water	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	Existing	0.00	15	\$0.00	16%	38%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Water	Motors	Compressed Air - Refrigerated Cycling Dryers	employee	Existing	0.00	10	\$0.00	16%	30%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Water	Motors	Compressed Air - System Controls	employee	Existing	137.00	10	\$33.45	9%	38%	\$0.03	5.61	5.98	UNIDO Study on Industrial Energy Efficiency
Water	Motors	Compressed Air - Leak Management Program	employee	Existing	366.97	10	\$33.62	18%	75%	\$0.04	31.26	31.29	7th Power Plan
Water	Motors	Compressed Air - Variable Speed Drive	employee	Existing	249.35	15	\$205.07	26%	45%	\$0.08	6.67	7.33	UNIDO Study on Industrial Energy Efficiency
Water	Motors	Compressed Air - Low Pressure-Drop Filters	employee	Existing	8.31	10	\$3.16	17%	50%	\$0.05	0.39	0.43	Illinois TRM
Water	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	Existing	52.70	10	\$10.25	17%	50%	\$0.03	2.56	2.66	UNIDO Study on Industrial Energy Efficiency
Water	Motors	Compressed Air - Outside Air Intake	employee	Existing	0.00	20	\$0.00	17%	50%	\$0.00	0.00	0.00	Michigan Energy Measures Database

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Water	Motors	Compressed Air - Receiver Capacity Addition	employee	Existing	51.19	15	\$28.20	17%	50%	\$0.06	2.44	2.61	UNIDO Study on Industrial Energy Efficiency
Water	Motors	Material Handling - Variable Speed Drive	employee	Existing	927.20	10	\$349.14	25%	45%	\$0.05	25.70	27.93	7th Power Plan
Water	Motors	Motors - Green Rewind (<100 HP)	employee	Existing	271.45	10	\$122.81	10%	50%	\$0.06	60.15	65.43	7th Power Plan
Water	Motors	Motors - Green Rewind (100 HP+)	employee	Existing	154.94	10	\$43.59	6%	25%	\$0.04	16.61	17.62	7th Power Plan
Water	Motors	Switch from Belt Drive to Direct Drive	employee	Existing	2,401.96	12	\$539.06	16%	25%	\$0.03	131.47	135.46	2015-mdu-irp-report---volume-iii.pdf
Water	Motors	Motors - Synchronous Belts	employee	Existing	621.45	10	\$162.17	16%	36%	\$0.03	71.23	75.95	7th Power Plan
Water	Miscellaneous	Agriculture - Engine Block Timer	employee	Existing	2,449.26	3	\$30.21	0%	0%	\$0.00	0.00	0.00	Vermont TRM
Water	Motors	Agriculture - Live Stock Waterer	employee	Existing	56,866.06	10	\$31,536.75	0%	0%	\$0.07	0.00	0.00	Ontario Power TRM
Water	Process	Dairy - Milk Precoolers	employee	Existing	0.00	15	\$931.17	0%	0%	\$0.00	0.00	0.00	Ontario Power TRM
Water	Process	Clean Room: Change Filter Strategy	employee	Existing	0.00	15	\$11.85	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Water	Process	Clean Room: Chiller Optimize	employee	Existing	0.00	15	\$55.14	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Water	Process	Clean Room: Clean Room HVAC	employee	Existing	0.00	15	\$66.56	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Water	Process	Elec Chip Fab: Solidstate Chiller	employee	Existing	0.00	15	\$209.06	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Water	Process	Elec Chip Fab: Eliminate Exhaust	employee	Existing	0.00	15	\$42.64	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Water	Process	Elec Chip Fab: Exhaust Injector	employee	Existing	0.00	15	\$205.70	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Water	Process	Elec Chip Fab: Reduce Gas Pressure	employee	Existing	0.00	15	\$4.12	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Water	Motors	Panel: Hydraulic Press	employee	Existing	1,426.45	10	\$348.93	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Water	Motors	Wood: Replace Pneumatic Conveyor	employee	Existing	1,585.08	10	\$26.13	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Water	Process	Metal: New Arc Furnace	employee	Existing	0.00	10	\$189.78	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Water	Process	Paper: Premium Control Large Material	employee	Existing	1,273.31	10	\$636.99	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Water	Process	Paper: Efficient Pulp Screen	employee	Existing	1,019.88	10	\$209.82	0%	0%	\$0.03	0.00	0.00	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Water	Process	Kraft: Effluent Treatment System	employee	Existing	1,019.88	10	\$86.02	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Water	Motors	Kraft: Efficient Agitator	employee	Existing	2,726.90	10	\$260.38	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Water	Process	Mech Pulp: Premium Process	employee	Existing	11.42	5	\$1.47	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Water	Motors	Mech Pulp: Refiner Plate Improvement	employee	Existing	22.02	1	\$0.99	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Water	Cooling	Transformer - High Efficiency	employee	Existing	64.96	10	\$311.90	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Water	Heating	Transformer - High Efficiency	employee	Existing	397.99	10	\$311.90	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Water	Ventilation	Transformer - High Efficiency	employee	Existing	5.99	10	\$311.90	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Water	Interior Lighting	Transformer - High Efficiency	employee	Existing	56.91	10	\$311.90	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Water	Exterior Lighting	Transformer - High Efficiency	employee	Existing	12.31	10	\$311.90	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Water	Motors	Transformer - High Efficiency	employee	Existing	1,805.70	10	\$311.90	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Water	Process	Transformer - High Efficiency	employee	Existing	101.99	10	\$311.90	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Water	Miscellaneous	Transformer - High Efficiency	employee	Existing	92.70	10	\$311.90	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Water	Cooling	Strategic Energy Management	employee	Existing	183.55	3	\$1,915.57	0%	5%	\$0.08	0.22	0.24	AEG Research
Water	Heating	Strategic Energy Management	employee	Existing	1,142.25	3	\$1,915.57	0%	5%	\$0.08	1.57	1.63	AEG Research
Water	Ventilation	Strategic Energy Management	employee	Existing	17.12	3	\$1,915.57	0%	5%	\$0.08	0.12	0.14	AEG Research
Water	Interior Lighting	Strategic Energy Management	employee	Existing	162.47	3	\$1,915.57	0%	5%	\$0.08	1.00	1.31	AEG Research
Water	Exterior Lighting	Strategic Energy Management	employee	Existing	35.32	3	\$1,915.57	0%	5%	\$0.08	0.22	0.29	AEG Research
Water	Motors	Strategic Energy Management	employee	Existing	5,175.36	3	\$1,915.57	0%	5%	\$0.08	33.96	36.59	AEG Research
Water	Process	Strategic Energy Management	employee	Existing	292.21	3	\$1,915.57	0%	5%	\$0.08	2.04	2.06	AEG Research

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Water	Miscellaneous	Strategic Energy Management	employee	Existing	265.35	3	\$1,915.57	0%	5%	\$0.08	2.35	1.93	AEG Research
Water	Interior Lighting	Commissioning	employee	Existing	187.30	3	\$3,386.50	0%	0%	\$0.16	0.00	0.00	AEG Research
Water	Exterior Lighting	Commissioning	employee	Existing	40.71	3	\$3,386.50	0%	0%	\$0.16	0.00	0.00	AEG Research
Water	Motors	Commissioning	employee	Existing	5,965.61	3	\$3,386.50	0%	0%	\$0.16	0.00	0.00	AEG Research
Water	Process	Commissioning	employee	Existing	336.81	3	\$3,386.50	0%	0%	\$0.16	0.00	0.00	AEG Research
Water	Miscellaneous	Commissioning	employee	Existing	305.82	3	\$3,386.50	0%	0%	\$0.16	0.00	0.00	AEG Research
Water	Interior Lighting	Retrocommissioning	employee	Existing	189.69	3	\$2,149.82	5%	39%	\$0.10	8.01	10.37	AEG Research
Water	Exterior Lighting	Retrocommissioning	employee	Existing	41.02	3	\$2,149.82	5%	39%	\$0.10	1.76	2.32	AEG Research
Water	Motors	Retrocommissioning	employee	Existing	6,018.99	3	\$2,149.82	5%	39%	\$0.10	270.93	289.33	AEG Research
Water	Process	Retrocommissioning	employee	Existing	339.96	3	\$2,149.82	5%	39%	\$0.10	16.27	16.27	AEG Research
Water	Miscellaneous	Retrocommissioning	employee	Existing	309.00	3	\$2,149.82	5%	39%	\$0.10	18.72	15.29	AEG Research
Water	Motors	Municipal Sewage Treatment	employee	Existing	3,079.77	12	\$1,800.22	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Water	Motors	Municipal Water Supply Treatment	employee	Existing	0.00	12	\$0.00	15%	35%	\$0.00	0.00	0.00	7th Power Plan
Water	Cooling	Insulation - Ceiling	sqft	New	0.11	45	\$1.28	15%	25%	\$0.16	0.35	0.36	Building Energy Simulation Tool
Water	Heating	Insulation - Ceiling	sqft	New	0.52	45	\$1.28	15%	25%	\$0.16	1.77	1.77	Building Energy Simulation Tool
Water	Ventilation	Insulation - Ceiling	sqft	New	0.01	45	\$1.28	15%	25%	\$0.16	0.21	0.23	Building Energy Simulation Tool
Water	Cooling	Insulation - Ducting	sqft	New	0.04	20	\$0.84	15%	25%	\$1.13	0.14	0.14	Building Energy Simulation Tool
Water	Heating	Insulation - Ducting	sqft	New	0.02	20	\$0.84	15%	25%	\$1.13	0.07	0.07	Building Energy Simulation Tool
Water	Ventilation	Insulation - Ducting	sqft	New	0.00	20	\$0.84	15%	25%	\$1.13	0.01	0.01	Building Energy Simulation Tool
Water	Cooling	Insulation - Wall Cavity	sqft	New	0.00	45	\$0.15	45%	50%	\$0.02	0.00	0.00	Building Energy Simulation Tool
Water	Heating	Insulation - Wall Cavity	sqft	New	0.71	45	\$0.15	45%	50%	\$0.02	1.20	1.20	Building Energy Simulation Tool
Water	Ventilation	Insulation - Wall Cavity	sqft	New	0.01	45	\$0.15	45%	50%	\$0.02	0.14	0.15	Building Energy Simulation Tool

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Water	Cooling	HVAC - Duct Repair and Sealing	sqft	New	0.01	18	\$0.00	15%	25%	\$0.00	0.04	0.05	Building Energy Simulation Tool
Water	Heating	HVAC - Duct Repair and Sealing	sqft	New	0.05	18	\$0.00	15%	25%	\$0.00	0.17	0.17	Building Energy Simulation Tool
Water	Ventilation	HVAC - Duct Repair and Sealing	sqft	New	0.00	18	\$0.00	15%	25%	\$0.00	0.02	0.02	Building Energy Simulation Tool
Water	Cooling	Chiller - Chilled Water Reset	sqft	New	0.04	10	\$0.01	15%	45%	\$0.03	0.03	0.03	AEG-BEST
Water	Cooling	Chiller - Chilled Water Variable-Flow System	sqft	New	0.20	15	\$0.50	15%	60%	\$0.24	0.43	0.45	AEG-BEST
Water	Cooling	Chiller - Variable Speed Fans	sqft	New	0.07	15	\$0.03	15%	75%	\$0.04	0.21	0.22	New Jersey TRM
Water	Cooling	HVAC - Economizer	sqft	New	0.62	10	\$0.25	18%	30%	\$0.05	0.14	0.15	AEG-BEST
Water	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.25	15%	35%	\$12.70	0.02	0.03	7th Power Plan
Water	Cooling	Destratification Fans (HVLS)	sqft	New	0.14	15	\$0.63	15%	50%	\$0.05	1.06	1.09	AEG Research
Water	Heating	Destratification Fans (HVLS)	sqft	New	1.30	15	\$0.63	15%	50%	\$0.05	10.31	10.34	AEG Research
Water	Cooling	RTU - Maintenance	sqft	New	0.07	3	\$0.07	15%	75%	\$0.29	0.04	0.04	AEG Research
Water	Cooling	Thermostat - WiFi/Interactive	sqft	New	0.26	5	\$0.66	5%	15%	\$0.09	0.14	0.14	7th Power Plan
Water	Heating	Thermostat - WiFi/Interactive	sqft	New	1.23	5	\$0.66	5%	15%	\$0.09	0.69	0.70	7th Power Plan
Water	Ventilation	Thermostat - WiFi/Interactive	sqft	New	0.02	5	\$0.66	5%	15%	\$0.09	0.08	0.10	7th Power Plan
Water	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	1.26	15	\$0.35	22%	41%	\$0.02	10.98	12.82	7th Power Plan
Water	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	1.73	15	\$0.58	22%	41%	\$0.02	14.95	17.60	7th Power Plan
Water	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	New	0.02	15	\$0.00	1%	2%	\$0.01	0.02	0.03	7th Power Plan
Water	Interior Lighting	Interior Lighting - Timeclocks and Timers	sqft	New	0.00	8	\$0.00	7%	7%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Water	Interior Lighting	Interior Lighting - Skylights	sqft	New	0.00	15	\$1.01	18%	24%	\$0.00	0.00	0.00	AEG Research
Water	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	sqft	New	0.03	16	\$1.81	5%	40%	\$4.11	0.95	1.21	7th Power Plan

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Water	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	New	0.03	11	\$0.00	15%	50%	\$0.01	0.66	0.85	Illinois TRM
Water	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	sqft	New	0.04	8	\$0.03	15%	25%	\$0.08	0.53	0.73	7th Power Plan
Water	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	New	0.02	8	\$0.02	44%	60%	\$0.08	0.45	0.62	Pacific Gas and Electric Research
Water	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	New	0.02	7	\$1.19	15%	30%	\$4.56	0.44	0.61	AEG Research
Water	Process	Process - Conductivity Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Water	Process	Process - Timers and Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Water	Motors	Process - Timers and Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Water	Process	Refrigeration - Floating Head Pressure	employee	New	0.00	15	\$206.81	20%	50%	\$0.00	0.00	0.00	RTF Workbook
Water	Process	Refrigeration - System Optimization	employee	New	0.00	15	\$72.32	20%	50%	\$0.00	0.00	0.00	AEG Research
Water	Motors	Pumping System - Equipment Upgrade	employee	New	25,174.77	10	\$3,580.97	9%	38%	\$0.05	152.57	152.54	7th Power Plan
Water	Motors	Pumping System - System Optimization	employee	New	18,558.14	12	\$5,457.39	9%	38%	\$0.04	178.92	177.99	UNIDO Study on Industrial Energy Efficiency
Water	Motors	Pumping System - Variable Speed Drive	employee	New	18,295.51	10	\$5,677.73	9%	38%	\$0.04	152.96	152.10	UNIDO Study on Industrial Energy Efficiency
Water	Motors	Fan System - Equipment Upgrade	employee	New	0.00	10	\$43.07	9%	38%	\$0.00	0.00	0.00	UNIDO Study on Industrial Energy Efficiency
Water	Motors	Fan System - Flow Optimization	employee	New	0.00	10	\$71.26	9%	38%	\$0.00	0.00	0.00	UNIDO Study on Industrial Energy Efficiency
Water	Motors	Fan System - Variable Speed Drive	employee	New	0.00	10	\$358.57	9%	38%	\$0.00	0.00	0.00	UNIDO Study on Industrial Energy Efficiency
Water	Motors	Compressed Air - Equipment Upgrade	employee	New	642.90	10	\$46.78	17%	50%	\$0.04	4.54	4.54	7th Power Plan
Water	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	New	0.00	15	\$0.00	16%	38%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Water	Motors	Compressed Air - Refrigerated Cycling Dryers	employee	New	0.00	10	\$0.00	16%	30%	\$0.00	0.00	0.00	Michigan Energy Measures Database

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Water	Motors	Compressed Air - System Controls	employee	New	142.48	10	\$33.45	9%	38%	\$0.03	0.87	0.87	UNIDO Study on Industrial Energy Efficiency
Water	Motors	Compressed Air - Leak Management Program	employee	New	367.21	10	\$33.62	18%	75%	\$0.04	4.45	4.45	7th Power Plan
Water	Motors	Compressed Air - Variable Speed Drive	employee	New	263.44	15	\$205.07	26%	45%	\$0.08	1.71	1.70	UNIDO Study on Industrial Energy Efficiency
Water	Motors	Compressed Air - Low Pressure-Drop Filters	employee	New	8.78	10	\$3.16	17%	50%	\$0.05	0.06	0.06	Illinois TRM
Water	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	New	54.12	10	\$10.25	17%	50%	\$0.03	0.38	0.38	UNIDO Study on Industrial Energy Efficiency
Water	Motors	Compressed Air - Outside Air Intake	employee	New	0.00	20	\$0.00	17%	50%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Water	Motors	Compressed Air - Receiver Capacity Addition	employee	New	53.35	15	\$28.20	17%	50%	\$0.06	0.61	0.60	UNIDO Study on Industrial Energy Efficiency
Water	Motors	Material Handling - Variable Speed Drive	employee	New	979.11	10	\$349.14	25%	45%	\$0.05	5.76	5.72	7th Power Plan
Water	Motors	Motors - Green Rewind (<100 HP)	employee	New	286.83	10	\$122.81	10%	50%	\$0.06	13.49	13.39	7th Power Plan
Water	Motors	Motors - Green Rewind (100 HP+)	employee	New	161.43	10	\$43.59	6%	25%	\$0.04	3.60	3.58	7th Power Plan
Water	Motors	Switch from Belt Drive to Direct Drive	employee	New	2,460.95	12	\$539.06	16%	25%	\$0.03	31.63	31.47	2015-mdu-irp-report---volume-iii.pdf
Water	Motors	Motors - Synchronous Belts	employee	New	646.42	10	\$162.17	16%	36%	\$0.03	11.04	11.03	7th Power Plan
Water	Miscellaneous	Agriculture - Engine Block Timer	employee	New	2,449.26	3	\$30.21	0%	0%	\$0.00	0.00	0.00	Vermont TRM
Water	Motors	Agriculture - Live Stock Waterer	employee	New	60,155.57	10	\$31,536.75	0%	0%	\$0.07	0.00	0.00	Ontario Power TRM
Water	Process	Dairy - Milk Precoolers	employee	New	0.00	15	\$931.17	0%	0%	\$0.00	0.00	0.00	Ontario Power TRM
Water	Process	Clean Room: Change Filter Strategy	employee	New	0.00	15	\$11.85	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Water	Process	Clean Room: Chiller Optimize	employee	New	0.00	15	\$55.14	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Water	Process	Clean Room: Clean Room HVAC	employee	New	0.00	15	\$66.56	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Water	Process	Elec Chip Fab: Solidstate Chiller	employee	New	0.00	15	\$209.06	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Water	Process	Elec Chip Fab: Eliminate Exhaust	employee	New	0.00	15	\$42.64	0%	0%	\$0.00	0.00	0.00	7th Power Plan

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Water	Process	Elec Chip Fab: Exhaust Injector	employee	New	0.00	15	\$205.70	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Water	Process	Elec Chip Fab: Reduce Gas Pressure	employee	New	0.00	15	\$4.12	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Water	Motors	Panel: Hydraulic Press	employee	New	1,483.77	10	\$348.93	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Water	Motors	Wood: Replace Pneumatic Conveyor	employee	New	1,585.08	10	\$26.13	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Water	Process	Metal: New Arc Furnace	employee	New	0.00	10	\$189.78	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Water	Process	Paper: Premium Control Large Material	employee	New	1,273.31	10	\$636.99	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Water	Process	Paper: Efficient Pulp Screen	employee	New	1,019.88	10	\$209.82	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Water	Process	Kraft: Effluent Treatment System	employee	New	1,019.88	10	\$86.02	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Water	Motors	Kraft: Efficient Agitator	employee	New	2,730.50	10	\$260.38	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Water	Process	Mech Pulp: Premium Process	employee	New	11.42	5	\$1.47	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Water	Motors	Mech Pulp: Refiner Plate Improvement	employee	New	23.30	1	\$0.99	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Water	Cooling	Transformer - High Efficiency	employee	New	58.19	10	\$308.85	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Water	Heating	Transformer - High Efficiency	employee	New	380.32	10	\$308.85	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Water	Ventilation	Transformer - High Efficiency	employee	New	3.39	10	\$308.85	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Water	Interior Lighting	Transformer - High Efficiency	employee	New	43.24	10	\$308.85	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Water	Exterior Lighting	Transformer - High Efficiency	employee	New	8.93	10	\$308.85	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Water	Motors	Transformer - High Efficiency	employee	New	1,910.15	10	\$308.85	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Water	Process	Transformer - High Efficiency	employee	New	101.99	10	\$308.85	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Water	Miscellaneous	Transformer - High Efficiency	employee	New	87.81	10	\$308.85	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Water	Cooling	Strategic Energy Management	employee	New	166.19	3	\$1,896.83	0%	5%	\$0.08	0.00	0.00	AEG Research
Water	Heating	Strategic Energy Management	employee	New	1,096.02	3	\$1,896.83	0%	5%	\$0.08	0.03	0.03	AEG Research

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Water	Ventilation	Strategic Energy Management	employee	New	9.74	3	\$1,896.83	0%	5%	\$0.08	0.00	0.00	AEG Research
Water	Interior Lighting	Strategic Energy Management	employee	New	124.60	3	\$1,896.83	0%	5%	\$0.08	0.02	0.02	AEG Research
Water	Exterior Lighting	Strategic Energy Management	employee	New	25.81	3	\$1,896.83	0%	5%	\$0.08	0.00	0.01	AEG Research
Water	Motors	Strategic Energy Management	employee	New	5,518.21	3	\$1,896.83	0%	5%	\$0.08	0.67	0.68	AEG Research
Water	Process	Strategic Energy Management	employee	New	294.63	3	\$1,896.83	0%	5%	\$0.08	0.04	0.04	AEG Research
Water	Miscellaneous	Strategic Energy Management	employee	New	253.66	3	\$1,896.83	0%	5%	\$0.08	0.04	0.03	AEG Research
Water	Interior Lighting	Commissioning	employee	New	143.74	3	\$3,397.82	5%	39%	\$0.16	0.13	0.19	AEG Research
Water	Exterior Lighting	Commissioning	employee	New	29.78	3	\$3,397.82	5%	39%	\$0.16	0.03	0.04	AEG Research
Water	Motors	Commissioning	employee	New	6,365.90	3	\$3,397.82	5%	39%	\$0.16	5.28	5.36	AEG Research
Water	Process	Commissioning	employee	New	339.89	3	\$3,397.82	5%	39%	\$0.16	0.28	0.28	AEG Research
Water	Miscellaneous	Commissioning	employee	New	292.63	3	\$3,397.82	5%	39%	\$0.16	0.30	0.21	AEG Research
Water	Interior Lighting	Retrocommissioning	employee	New	144.12	3	\$2,157.00	0%	0%	\$0.10	0.00	0.00	AEG Research
Water	Exterior Lighting	Retrocommissioning	employee	New	29.78	3	\$2,157.00	0%	0%	\$0.10	0.00	0.00	AEG Research
Water	Motors	Retrocommissioning	employee	New	6,367.17	3	\$2,157.00	0%	0%	\$0.10	0.00	0.00	AEG Research
Water	Process	Retrocommissioning	employee	New	339.96	3	\$2,157.00	0%	0%	\$0.10	0.00	0.00	AEG Research
Water	Miscellaneous	Retrocommissioning	employee	New	292.69	3	\$2,157.00	0%	0%	\$0.10	0.00	0.00	AEG Research
Water	Motors	Municipal Sewage Treatment	employee	New	3,254.25	12	\$1,800.22	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Water	Motors	Municipal Water Supply Treatment	employee	New	0.00	12	\$0.00	15%	35%	\$0.00	0.00	0.00	7th Power Plan
Chemical Mfg	Cooling	Insulation - Ceiling	sqft	Existing	0.12	45	\$1.28	15%	25%	\$0.15	19.91	21.21	Building Energy Simulation Tool
Chemical Mfg	Heating	Insulation - Ceiling	sqft	Existing	0.55	45	\$1.28	15%	25%	\$0.15	98.26	100.95	Building Energy Simulation Tool
Chemical Mfg	Ventilation	Insulation - Ceiling	sqft	Existing	0.02	45	\$1.28	15%	25%	\$0.15	14.18	16.19	Building Energy Simulation Tool
Chemical Mfg	Cooling	Insulation - Ducting	sqft	Existing	0.05	20	\$0.84	15%	25%	\$1.05	7.28	7.98	Building Energy Simulation Tool

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Chemical Mfg	Heating	Insulation - Ducting	sqft	Existing	0.02	20	\$0.84	15%	25%	\$1.05	4.08	4.23	Building Energy Simulation Tool
Chemical Mfg	Ventilation	Insulation - Ducting	sqft	Existing	0.00	20	\$0.84	15%	25%	\$1.05	0.58	0.67	Building Energy Simulation Tool
Chemical Mfg	Cooling	Insulation - Wall Cavity	sqft	Existing	0.00	45	\$0.15	45%	50%	\$0.02	0.16	0.17	Building Energy Simulation Tool
Chemical Mfg	Heating	Insulation - Wall Cavity	sqft	Existing	0.76	45	\$0.15	45%	50%	\$0.02	69.77	69.95	Building Energy Simulation Tool
Chemical Mfg	Ventilation	Insulation - Wall Cavity	sqft	Existing	0.02	45	\$0.15	45%	50%	\$0.02	9.52	10.83	Building Energy Simulation Tool
Chemical Mfg	Cooling	HVAC - Duct Repair and Sealing	sqft	Existing	0.02	18	\$0.00	15%	25%	\$0.00	2.67	2.77	Building Energy Simulation Tool
Chemical Mfg	Heating	HVAC - Duct Repair and Sealing	sqft	Existing	0.05	18	\$0.00	15%	25%	\$0.00	9.84	9.86	Building Energy Simulation Tool
Chemical Mfg	Ventilation	HVAC - Duct Repair and Sealing	sqft	Existing	0.00	18	\$0.00	15%	25%	\$0.00	1.34	1.53	Building Energy Simulation Tool
Chemical Mfg	Cooling	Chiller - Chilled Water Reset	sqft	Existing	0.05	10	\$0.01	15%	45%	\$0.03	6.38	6.85	AEG-BEST
Chemical Mfg	Cooling	Chiller - Chilled Water Variable-Flow System	sqft	Existing	0.25	15	\$0.50	15%	60%	\$0.20	50.53	55.84	AEG-BEST
Chemical Mfg	Cooling	Chiller - Variable Speed Fans	sqft	Existing	0.09	15	\$0.03	15%	75%	\$0.04	26.07	27.82	New Jersey TRM
Chemical Mfg	Cooling	HVAC - Economizer	sqft	Existing	11.80	10	\$0.25	18%	30%	\$0.00	26.69	28.16	AEG-BEST
Chemical Mfg	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.25	15%	35%	\$10.61	2.87	3.51	7th Power Plan
Chemical Mfg	Cooling	Destratification Fans (HVLS)	sqft	Existing	0.16	15	\$0.63	15%	50%	\$0.05	110.86	118.38	AEG Research
Chemical Mfg	Heating	Destratification Fans (HVLS)	sqft	Existing	1.39	15	\$0.63	15%	50%	\$0.05	1,078.95	1,085.70	AEG Research
Chemical Mfg	Cooling	RTU - Maintenance	sqft	Existing	0.08	3	\$0.07	15%	75%	\$0.28	46.39	52.27	AEG Research
Chemical Mfg	Cooling	Thermostat - WiFi/Interactive	sqft	Existing	0.29	5	\$0.66	5%	15%	\$0.09	45.82	49.37	7th Power Plan
Chemical Mfg	Heating	Thermostat - WiFi/Interactive	sqft	Existing	1.29	5	\$0.66	5%	15%	\$0.09	231.09	238.10	7th Power Plan
Chemical Mfg	Ventilation	Thermostat - WiFi/Interactive	sqft	Existing	0.04	5	\$0.66	5%	15%	\$0.09	33.20	38.12	7th Power Plan
Chemical Mfg	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	26.43	15	\$0.35	7%	33%	\$0.00	325.72	404.14	7th Power Plan
Chemical Mfg	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	37.86	15	\$0.58	7%	33%	\$0.00	483.24	580.65	7th Power Plan

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Chemical Mfg	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	Existing	0.02	15	\$0.00	1%	2%	\$0.01	1.91	2.71	7th Power Plan
Chemical Mfg	Interior Lighting	Interior Lighting - Timeclocks and Timers	sqft	Existing	0.00	8	\$0.00	7%	7%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Chemical Mfg	Interior Lighting	Interior Lighting - Skylights	sqft	Existing	0.00	15	\$1.01	15%	23%	\$0.00	0.00	0.00	AEG Research
Chemical Mfg	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	sqft	Existing	0.03	16	\$1.81	5%	40%	\$4.11	63.94	90.35	7th Power Plan
Chemical Mfg	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	Existing	0.03	11	\$0.00	15%	50%	\$0.01	64.03	88.96	Illinois TRM
Chemical Mfg	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	sqft	Existing	0.05	8	\$0.03	15%	25%	\$0.08	86.49	117.62	7th Power Plan
Chemical Mfg	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	Existing	0.03	8	\$0.02	33%	60%	\$0.08	120.38	168.20	Pacific Gas and Electric Research
Chemical Mfg	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	Existing	0.03	7	\$1.19	15%	30%	\$4.54	75.38	111.20	AEG Research
Chemical Mfg	Process	Process - Conductivity Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Chemical Mfg	Process	Process - Timers and Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Chemical Mfg	Motors	Process - Timers and Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Chemical Mfg	Process	Refrigeration - Floating Head Pressure	employee	Existing	3,030.42	15	\$2,950.88	20%	50%	\$0.11	336.59	337.33	RTF Workbook
Chemical Mfg	Process	Refrigeration - System Optimization	employee	Existing	4,861.69	15	\$2,077.96	20%	50%	\$0.05	540.72	540.72	AEG Research
Chemical Mfg	Motors	Pumping System - Equipment Upgrade	employee	Existing	32,529.26	10	\$4,872.98	9%	38%	\$0.05	3,370.81	3,525.70	7th Power Plan
Chemical Mfg	Motors	Pumping System - System Optimization	employee	Existing	23,979.85	12	\$7,426.41	9%	38%	\$0.04	2,419.96	2,553.09	UNIDO Study on Industrial Energy Efficiency
Chemical Mfg	Motors	Pumping System - Variable Speed Drive	employee	Existing	23,572.01	10	\$7,726.24	9%	38%	\$0.04	2,354.69	2,519.74	UNIDO Study on Industrial Energy Efficiency
Chemical Mfg	Motors	Fan System - Equipment Upgrade	employee	Existing	8,219.70	10	\$839.79	9%	38%	\$0.05	840.47	870.49	UNIDO Study on Industrial Energy Efficiency
Chemical Mfg	Motors	Fan System - Flow Optimization	employee	Existing	9,690.15	10	\$1,389.48	9%	38%	\$0.02	989.25	1,026.86	UNIDO Study on Industrial Energy Efficiency
Chemical Mfg	Motors	Fan System - Variable Speed Drive	employee	Existing	14,055.09	10	\$6,991.77	9%	38%	\$0.06	1,384.81	1,510.21	UNIDO Study on Industrial Energy Efficiency

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Chemical Mfg	Motors	Compressed Air - Equipment Upgrade	employee	Existing	63,580.05	10	\$4,626.42	17%	50%	\$0.04	7,903.35	7,903.35	7th Power Plan
Chemical Mfg	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	Existing	0.00	15	\$0.00	16%	38%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Chemical Mfg	Motors	Compressed Air - Refrigerated Cycling Dryers	employee	Existing	0.00	10	\$0.00	16%	30%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Chemical Mfg	Motors	Compressed Air - System Controls	employee	Existing	13,452.28	10	\$3,307.89	9%	38%	\$0.03	1,373.91	1,470.20	UNIDO Study on Industrial Energy Efficiency
Chemical Mfg	Motors	Compressed Air - Leak Management Program	employee	Existing	35,471.71	10	\$3,325.24	18%	75%	\$0.04	7,467.00	7,617.21	7th Power Plan
Chemical Mfg	Motors	Compressed Air - Variable Speed Drive	employee	Existing	24,635.81	15	\$20,280.47	26%	45%	\$0.08	1,653.21	1,809.49	UNIDO Study on Industrial Energy Efficiency
Chemical Mfg	Motors	Compressed Air - Low Pressure-Drop Filters	employee	Existing	821.46	10	\$312.58	17%	50%	\$0.05	96.49	105.58	Illinois TRM
Chemical Mfg	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	Existing	5,091.95	10	\$1,014.02	17%	50%	\$0.03	610.32	647.13	UNIDO Study on Industrial Energy Efficiency
Chemical Mfg	Motors	Compressed Air - Outside Air Intake	employee	Existing	0.00	20	\$0.00	17%	50%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Chemical Mfg	Motors	Compressed Air - Receiver Capacity Addition	employee	Existing	5,008.22	15	\$2,788.56	17%	50%	\$0.06	594.43	640.04	UNIDO Study on Industrial Energy Efficiency
Chemical Mfg	Motors	Material Handling - Variable Speed Drive	employee	Existing	28,054.37	10	\$10,515.80	25%	45%	\$0.05	1,957.05	2,108.30	7th Power Plan
Chemical Mfg	Motors	Motors - Green Rewind (<100 HP)	employee	Existing	999.50	10	\$455.05	10%	50%	\$0.06	692.11	753.25	7th Power Plan
Chemical Mfg	Motors	Motors - Green Rewind (100 HP+)	employee	Existing	566.48	10	\$161.51	6%	25%	\$0.04	188.70	201.82	7th Power Plan
Chemical Mfg	Motors	Switch from Belt Drive to Direct Drive	employee	Existing	8,694.78	12	\$1,997.47	16%	25%	\$0.03	1,468.18	1,540.48	2015-mdu-irp-report---volume-iii.pdf
Chemical Mfg	Motors	Motors - Synchronous Belts	employee	Existing	2,276.56	10	\$600.92	16%	36%	\$0.03	811.80	872.08	7th Power Plan
Chemical Mfg	Miscellaneous	Agriculture - Engine Block Timer	employee	Existing	19,440.60	3	\$239.82	0%	0%	\$0.00	0.00	0.00	Vermont TRM
Chemical Mfg	Motors	Agriculture - Live Stock Waterer	employee	Existing	76,557.67	10	\$42,915.16	0%	0%	\$0.07	0.00	0.00	Ontario Power TRM
Chemical Mfg	Process	Dairy - Milk Precoolers	employee	Existing	20,202.82	15	\$9,389.94	0%	0%	\$0.05	0.00	0.00	Ontario Power TRM
Chemical Mfg	Process	Clean Room: Change Filter Strategy	employee	Existing	82,931.56	15	\$611.65	0%	0%	\$0.00	0.00	0.00	7th Power Plan

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Chemical Mfg	Process	Clean Room: Chiller Optimize	employee	Existing	6,005.34	15	\$556.02	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Chemical Mfg	Process	Clean Room: Clean Room HVAC	employee	Existing	3,646.27	15	\$671.18	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Chemical Mfg	Process	Elec Chip Fab: Solidstate Chiller	employee	Existing	3,636.51	15	\$2,108.17	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Chemical Mfg	Process	Elec Chip Fab: Eliminate Exhaust	employee	Existing	10,366.44	15	\$2,200.59	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Chemical Mfg	Process	Elec Chip Fab: Exhaust Injector	employee	Existing	20,677.37	15	\$10,615.09	0%	0%	\$0.06	0.00	0.00	7th Power Plan
Chemical Mfg	Process	Elec Chip Fab: Reduce Gas Pressure	employee	Existing	20,732.89	15	\$212.86	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Chemical Mfg	Motors	Panel: Hydraulic Press	employee	Existing	42,668.93	10	\$10,509.49	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Chemical Mfg	Motors	Wood: Replace Pneumatic Conveyor	employee	Existing	47,741.81	10	\$787.07	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Chemical Mfg	Process	Metal: New Arc Furnace	employee	Existing	32,488.23	10	\$3,410.37	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Chemical Mfg	Process	Paper: Premium Control Large Material	employee	Existing	13,926.83	10	\$6,997.46	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Chemical Mfg	Process	Paper: Efficient Pulp Screen	employee	Existing	11,203.63	10	\$2,304.98	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Chemical Mfg	Process	Kraft: Effluent Treatment System	employee	Existing	11,203.63	10	\$944.99	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Chemical Mfg	Motors	Kraft: Efficient Agitator	employee	Existing	78,320.62	10	\$7,842.48	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Chemical Mfg	Process	Mech Pulp: Premium Process	employee	Existing	125.08	5	\$16.17	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Chemical Mfg	Motors	Mech Pulp: Refiner Plate Improvement	employee	Existing	656.23	1	\$29.92	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Chemical Mfg	Cooling	Transformer - High Efficiency	employee	Existing	608.15	10	\$2,333.56	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Chemical Mfg	Heating	Transformer - High Efficiency	employee	Existing	3,725.79	10	\$2,333.56	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Chemical Mfg	Ventilation	Transformer - High Efficiency	employee	Existing	56.07	10	\$2,333.56	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Chemical Mfg	Interior Lighting	Transformer - High Efficiency	employee	Existing	363.65	10	\$2,333.56	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Chemical Mfg	Exterior Lighting	Transformer - High Efficiency	employee	Existing	78.64	10	\$2,333.56	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Chemical Mfg	Motors	Transformer - High Efficiency	employee	Existing	8,274.44	10	\$2,333.56	15%	15%	\$0.02	0.00	0.00	7th Power Plan

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Chemical Mfg	Process	Transformer - High Efficiency	employee	Existing	5,577.47	10	\$2,333.56	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Chemical Mfg	Miscellaneous	Transformer - High Efficiency	employee	Existing	735.80	10	\$2,333.56	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Chemical Mfg	Cooling	Strategic Energy Management	employee	Existing	1,718.35	3	\$14,331.99	0%	5%	\$0.08	5.20	5.70	AEG Research
Chemical Mfg	Heating	Strategic Energy Management	employee	Existing	10,693.26	3	\$14,331.99	0%	5%	\$0.08	36.65	38.03	AEG Research
Chemical Mfg	Ventilation	Strategic Energy Management	employee	Existing	160.26	3	\$14,331.99	0%	5%	\$0.08	2.84	3.30	AEG Research
Chemical Mfg	Interior Lighting	Strategic Energy Management	employee	Existing	1,038.21	3	\$14,331.99	0%	5%	\$0.08	15.90	20.86	AEG Research
Chemical Mfg	Exterior Lighting	Strategic Energy Management	employee	Existing	225.67	3	\$14,331.99	0%	5%	\$0.08	3.52	4.69	AEG Research
Chemical Mfg	Motors	Strategic Energy Management	employee	Existing	23,716.03	3	\$14,331.99	0%	5%	\$0.08	387.83	419.51	AEG Research
Chemical Mfg	Process	Strategic Energy Management	employee	Existing	15,980.38	3	\$14,331.99	0%	5%	\$0.08	278.21	281.33	AEG Research
Chemical Mfg	Miscellaneous	Strategic Energy Management	employee	Existing	2,106.17	3	\$14,331.99	0%	5%	\$0.08	46.56	38.34	AEG Research
Chemical Mfg	Interior Lighting	Commissioning	employee	Existing	1,196.90	3	\$23,846.51	0%	0%	\$0.16	0.00	0.00	AEG Research
Chemical Mfg	Exterior Lighting	Commissioning	employee	Existing	260.17	3	\$23,846.51	0%	0%	\$0.16	0.00	0.00	AEG Research
Chemical Mfg	Motors	Commissioning	employee	Existing	27,337.37	3	\$23,846.51	0%	0%	\$0.16	0.00	0.00	AEG Research
Chemical Mfg	Process	Commissioning	employee	Existing	18,419.70	3	\$23,846.51	0%	0%	\$0.16	0.00	0.00	AEG Research
Chemical Mfg	Miscellaneous	Commissioning	employee	Existing	2,427.37	3	\$23,846.51	0%	0%	\$0.16	0.00	0.00	AEG Research
Chemical Mfg	Interior Lighting	Retrocommissioning	employee	Existing	1,212.17	3	\$15,138.24	5%	39%	\$0.10	127.93	165.73	AEG Research
Chemical Mfg	Exterior Lighting	Retrocommissioning	employee	Existing	262.14	3	\$15,138.24	5%	39%	\$0.10	28.07	37.03	AEG Research
Chemical Mfg	Motors	Retrocommissioning	employee	Existing	27,581.46	3	\$15,138.24	5%	39%	\$0.10	3,094.38	3,317.28	AEG Research
Chemical Mfg	Process	Retrocommissioning	employee	Existing	18,591.58	3	\$15,138.24	5%	39%	\$0.10	2,219.78	2,225.19	AEG Research
Chemical Mfg	Miscellaneous	Retrocommissioning	employee	Existing	2,452.65	3	\$15,138.24	5%	39%	\$0.10	371.52	303.48	AEG Research
Chemical Mfg	Motors	Municipal Sewage Treatment	employee	Existing	4,164.54	12	\$2,449.74	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Chemical Mfg	Motors	Municipal Water Supply Treatment	employee	Existing	0.00	12	\$0.00	0%	0%	\$0.00	0.00	0.00	7th Power Plan

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Chemical Mfg	Cooling	Insulation - Ceiling	sqft	New	0.11	45	\$1.28	15%	25%	\$0.16	8.26	8.39	Building Energy Simulation Tool
Chemical Mfg	Heating	Insulation - Ceiling	sqft	New	0.52	45	\$1.28	15%	25%	\$0.16	41.35	41.34	Building Energy Simulation Tool
Chemical Mfg	Ventilation	Insulation - Ceiling	sqft	New	0.01	45	\$1.28	15%	25%	\$0.16	4.92	5.38	Building Energy Simulation Tool
Chemical Mfg	Cooling	Insulation - Ducting	sqft	New	0.04	20	\$0.84	15%	25%	\$1.13	3.19	3.24	Building Energy Simulation Tool
Chemical Mfg	Heating	Insulation - Ducting	sqft	New	0.02	20	\$0.84	15%	25%	\$1.13	1.74	1.74	Building Energy Simulation Tool
Chemical Mfg	Ventilation	Insulation - Ducting	sqft	New	0.00	20	\$0.84	15%	25%	\$1.13	0.21	0.23	Building Energy Simulation Tool
Chemical Mfg	Cooling	Insulation - Wall Cavity	sqft	New	0.00	45	\$0.15	45%	50%	\$0.02	0.06	0.07	Building Energy Simulation Tool
Chemical Mfg	Heating	Insulation - Wall Cavity	sqft	New	0.71	45	\$0.15	45%	50%	\$0.02	28.09	28.11	Building Energy Simulation Tool
Chemical Mfg	Ventilation	Insulation - Wall Cavity	sqft	New	0.01	45	\$0.15	45%	50%	\$0.02	3.29	3.59	Building Energy Simulation Tool
Chemical Mfg	Cooling	HVAC - Duct Repair and Sealing	sqft	New	0.01	18	\$0.00	15%	25%	\$0.00	1.04	1.06	Building Energy Simulation Tool
Chemical Mfg	Heating	HVAC - Duct Repair and Sealing	sqft	New	0.05	18	\$0.00	15%	25%	\$0.00	3.90	3.90	Building Energy Simulation Tool
Chemical Mfg	Ventilation	HVAC - Duct Repair and Sealing	sqft	New	0.00	18	\$0.00	15%	25%	\$0.00	0.46	0.50	Building Energy Simulation Tool
Chemical Mfg	Cooling	Chiller - Chilled Water Reset	sqft	New	0.04	10	\$0.01	15%	45%	\$0.03	0.77	0.80	AEG-BEST
Chemical Mfg	Cooling	Chiller - Chilled Water Variable-Flow System	sqft	New	0.20	15	\$0.50	15%	60%	\$0.24	10.12	10.45	AEG-BEST
Chemical Mfg	Cooling	Chiller - Variable Speed Fans	sqft	New	0.07	15	\$0.03	15%	75%	\$0.04	5.00	5.16	New Jersey TRM
Chemical Mfg	Cooling	HVAC - Economizer	sqft	New	10.15	10	\$0.25	18%	30%	\$0.00	3.40	3.53	AEG-BEST
Chemical Mfg	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.25	15%	35%	\$12.70	0.54	0.63	7th Power Plan
Chemical Mfg	Cooling	Destratification Fans (HVLS)	sqft	New	0.14	15	\$0.63	15%	50%	\$0.05	24.78	25.54	AEG Research
Chemical Mfg	Heating	Destratification Fans (HVLS)	sqft	New	1.30	15	\$0.63	15%	50%	\$0.05	241.37	241.96	AEG Research
Chemical Mfg	Cooling	RTU - Maintenance	sqft	New	0.07	3	\$0.07	15%	75%	\$0.29	0.86	0.92	AEG Research
Chemical Mfg	Cooling	Thermostat - WiFi/Interactive	sqft	New	0.26	5	\$0.66	5%	15%	\$0.09	3.22	3.34	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Chemical Mfg	Heating	Thermostat - WiFi/Interactive	sqft	New	1.23	5	\$0.66	5%	15%	\$0.09	16.19	16.29	7th Power Plan
Chemical Mfg	Ventilation	Thermostat - WiFi/Interactive	sqft	New	0.02	5	\$0.66	5%	15%	\$0.09	1.92	2.25	7th Power Plan
Chemical Mfg	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	20.70	15	\$0.35	22%	41%	\$0.00	175.64	205.26	7th Power Plan
Chemical Mfg	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	28.40	15	\$0.58	22%	41%	\$0.00	239.26	281.78	7th Power Plan
Chemical Mfg	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	New	0.02	15	\$0.00	1%	2%	\$0.01	0.37	0.47	7th Power Plan
Chemical Mfg	Interior Lighting	Interior Lighting - Timeclocks and Timers	sqft	New	0.00	8	\$0.00	7%	7%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Chemical Mfg	Interior Lighting	Interior Lighting - Skylights	sqft	New	0.00	15	\$1.01	18%	24%	\$0.00	0.00	0.00	AEG Research
Chemical Mfg	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	sqft	New	0.03	16	\$1.81	5%	40%	\$4.11	15.25	19.25	7th Power Plan
Chemical Mfg	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	New	0.03	11	\$0.00	15%	50%	\$0.01	9.81	13.05	Illinois TRM
Chemical Mfg	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	sqft	New	0.04	8	\$0.03	15%	25%	\$0.08	8.46	11.72	7th Power Plan
Chemical Mfg	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	New	0.02	8	\$0.02	44%	60%	\$0.08	7.23	9.98	Pacific Gas and Electric Research
Chemical Mfg	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	New	0.02	7	\$1.19	15%	30%	\$4.56	7.02	9.79	AEG Research
Chemical Mfg	Process	Process - Conductivity Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Chemical Mfg	Process	Process - Timers and Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Chemical Mfg	Motors	Process - Timers and Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Chemical Mfg	Process	Refrigeration - Floating Head Pressure	employee	New	3,034.88	15	\$2,085.45	20%	50%	\$0.08	76.53	76.53	RTF Workbook
Chemical Mfg	Process	Refrigeration - System Optimization	employee	New	4,861.69	15	\$729.24	20%	50%	\$0.02	122.58	122.58	AEG Research
Chemical Mfg	Motors	Pumping System - Equipment Upgrade	employee	New	33,563.01	10	\$4,872.98	9%	38%	\$0.05	511.91	509.82	7th Power Plan
Chemical Mfg	Motors	Pumping System - System Optimization	employee	New	24,986.50	12	\$7,426.41	9%	38%	\$0.04	604.18	599.28	UNIDO Study on Industrial Energy Efficiency

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Chemical Mfg	Motors	Pumping System - Variable Speed Drive	employee	New	24,790.94	10	\$7,726.24	9%	38%	\$0.04	519.75	515.15	UNIDO Study on Industrial Energy Efficiency
Chemical Mfg	Motors	Fan System - Equipment Upgrade	employee	New	8,457.02	10	\$839.79	9%	38%	\$0.05	176.61	175.57	UNIDO Study on Industrial Energy Efficiency
Chemical Mfg	Motors	Fan System - Flow Optimization	employee	New	9,982.84	10	\$1,389.48	9%	38%	\$0.02	208.52	207.25	UNIDO Study on Industrial Energy Efficiency
Chemical Mfg	Motors	Fan System - Variable Speed Drive	employee	New	14,949.74	10	\$6,991.77	9%	38%	\$0.06	313.90	310.85	UNIDO Study on Industrial Energy Efficiency
Chemical Mfg	Motors	Compressed Air - Equipment Upgrade	employee	New	63,580.05	10	\$4,626.42	17%	50%	\$0.04	1,123.48	1,123.48	7th Power Plan
Chemical Mfg	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	New	0.00	15	\$0.00	16%	38%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Chemical Mfg	Motors	Compressed Air - Refrigerated Cycling Dryers	employee	New	0.00	10	\$0.00	16%	30%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Chemical Mfg	Motors	Compressed Air - System Controls	employee	New	14,067.97	10	\$3,307.89	9%	38%	\$0.03	215.07	214.14	UNIDO Study on Industrial Energy Efficiency
Chemical Mfg	Motors	Compressed Air - Leak Management Program	employee	New	35,988.18	10	\$3,325.24	18%	75%	\$0.04	1,093.77	1,091.45	7th Power Plan
Chemical Mfg	Motors	Compressed Air - Variable Speed Drive	employee	New	26,095.22	15	\$20,280.47	26%	45%	\$0.08	425.10	421.79	UNIDO Study on Industrial Energy Efficiency
Chemical Mfg	Motors	Compressed Air - Low Pressure-Drop Filters	employee	New	869.96	10	\$312.58	17%	50%	\$0.05	15.55	15.48	Illinois TRM
Chemical Mfg	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	New	5,299.43	10	\$1,014.02	17%	50%	\$0.03	94.46	94.02	UNIDO Study on Industrial Energy Efficiency
Chemical Mfg	Motors	Compressed Air - Outside Air Intake	employee	New	0.00	20	\$0.00	17%	50%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Chemical Mfg	Motors	Compressed Air - Receiver Capacity Addition	employee	New	5,258.51	15	\$2,788.56	17%	50%	\$0.06	149.73	148.67	UNIDO Study on Industrial Energy Efficiency
Chemical Mfg	Motors	Material Handling - Variable Speed Drive	employee	New	29,616.79	10	\$10,515.80	25%	45%	\$0.05	435.99	431.95	7th Power Plan
Chemical Mfg	Motors	Motors - Green Rewind (<100 HP)	employee	New	1,061.93	10	\$455.05	10%	50%	\$0.06	156.44	154.94	7th Power Plan
Chemical Mfg	Motors	Motors - Green Rewind (100 HP+)	employee	New	596.14	10	\$161.51	6%	25%	\$0.04	41.66	41.29	7th Power Plan
Chemical Mfg	Motors	Switch from Belt Drive to Direct Drive	employee	New	9,029.31	12	\$1,997.47	16%	25%	\$0.03	363.71	360.90	2015-mdu-irp-report---volume-iii.pdf
Chemical Mfg	Motors	Motors - Synchronous Belts	employee	New	2,387.18	10	\$600.92	16%	36%	\$0.03	127.81	127.21	7th Power Plan

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Chemical Mfg	Miscellaneous	Agriculture - Engine Block Timer	employee	New	19,440.60	3	\$239.82	0%	0%	\$0.00	0.00	0.00	Vermont TRM
Chemical Mfg	Motors	Agriculture - Live Stock Waterer	employee	New	81,615.34	10	\$42,915.16	0%	0%	\$0.07	0.00	0.00	Ontario Power TRM
Chemical Mfg	Process	Dairy - Milk Precoolers	employee	New	20,232.54	15	\$9,389.94	0%	0%	\$0.05	0.00	0.00	Ontario Power TRM
Chemical Mfg	Process	Clean Room: Change Filter Strategy	employee	New	82,931.56	15	\$611.65	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Chemical Mfg	Process	Clean Room: Chiller Optimize	employee	New	6,005.34	15	\$556.02	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Chemical Mfg	Process	Clean Room: Clean Room HVAC	employee	New	3,641.86	15	\$671.18	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Chemical Mfg	Process	Elec Chip Fab: Solidstate Chiller	employee	New	3,641.86	15	\$2,108.17	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Chemical Mfg	Process	Elec Chip Fab: Eliminate Exhaust	employee	New	10,353.90	15	\$2,200.59	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Chemical Mfg	Process	Elec Chip Fab: Exhaust Injector	employee	New	20,707.79	15	\$10,615.09	0%	0%	\$0.06	0.00	0.00	7th Power Plan
Chemical Mfg	Process	Elec Chip Fab: Reduce Gas Pressure	employee	New	20,732.89	15	\$212.86	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Chemical Mfg	Motors	Panel: Hydraulic Press	employee	New	44,539.59	10	\$10,509.49	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Chemical Mfg	Motors	Wood: Replace Pneumatic Conveyor	employee	New	47,741.81	10	\$787.07	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Chemical Mfg	Process	Metal: New Arc Furnace	employee	New	32,448.90	10	\$3,410.37	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Chemical Mfg	Process	Paper: Premium Control Large Material	employee	New	13,960.11	10	\$6,997.46	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Chemical Mfg	Process	Paper: Efficient Pulp Screen	employee	New	11,190.07	10	\$2,304.98	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Chemical Mfg	Process	Kraft: Effluent Treatment System	employee	New	11,190.07	10	\$944.99	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Chemical Mfg	Motors	Kraft: Efficient Agitator	employee	New	80,686.26	10	\$7,842.48	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Chemical Mfg	Process	Mech Pulp: Premium Process	employee	New	125.17	5	\$16.17	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Chemical Mfg	Motors	Mech Pulp: Refiner Plate Improvement	employee	New	699.58	1	\$29.92	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Chemical Mfg	Cooling	Transformer - High Efficiency	employee	New	544.75	10	\$2,302.18	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Chemical Mfg	Heating	Transformer - High Efficiency	employee	New	3,560.39	10	\$2,302.18	15%	15%	\$0.02	0.00	0.00	7th Power Plan

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Chemical Mfg	Ventilation	Transformer - High Efficiency	employee	New	31.72	10	\$2,302.18	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Chemical Mfg	Interior Lighting	Transformer - High Efficiency	employee	New	276.29	10	\$2,302.18	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Chemical Mfg	Exterior Lighting	Transformer - High Efficiency	employee	New	57.10	10	\$2,302.18	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Chemical Mfg	Motors	Transformer - High Efficiency	employee	New	8,821.08	10	\$2,302.18	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Chemical Mfg	Process	Transformer - High Efficiency	employee	New	5,590.80	10	\$2,302.18	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Chemical Mfg	Miscellaneous	Transformer - High Efficiency	employee	New	696.95	10	\$2,302.18	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Chemical Mfg	Cooling	Strategic Energy Management	employee	New	1,555.76	3	\$14,139.26	0%	5%	\$0.08	0.09	0.10	AEG Research
Chemical Mfg	Heating	Strategic Energy Management	employee	New	10,260.51	3	\$14,139.26	0%	5%	\$0.08	0.63	0.63	AEG Research
Chemical Mfg	Ventilation	Strategic Energy Management	employee	New	91.23	3	\$14,139.26	0%	5%	\$0.08	0.04	0.05	AEG Research
Chemical Mfg	Interior Lighting	Strategic Energy Management	employee	New	796.23	3	\$14,139.26	0%	5%	\$0.08	0.27	0.39	AEG Research
Chemical Mfg	Exterior Lighting	Strategic Energy Management	employee	New	164.95	3	\$14,139.26	0%	5%	\$0.08	0.06	0.09	AEG Research
Chemical Mfg	Motors	Strategic Energy Management	employee	New	25,483.09	3	\$14,139.26	0%	5%	\$0.08	7.80	7.88	AEG Research
Chemical Mfg	Process	Strategic Energy Management	employee	New	16,151.20	3	\$14,139.26	0%	5%	\$0.08	4.88	4.89	AEG Research
Chemical Mfg	Miscellaneous	Strategic Energy Management	employee	New	2,013.41	3	\$14,139.26	0%	5%	\$0.08	0.75	0.52	AEG Research
Chemical Mfg	Interior Lighting	Commissioning	employee	New	918.54	3	\$23,918.85	5%	39%	\$0.16	2.11	3.06	AEG Research
Chemical Mfg	Exterior Lighting	Commissioning	employee	New	190.28	3	\$23,918.85	5%	39%	\$0.16	0.49	0.71	AEG Research
Chemical Mfg	Motors	Commissioning	employee	New	29,397.70	3	\$23,918.85	5%	39%	\$0.16	61.17	61.82	AEG Research
Chemical Mfg	Process	Commissioning	employee	New	18,632.27	3	\$23,918.85	5%	39%	\$0.16	38.30	38.33	AEG Research
Chemical Mfg	Miscellaneous	Commissioning	employee	New	2,322.69	3	\$23,918.85	5%	39%	\$0.16	5.91	4.08	AEG Research
Chemical Mfg	Interior Lighting	Retrocommissioning	employee	New	920.98	3	\$15,184.16	0%	0%	\$0.10	0.00	0.00	AEG Research

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Chemical Mfg	Exterior Lighting	Retrocommissioning	employee	New	190.32	3	\$15,184.16	0%	0%	\$0.10	0.00	0.00	AEG Research
Chemical Mfg	Motors	Retrocommissioning	employee	New	29,403.58	3	\$15,184.16	0%	0%	\$0.10	0.00	0.00	AEG Research
Chemical Mfg	Process	Retrocommissioning	employee	New	18,636.02	3	\$15,184.16	0%	0%	\$0.10	0.00	0.00	AEG Research
Chemical Mfg	Miscellaneous	Retrocommissioning	employee	New	2,323.17	3	\$15,184.16	0%	0%	\$0.10	0.00	0.00	AEG Research
Chemical Mfg	Motors	Municipal Sewage Treatment	employee	New	4,424.63	12	\$2,449.74	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Chemical Mfg	Motors	Municipal Water Supply Treatment	employee	New	0.00	12	\$0.00	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Cooling	Insulation - Ceiling	sqft	Existing	0.12	45	\$1.28	15%	25%	\$0.15	1.95	2.08	Building Energy Simulation Tool
Electronic Equipment Mfg	Heating	Insulation - Ceiling	sqft	Existing	0.55	45	\$1.28	15%	25%	\$0.15	9.64	9.91	Building Energy Simulation Tool
Electronic Equipment Mfg	Ventilation	Insulation - Ceiling	sqft	Existing	0.02	45	\$1.28	15%	25%	\$0.15	1.39	1.59	Building Energy Simulation Tool
Electronic Equipment Mfg	Cooling	Insulation - Ducting	sqft	Existing	0.05	20	\$0.84	15%	25%	\$1.05	0.71	0.78	Building Energy Simulation Tool
Electronic Equipment Mfg	Heating	Insulation - Ducting	sqft	Existing	0.02	20	\$0.84	15%	25%	\$1.05	0.40	0.42	Building Energy Simulation Tool
Electronic Equipment Mfg	Ventilation	Insulation - Ducting	sqft	Existing	0.00	20	\$0.84	15%	25%	\$1.05	0.06	0.07	Building Energy Simulation Tool
Electronic Equipment Mfg	Cooling	Insulation - Wall Cavity	sqft	Existing	0.00	45	\$0.15	45%	50%	\$0.02	0.02	0.02	Building Energy Simulation Tool
Electronic Equipment Mfg	Heating	Insulation - Wall Cavity	sqft	Existing	0.76	45	\$0.15	45%	50%	\$0.02	6.85	6.87	Building Energy Simulation Tool
Electronic Equipment Mfg	Ventilation	Insulation - Wall Cavity	sqft	Existing	0.02	45	\$0.15	45%	50%	\$0.02	0.93	1.06	Building Energy Simulation Tool
Electronic Equipment Mfg	Cooling	HVAC - Duct Repair and Sealing	sqft	Existing	0.02	18	\$0.00	15%	25%	\$0.00	0.26	0.27	Building Energy Simulation Tool
Electronic Equipment Mfg	Heating	HVAC - Duct Repair and Sealing	sqft	Existing	0.05	18	\$0.00	15%	25%	\$0.00	0.97	0.97	Building Energy Simulation Tool
Electronic Equipment Mfg	Ventilation	HVAC - Duct Repair and Sealing	sqft	Existing	0.00	18	\$0.00	15%	25%	\$0.00	0.13	0.15	Building Energy Simulation Tool
Electronic Equipment Mfg	Cooling	Chiller - Chilled Water Reset	sqft	Existing	0.05	10	\$0.01	15%	45%	\$0.03	0.63	0.67	AEG-BEST
Electronic Equipment Mfg	Cooling	Chiller - Chilled Water Variable-Flow System	sqft	Existing	0.25	15	\$0.50	15%	60%	\$0.20	4.96	5.48	AEG-BEST

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Electronic Equipment Mfg	Cooling	Chiller - Variable Speed Fans	sqft	Existing	0.10	15	\$0.03	15%	75%	\$0.04	2.58	2.74	New Jersey TRM
Electronic Equipment Mfg	Cooling	HVAC - Economizer	sqft	Existing	1.33	10	\$0.25	18%	30%	\$0.03	2.59	2.75	AEG-BEST
Electronic Equipment Mfg	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.25	15%	35%	\$10.61	0.28	0.34	7th Power Plan
Electronic Equipment Mfg	Cooling	Destratification Fans (HVLS)	sqft	Existing	0.16	15	\$0.63	15%	50%	\$0.05	10.88	11.62	AEG Research
Electronic Equipment Mfg	Heating	Destratification Fans (HVLS)	sqft	Existing	1.39	15	\$0.63	15%	50%	\$0.05	105.90	106.56	AEG Research
Electronic Equipment Mfg	Cooling	RTU - Maintenance	sqft	Existing	0.08	3	\$0.07	15%	75%	\$0.28	4.55	5.13	AEG Research
Electronic Equipment Mfg	Cooling	Thermostat - WiFi/Interactive	sqft	Existing	0.29	5	\$0.66	5%	15%	\$0.09	4.50	4.85	7th Power Plan
Electronic Equipment Mfg	Heating	Thermostat - WiFi/Interactive	sqft	Existing	1.29	5	\$0.66	5%	15%	\$0.09	22.68	23.37	7th Power Plan
Electronic Equipment Mfg	Ventilation	Thermostat - WiFi/Interactive	sqft	Existing	0.04	5	\$0.66	5%	15%	\$0.09	3.26	3.74	7th Power Plan
Electronic Equipment Mfg	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	3.06	15	\$0.35	7%	33%	\$0.01	21.94	26.37	7th Power Plan
Electronic Equipment Mfg	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	4.22	15	\$0.58	7%	33%	\$0.01	29.48	36.24	7th Power Plan
Electronic Equipment Mfg	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	Existing	0.02	15	\$0.00	1%	2%	\$0.01	0.13	0.18	7th Power Plan
Electronic Equipment Mfg	Interior Lighting	Interior Lighting - Timeclocks and Timers	sqft	Existing	0.00	8	\$0.00	7%	7%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Electronic Equipment Mfg	Interior Lighting	Interior Lighting - Skylights	sqft	Existing	0.00	15	\$1.01	15%	23%	\$0.00	0.00	0.00	AEG Research
Electronic Equipment Mfg	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	sqft	Existing	0.03	16	\$1.81	5%	40%	\$4.11	4.07	5.75	7th Power Plan
Electronic Equipment Mfg	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	Existing	0.03	11	\$0.00	15%	50%	\$0.01	4.07	5.66	Illinois TRM
Electronic Equipment Mfg	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	sqft	Existing	0.05	8	\$0.03	15%	25%	\$0.08	5.50	7.48	7th Power Plan
Electronic Equipment Mfg	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	Existing	0.03	8	\$0.02	33%	60%	\$0.08	7.65	10.70	Pacific Gas and Electric Research
Electronic Equipment Mfg	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	Existing	0.03	7	\$1.19	15%	30%	\$4.54	4.79	7.07	AEG Research

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Electronic Equipment Mfg	Process	Process - Conductivity Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Process	Process - Timers and Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Motors	Process - Timers and Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Process	Refrigeration - Floating Head Pressure	employee	Existing	416.55	15	\$420.45	20%	50%	\$0.11	9.06	9.39	RTF Workbook
Electronic Equipment Mfg	Process	Refrigeration - System Optimization	employee	Existing	674.52	15	\$296.07	20%	50%	\$0.05	14.76	15.15	AEG Research
Electronic Equipment Mfg	Motors	Pumping System - Equipment Upgrade	employee	Existing	317.40	10	\$46.79	9%	38%	\$0.05	6.63	6.84	7th Power Plan
Electronic Equipment Mfg	Motors	Pumping System - System Optimization	employee	Existing	236.04	12	\$71.31	9%	38%	\$0.04	4.83	5.00	UNIDO Study on Industrial Energy Efficiency
Electronic Equipment Mfg	Motors	Pumping System - Variable Speed Drive	employee	Existing	233.78	10	\$74.19	9%	38%	\$0.04	4.76	4.96	UNIDO Study on Industrial Energy Efficiency
Electronic Equipment Mfg	Motors	Fan System - Equipment Upgrade	employee	Existing	280.63	10	\$28.23	9%	38%	\$0.05	5.79	5.92	UNIDO Study on Industrial Energy Efficiency
Electronic Equipment Mfg	Motors	Fan System - Flow Optimization	employee	Existing	330.94	10	\$46.72	9%	38%	\$0.02	6.81	6.99	UNIDO Study on Industrial Energy Efficiency
Electronic Equipment Mfg	Motors	Fan System - Variable Speed Drive	employee	Existing	487.56	10	\$235.07	9%	38%	\$0.06	9.78	10.40	UNIDO Study on Industrial Energy Efficiency
Electronic Equipment Mfg	Motors	Compressed Air - Equipment Upgrade	employee	Existing	1,667.79	10	\$121.36	17%	50%	\$0.04	41.46	41.46	7th Power Plan
Electronic Equipment Mfg	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	Existing	0.00	15	\$0.00	16%	38%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Electronic Equipment Mfg	Motors	Compressed Air - Refrigerated Cycling Dryers	employee	Existing	0.00	10	\$0.00	16%	30%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Electronic Equipment Mfg	Motors	Compressed Air - System Controls	employee	Existing	363.73	10	\$86.77	9%	38%	\$0.03	7.56	7.87	UNIDO Study on Industrial Energy Efficiency
Electronic Equipment Mfg	Motors	Compressed Air - Leak Management Program	employee	Existing	937.76	10	\$87.23	18%	75%	\$0.04	39.64	40.17	7th Power Plan
Electronic Equipment Mfg	Motors	Compressed Air - Variable Speed Drive	employee	Existing	665.58	15	\$531.98	26%	45%	\$0.08	9.08	9.68	UNIDO Study on Industrial Energy Efficiency
Electronic Equipment Mfg	Motors	Compressed Air - Low Pressure-Drop Filters	employee	Existing	22.19	10	\$8.20	17%	50%	\$0.05	0.53	0.57	Illinois TRM
Electronic Equipment Mfg	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	Existing	136.84	10	\$26.60	17%	50%	\$0.03	3.32	3.45	UNIDO Study on Industrial Energy Efficiency

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Electronic Equipment Mfg	Motors	Compressed Air - Outside Air Intake	employee	Existing	0.00	20	\$0.00	17%	50%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Electronic Equipment Mfg	Motors	Compressed Air - Receiver Capacity Addition	employee	Existing	135.53	15	\$73.15	17%	50%	\$0.06	3.27	3.43	UNIDO Study on Industrial Energy Efficiency
Electronic Equipment Mfg	Motors	Material Handling - Variable Speed Drive	employee	Existing	2,636.66	10	\$951.62	25%	45%	\$0.05	37.60	39.28	7th Power Plan
Electronic Equipment Mfg	Motors	Motors - Green Rewind (<100 HP)	employee	Existing	49.97	10	\$22.05	10%	50%	\$0.06	5.63	5.98	7th Power Plan
Electronic Equipment Mfg	Motors	Motors - Green Rewind (100 HP+)	employee	Existing	28.39	10	\$7.83	6%	25%	\$0.04	1.54	1.61	7th Power Plan
Electronic Equipment Mfg	Motors	Switch from Belt Drive to Direct Drive	employee	Existing	431.64	12	\$96.79	16%	25%	\$0.03	11.81	12.17	2015-mdu-irp-report---volume-iii.pdf
Electronic Equipment Mfg	Motors	Motors - Synchronous Belts	employee	Existing	113.87	10	\$29.12	16%	36%	\$0.03	6.61	6.91	7th Power Plan
Electronic Equipment Mfg	Miscellaneous	Agriculture - Engine Block Timer	employee	Existing	5,968.90	3	\$73.63	0%	0%	\$0.00	0.00	0.00	Vermont TRM
Electronic Equipment Mfg	Motors	Agriculture - Live Stock Waterer	employee	Existing	758.88	10	\$412.07	0%	0%	\$0.07	0.00	0.00	Ontario Power TRM
Electronic Equipment Mfg	Process	Dairy - Milk Precoolers	employee	Existing	2,799.78	15	\$1,337.90	0%	0%	\$0.05	0.00	0.00	Ontario Power TRM
Electronic Equipment Mfg	Process	Clean Room: Change Filter Strategy	employee	Existing	865.59	15	\$6.40	15%	75%	\$0.00	38.14	38.21	7th Power Plan
Electronic Equipment Mfg	Process	Clean Room: Chiller Optimize	employee	Existing	846.00	15	\$79.22	15%	75%	\$0.01	37.07	37.43	7th Power Plan
Electronic Equipment Mfg	Process	Clean Room: Clean Room HVAC	employee	Existing	509.19	15	\$95.63	15%	75%	\$0.02	22.19	22.58	7th Power Plan
Electronic Equipment Mfg	Process	Elec Chip Fab: Solidstate Chiller	employee	Existing	502.75	15	\$300.38	15%	75%	\$0.07	22.12	22.81	7th Power Plan
Electronic Equipment Mfg	Process	Elec Chip Fab: Eliminate Exhaust	employee	Existing	105.74	15	\$23.02	15%	75%	\$0.02	4.67	4.79	7th Power Plan
Electronic Equipment Mfg	Process	Elec Chip Fab: Exhaust Injector	employee	Existing	210.42	15	\$111.06	15%	75%	\$0.06	9.27	9.54	7th Power Plan
Electronic Equipment Mfg	Process	Elec Chip Fab: Reduce Gas Pressure	employee	Existing	216.92	15	\$2.23	15%	75%	\$0.00	0.00	9.73	7th Power Plan
Electronic Equipment Mfg	Motors	Panel: Hydraulic Press	employee	Existing	3,967.84	10	\$951.05	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Motors	Wood: Replace Pneumatic Conveyor	employee	Existing	4,320.35	10	\$71.22	0%	0%	\$0.00	0.00	0.00	7th Power Plan

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Electronic Equipment Mfg	Process	Metal: New Arc Furnace	employee	Existing	5,453.49	10	\$587.19	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Process	Paper: Premium Control Large Material	employee	Existing	1,332.30	10	\$694.38	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Process	Paper: Efficient Pulp Screen	employee	Existing	1,082.58	10	\$228.73	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Process	Kraft: Effluent Treatment System	employee	Existing	1,089.64	10	\$93.77	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Motors	Kraft: Efficient Agitator	employee	Existing	7,199.56	10	\$709.70	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Process	Mech Pulp: Premium Process	employee	Existing	11.97	5	\$1.60	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Motors	Mech Pulp: Refiner Plate Improvement	employee	Existing	61.30	1	\$2.71	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Cooling	Transformer - High Efficiency	employee	Existing	298.44	10	\$402.15	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Heating	Transformer - High Efficiency	employee	Existing	1,828.39	10	\$402.15	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Ventilation	Transformer - High Efficiency	employee	Existing	27.52	10	\$402.15	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Interior Lighting	Transformer - High Efficiency	employee	Existing	115.61	10	\$402.15	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Exterior Lighting	Transformer - High Efficiency	employee	Existing	25.00	10	\$402.15	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Motors	Transformer - High Efficiency	employee	Existing	331.13	10	\$402.15	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Process	Transformer - High Efficiency	employee	Existing	533.57	10	\$402.15	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Miscellaneous	Transformer - High Efficiency	employee	Existing	225.91	10	\$402.15	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Cooling	Strategic Energy Management	employee	Existing	843.26	3	\$2,469.91	0%	5%	\$0.08	0.51	0.56	AEG Research
Electronic Equipment Mfg	Heating	Strategic Energy Management	employee	Existing	5,247.59	3	\$2,469.91	0%	5%	\$0.08	3.60	3.73	AEG Research
Electronic Equipment Mfg	Ventilation	Strategic Energy Management	employee	Existing	78.64	3	\$2,469.91	0%	5%	\$0.08	0.28	0.32	AEG Research
Electronic Equipment Mfg	Interior Lighting	Strategic Energy Management	employee	Existing	330.07	3	\$2,469.91	0%	5%	\$0.08	1.01	1.33	AEG Research

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Electronic Equipment Mfg	Exterior Lighting	Strategic Energy Management	employee	Existing	71.75	3	\$2,469.91	0%	5%	\$0.08	0.22	0.30	AEG Research
Electronic Equipment Mfg	Motors	Strategic Energy Management	employee	Existing	948.98	3	\$2,469.91	0%	5%	\$0.08	3.16	3.35	AEG Research
Electronic Equipment Mfg	Process	Strategic Energy Management	employee	Existing	1,528.94	3	\$2,469.91	0%	5%	\$0.08	5.21	5.39	AEG Research
Electronic Equipment Mfg	Miscellaneous	Strategic Energy Management	employee	Existing	646.66	3	\$2,469.91	0%	5%	\$0.08	2.86	2.35	AEG Research
Electronic Equipment Mfg	Interior Lighting	Commissioning	employee	Existing	380.52	3	\$1,713.52	0%	0%	\$0.14	0.00	0.00	AEG Research
Electronic Equipment Mfg	Exterior Lighting	Commissioning	employee	Existing	82.72	3	\$1,713.52	0%	0%	\$0.14	0.00	0.00	AEG Research
Electronic Equipment Mfg	Motors	Commissioning	employee	Existing	1,093.87	3	\$1,713.52	0%	0%	\$0.14	0.00	0.00	AEG Research
Electronic Equipment Mfg	Process	Commissioning	employee	Existing	1,762.36	3	\$1,713.52	0%	0%	\$0.14	0.00	0.00	AEG Research
Electronic Equipment Mfg	Miscellaneous	Commissioning	employee	Existing	745.28	3	\$1,713.52	0%	0%	\$0.14	0.00	0.00	AEG Research
Electronic Equipment Mfg	Interior Lighting	Retrocommissioning	employee	Existing	385.38	3	\$1,087.78	5%	39%	\$0.09	8.13	10.54	AEG Research
Electronic Equipment Mfg	Exterior Lighting	Retrocommissioning	employee	Existing	83.34	3	\$1,087.78	5%	39%	\$0.09	1.79	2.35	AEG Research
Electronic Equipment Mfg	Motors	Retrocommissioning	employee	Existing	1,103.76	3	\$1,087.78	5%	39%	\$0.09	25.22	26.51	AEG Research
Electronic Equipment Mfg	Process	Retrocommissioning	employee	Existing	1,778.55	3	\$1,087.78	5%	39%	\$0.09	41.57	42.64	AEG Research
Electronic Equipment Mfg	Miscellaneous	Retrocommissioning	employee	Existing	753.04	3	\$1,087.78	5%	39%	\$0.09	22.81	18.64	AEG Research
Electronic Equipment Mfg	Motors	Municipal Sewage Treatment	employee	Existing	41.26	12	\$23.52	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Motors	Municipal Water Supply Treatment	employee	Existing	0.00	12	\$0.00	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Cooling	Insulation - Ceiling	sqft	New	0.11	45	\$1.28	15%	25%	\$0.16	0.81	0.82	Building Energy Simulation Tool
Electronic Equipment Mfg	Heating	Insulation - Ceiling	sqft	New	0.52	45	\$1.28	15%	25%	\$0.16	4.06	4.06	Building Energy Simulation Tool
Electronic Equipment Mfg	Ventilation	Insulation - Ceiling	sqft	New	0.01	45	\$1.28	15%	25%	\$0.16	0.48	0.53	Building Energy Simulation Tool

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Electronic Equipment Mfg	Cooling	Insulation - Ducting	sqft	New	0.04	20	\$0.84	15%	25%	\$1.13	0.31	0.32	Building Energy Simulation Tool
Electronic Equipment Mfg	Heating	Insulation - Ducting	sqft	New	0.02	20	\$0.84	15%	25%	\$1.13	0.17	0.17	Building Energy Simulation Tool
Electronic Equipment Mfg	Ventilation	Insulation - Ducting	sqft	New	0.00	20	\$0.84	15%	25%	\$1.13	0.02	0.02	Building Energy Simulation Tool
Electronic Equipment Mfg	Cooling	Insulation - Wall Cavity	sqft	New	0.00	45	\$0.15	45%	50%	\$0.02	0.01	0.01	Building Energy Simulation Tool
Electronic Equipment Mfg	Heating	Insulation - Wall Cavity	sqft	New	0.71	45	\$0.15	45%	50%	\$0.02	2.76	2.76	Building Energy Simulation Tool
Electronic Equipment Mfg	Ventilation	Insulation - Wall Cavity	sqft	New	0.01	45	\$0.15	45%	50%	\$0.02	0.32	0.35	Building Energy Simulation Tool
Electronic Equipment Mfg	Cooling	HVAC - Duct Repair and Sealing	sqft	New	0.01	18	\$0.00	15%	25%	\$0.00	0.10	0.10	Building Energy Simulation Tool
Electronic Equipment Mfg	Heating	HVAC - Duct Repair and Sealing	sqft	New	0.05	18	\$0.00	15%	25%	\$0.00	0.38	0.38	Building Energy Simulation Tool
Electronic Equipment Mfg	Ventilation	HVAC - Duct Repair and Sealing	sqft	New	0.00	18	\$0.00	15%	25%	\$0.00	0.04	0.05	Building Energy Simulation Tool
Electronic Equipment Mfg	Cooling	Chiller - Chilled Water Reset	sqft	New	0.04	10	\$0.01	15%	45%	\$0.03	0.08	0.08	AEG-BEST
Electronic Equipment Mfg	Cooling	Chiller - Chilled Water Variable-Flow System	sqft	New	0.20	15	\$0.50	15%	60%	\$0.24	0.99	1.03	AEG-BEST
Electronic Equipment Mfg	Cooling	Chiller - Variable Speed Fans	sqft	New	0.07	15	\$0.03	15%	75%	\$0.04	0.49	0.51	New Jersey TRM
Electronic Equipment Mfg	Cooling	HVAC - Economizer	sqft	New	1.15	10	\$0.25	18%	30%	\$0.03	0.33	0.35	AEG-BEST
Electronic Equipment Mfg	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.25	15%	35%	\$12.70	0.05	0.06	7th Power Plan
Electronic Equipment Mfg	Cooling	Destratification Fans (HVLS)	sqft	New	0.14	15	\$0.63	15%	50%	\$0.05	2.43	2.51	AEG Research
Electronic Equipment Mfg	Heating	Destratification Fans (HVLS)	sqft	New	1.30	15	\$0.63	15%	50%	\$0.05	23.69	23.75	AEG Research
Electronic Equipment Mfg	Cooling	RTU - Maintenance	sqft	New	0.07	3	\$0.07	15%	75%	\$0.29	0.08	0.09	AEG Research
Electronic Equipment Mfg	Cooling	Thermostat - WiFi/Interactive	sqft	New	0.26	5	\$0.66	5%	15%	\$0.09	0.32	0.33	7th Power Plan
Electronic Equipment Mfg	Heating	Thermostat - WiFi/Interactive	sqft	New	1.23	5	\$0.66	5%	15%	\$0.09	1.59	1.60	7th Power Plan

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Electronic Equipment Mfg	Ventilation	Thermostat - WiFi/Interactive	sqft	New	0.02	5	\$0.66	5%	15%	\$0.09	0.19	0.22	7th Power Plan
Electronic Equipment Mfg	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	2.35	15	\$0.35	22%	41%	\$0.01	11.17	13.05	7th Power Plan
Electronic Equipment Mfg	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	3.22	15	\$0.58	22%	41%	\$0.01	15.21	17.92	7th Power Plan
Electronic Equipment Mfg	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	New	0.02	15	\$0.00	1%	2%	\$0.01	0.03	0.03	7th Power Plan
Electronic Equipment Mfg	Interior Lighting	Interior Lighting - Timeclocks and Timers	sqft	New	0.00	8	\$0.00	7%	7%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Electronic Equipment Mfg	Interior Lighting	Interior Lighting - Skylights	sqft	New	0.00	15	\$1.01	18%	24%	\$0.00	0.00	0.00	AEG Research
Electronic Equipment Mfg	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	sqft	New	0.03	16	\$1.81	5%	40%	\$4.11	0.97	1.22	7th Power Plan
Electronic Equipment Mfg	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	New	0.03	11	\$0.00	15%	50%	\$0.01	0.62	0.83	Illinois TRM
Electronic Equipment Mfg	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	sqft	New	0.04	8	\$0.03	15%	25%	\$0.08	0.54	0.75	7th Power Plan
Electronic Equipment Mfg	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	New	0.02	8	\$0.02	44%	60%	\$0.08	0.46	0.63	Pacific Gas and Electric Research
Electronic Equipment Mfg	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	New	0.02	7	\$1.19	15%	30%	\$4.56	0.45	0.62	AEG Research
Electronic Equipment Mfg	Process	Process - Conductivity Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Process	Process - Timers and Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Motors	Process - Timers and Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Process	Refrigeration - Floating Head Pressure	employee	New	424.78	15	\$297.14	20%	50%	\$0.08	2.14	2.15	RTF Workbook
Electronic Equipment Mfg	Process	Refrigeration - System Optimization	employee	New	685.63	15	\$103.90	20%	50%	\$0.02	3.46	3.46	AEG Research
Electronic Equipment Mfg	Motors	Pumping System - Equipment Upgrade	employee	New	324.35	10	\$46.79	9%	38%	\$0.05	0.99	0.98	7th Power Plan
Electronic Equipment Mfg	Motors	Pumping System - System Optimization	employee	New	242.33	12	\$71.31	9%	38%	\$0.04	1.17	1.16	UNIDO Study on Industrial Energy Efficiency
Electronic Equipment Mfg	Motors	Pumping System - Variable Speed Drive	employee	New	241.32	10	\$74.19	9%	38%	\$0.04	1.01	1.00	UNIDO Study on Industrial Energy Efficiency

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Electronic Equipment Mfg	Motors	Fan System - Equipment Upgrade	employee	New	286.07	10	\$28.23	9%	38%	\$0.05	1.19	1.19	UNIDO Study on Industrial Energy Efficiency
Electronic Equipment Mfg	Motors	Fan System - Flow Optimization	employee	New	337.74	10	\$46.72	9%	38%	\$0.02	1.41	1.40	UNIDO Study on Industrial Energy Efficiency
Electronic Equipment Mfg	Motors	Fan System - Variable Speed Drive	employee	New	509.30	10	\$235.07	9%	38%	\$0.06	2.13	2.12	UNIDO Study on Industrial Energy Efficiency
Electronic Equipment Mfg	Motors	Compressed Air - Equipment Upgrade	employee	New	1,667.79	10	\$121.36	17%	50%	\$0.04	5.89	5.89	7th Power Plan
Electronic Equipment Mfg	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	New	0.00	15	\$0.00	16%	38%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Electronic Equipment Mfg	Motors	Compressed Air - Refrigerated Cycling Dryers	employee	New	0.00	10	\$0.00	16%	30%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Electronic Equipment Mfg	Motors	Compressed Air - System Controls	employee	New	373.76	10	\$86.77	9%	38%	\$0.03	1.14	1.14	UNIDO Study on Industrial Energy Efficiency
Electronic Equipment Mfg	Motors	Compressed Air - Leak Management Program	employee	New	946.93	10	\$87.23	18%	75%	\$0.04	5.75	5.74	7th Power Plan
Electronic Equipment Mfg	Motors	Compressed Air - Variable Speed Drive	employee	New	693.03	15	\$531.98	26%	45%	\$0.08	2.25	2.24	UNIDO Study on Industrial Energy Efficiency
Electronic Equipment Mfg	Motors	Compressed Air - Low Pressure-Drop Filters	employee	New	23.10	10	\$8.20	17%	50%	\$0.05	0.08	0.08	Illinois TRM
Electronic Equipment Mfg	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	New	140.37	10	\$26.60	17%	50%	\$0.03	0.50	0.50	UNIDO Study on Industrial Energy Efficiency
Electronic Equipment Mfg	Motors	Compressed Air - Outside Air Intake	employee	New	0.00	20	\$0.00	17%	50%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Electronic Equipment Mfg	Motors	Compressed Air - Receiver Capacity Addition	employee	New	139.83	15	\$73.15	17%	50%	\$0.06	0.79	0.79	UNIDO Study on Industrial Energy Efficiency
Electronic Equipment Mfg	Motors	Material Handling - Variable Speed Drive	employee	New	2,724.21	10	\$951.62	25%	45%	\$0.05	7.99	7.94	7th Power Plan
Electronic Equipment Mfg	Motors	Motors - Green Rewind (<100 HP)	employee	New	52.14	10	\$22.05	10%	50%	\$0.06	1.22	1.22	7th Power Plan
Electronic Equipment Mfg	Motors	Motors - Green Rewind (100 HP+)	employee	New	29.26	10	\$7.83	6%	25%	\$0.04	0.33	0.32	7th Power Plan
Electronic Equipment Mfg	Motors	Switch from Belt Drive to Direct Drive	employee	New	441.80	12	\$96.79	16%	25%	\$0.03	2.84	2.82	2015-mdu-irp-report---volume-iii.pdf
Electronic Equipment Mfg	Motors	Motors - Synchronous Belts	employee	New	117.23	10	\$29.12	16%	36%	\$0.03	1.00	1.00	7th Power Plan
Electronic Equipment Mfg	Miscellaneous	Agriculture - Engine Block Timer	employee	New	5,968.90	3	\$73.63	0%	0%	\$0.00	0.00	0.00	Vermont TRM

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Electronic Equipment Mfg	Motors	Agriculture - Live Stock Waterer	employee	New	794.31	10	\$412.07	0%	0%	\$0.07	0.00	0.00	Ontario Power TRM
Electronic Equipment Mfg	Process	Dairy - Milk Precoolers	employee	New	2,842.45	15	\$1,337.90	0%	0%	\$0.05	0.00	0.00	Ontario Power TRM
Electronic Equipment Mfg	Process	Clean Room: Change Filter Strategy	employee	New	867.70	15	\$6.40	15%	75%	\$0.00	0.00	10.58	7th Power Plan
Electronic Equipment Mfg	Process	Clean Room: Chiller Optimize	employee	New	850.78	15	\$79.22	15%	75%	\$0.01	10.37	10.38	7th Power Plan
Electronic Equipment Mfg	Process	Clean Room: Clean Room HVAC	employee	New	513.33	15	\$95.63	15%	75%	\$0.02	6.26	6.26	7th Power Plan
Electronic Equipment Mfg	Process	Elec Chip Fab: Solidstate Chiller	employee	New	511.08	15	\$300.38	15%	75%	\$0.07	5.20	5.21	7th Power Plan
Electronic Equipment Mfg	Process	Elec Chip Fab: Eliminate Exhaust	employee	New	106.87	15	\$23.02	15%	75%	\$0.02	1.09	1.09	7th Power Plan
Electronic Equipment Mfg	Process	Elec Chip Fab: Exhaust Injector	employee	New	213.63	15	\$111.06	15%	75%	\$0.06	2.17	2.18	7th Power Plan
Electronic Equipment Mfg	Process	Elec Chip Fab: Reduce Gas Pressure	employee	New	215.93	15	\$2.23	15%	75%	\$0.00	2.20	2.20	7th Power Plan
Electronic Equipment Mfg	Motors	Panel: Hydraulic Press	employee	New	4,084.80	10	\$951.05	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Motors	Wood: Replace Pneumatic Conveyor	employee	New	4,320.35	10	\$71.22	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Process	Metal: New Arc Furnace	employee	New	5,511.87	10	\$587.19	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Process	Paper: Premium Control Large Material	employee	New	1,360.41	10	\$694.38	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Process	Paper: Efficient Pulp Screen	employee	New	1,094.89	10	\$228.73	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Process	Kraft: Effluent Treatment System	employee	New	1,098.51	10	\$93.77	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Motors	Kraft: Efficient Agitator	employee	New	7,354.93	10	\$709.70	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Process	Mech Pulp: Premium Process	employee	New	12.20	5	\$1.60	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Motors	Mech Pulp: Refiner Plate Improvement	employee	New	64.17	1	\$2.71	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Cooling	Transformer - High Efficiency	employee	New	267.33	10	\$385.47	15%	15%	\$0.02	0.00	0.00	7th Power Plan

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Electronic Equipment Mfg	Heating	Transformer - High Efficiency	employee	New	1,747.22	10	\$385.47	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Ventilation	Transformer - High Efficiency	employee	New	15.57	10	\$385.47	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Interior Lighting	Transformer - High Efficiency	employee	New	87.84	10	\$385.47	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Exterior Lighting	Transformer - High Efficiency	employee	New	18.15	10	\$385.47	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Motors	Transformer - High Efficiency	employee	New	346.59	10	\$385.47	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Process	Transformer - High Efficiency	employee	New	544.82	10	\$385.47	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Miscellaneous	Transformer - High Efficiency	employee	New	213.99	10	\$385.47	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Cooling	Strategic Energy Management	employee	New	763.47	3	\$2,367.46	0%	5%	\$0.08	0.01	0.01	AEG Research
Electronic Equipment Mfg	Heating	Strategic Energy Management	employee	New	5,035.22	3	\$2,367.46	0%	5%	\$0.08	0.06	0.06	AEG Research
Electronic Equipment Mfg	Ventilation	Strategic Energy Management	employee	New	44.77	3	\$2,367.46	0%	5%	\$0.08	0.00	0.00	AEG Research
Electronic Equipment Mfg	Interior Lighting	Strategic Energy Management	employee	New	253.14	3	\$2,367.46	0%	5%	\$0.08	0.02	0.02	AEG Research
Electronic Equipment Mfg	Exterior Lighting	Strategic Energy Management	employee	New	52.44	3	\$2,367.46	0%	5%	\$0.08	0.00	0.01	AEG Research
Electronic Equipment Mfg	Motors	Strategic Energy Management	employee	New	1,001.26	3	\$2,367.46	0%	5%	\$0.08	0.06	0.06	AEG Research
Electronic Equipment Mfg	Process	Strategic Energy Management	employee	New	1,573.93	3	\$2,367.46	0%	5%	\$0.08	0.10	0.10	AEG Research
Electronic Equipment Mfg	Miscellaneous	Strategic Energy Management	employee	New	618.18	3	\$2,367.46	0%	5%	\$0.08	0.05	0.03	AEG Research
Electronic Equipment Mfg	Interior Lighting	Commissioning	employee	New	292.03	3	\$1,736.52	5%	39%	\$0.14	0.13	0.19	AEG Research
Electronic Equipment Mfg	Exterior Lighting	Commissioning	employee	New	60.50	3	\$1,736.52	5%	39%	\$0.14	0.03	0.04	AEG Research
Electronic Equipment Mfg	Motors	Commissioning	employee	New	1,155.06	3	\$1,736.52	5%	39%	\$0.14	0.48	0.48	AEG Research
Electronic Equipment Mfg	Process	Commissioning	employee	New	1,815.71	3	\$1,736.52	5%	39%	\$0.14	0.75	0.75	AEG Research

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Electronic Equipment Mfg	Miscellaneous	Commissioning	employee	New	713.14	3	\$1,736.52	5%	39%	\$0.14	0.36	0.25	AEG Research
Electronic Equipment Mfg	Interior Lighting	Retrocommissioning	employee	New	292.80	3	\$1,102.38	0%	0%	\$0.09	0.00	0.00	AEG Research
Electronic Equipment Mfg	Exterior Lighting	Retrocommissioning	employee	New	60.51	3	\$1,102.38	0%	0%	\$0.09	0.00	0.00	AEG Research
Electronic Equipment Mfg	Motors	Retrocommissioning	employee	New	1,155.30	3	\$1,102.38	0%	0%	\$0.09	0.00	0.00	AEG Research
Electronic Equipment Mfg	Process	Retrocommissioning	employee	New	1,816.08	3	\$1,102.38	0%	0%	\$0.09	0.00	0.00	AEG Research
Electronic Equipment Mfg	Miscellaneous	Retrocommissioning	employee	New	713.29	3	\$1,102.38	0%	0%	\$0.09	0.00	0.00	AEG Research
Electronic Equipment Mfg	Motors	Municipal Sewage Treatment	employee	New	43.05	12	\$23.52	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Electronic Equipment Mfg	Motors	Municipal Water Supply Treatment	employee	New	0.00	12	\$0.00	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Industrial Machinery	Cooling	Insulation - Ceiling	sqft	Existing	0.12	45	\$1.28	15%	25%	\$0.15	2.19	2.32	Building Energy Simulation Tool
Industrial Machinery	Heating	Insulation - Ceiling	sqft	Existing	0.55	45	\$1.28	15%	25%	\$0.15	10.71	11.00	Building Energy Simulation Tool
Industrial Machinery	Ventilation	Insulation - Ceiling	sqft	Existing	0.02	45	\$1.28	15%	25%	\$0.15	1.55	1.76	Building Energy Simulation Tool
Industrial Machinery	Cooling	Insulation - Ducting	sqft	Existing	0.05	20	\$0.84	15%	25%	\$1.05	0.79	0.87	Building Energy Simulation Tool
Industrial Machinery	Heating	Insulation - Ducting	sqft	Existing	0.02	20	\$0.84	15%	25%	\$1.05	0.44	0.46	Building Energy Simulation Tool
Industrial Machinery	Ventilation	Insulation - Ducting	sqft	Existing	0.00	20	\$0.84	15%	25%	\$1.05	0.06	0.07	Building Energy Simulation Tool
Industrial Machinery	Cooling	Insulation - Wall Cavity	sqft	Existing	0.00	45	\$0.15	45%	50%	\$0.02	0.02	0.02	Building Energy Simulation Tool
Industrial Machinery	Heating	Insulation - Wall Cavity	sqft	Existing	0.76	45	\$0.15	45%	50%	\$0.02	7.60	7.62	Building Energy Simulation Tool
Industrial Machinery	Ventilation	Insulation - Wall Cavity	sqft	Existing	0.02	45	\$0.15	45%	50%	\$0.02	1.04	1.18	Building Energy Simulation Tool
Industrial Machinery	Cooling	HVAC - Duct Repair and Sealing	sqft	Existing	0.02	18	\$0.00	15%	25%	\$0.00	0.29	0.30	Building Energy Simulation Tool
Industrial Machinery	Heating	HVAC - Duct Repair and Sealing	sqft	Existing	0.05	18	\$0.00	15%	25%	\$0.00	1.07	1.07	Building Energy Simulation Tool

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Industrial Machinery	Ventilation	HVAC - Duct Repair and Sealing	sqft	Existing	0.00	18	\$0.00	15%	25%	\$0.00	0.15	0.17	Building Energy Simulation Tool
Industrial Machinery	Cooling	Chiller - Chilled Water Reset	sqft	Existing	0.05	10	\$0.01	15%	45%	\$0.03	0.70	0.75	AEG-BEST
Industrial Machinery	Cooling	Chiller - Chilled Water Variable-Flow System	sqft	Existing	0.25	15	\$0.50	15%	60%	\$0.20	5.56	6.11	AEG-BEST
Industrial Machinery	Cooling	Chiller - Variable Speed Fans	sqft	Existing	0.10	15	\$0.03	15%	75%	\$0.04	2.87	3.04	New Jersey TRM
Industrial Machinery	Cooling	HVAC - Economizer	sqft	Existing	0.23	10	\$0.25	18%	30%	\$0.14	2.68	2.96	AEG-BEST
Industrial Machinery	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.25	15%	35%	\$10.61	0.31	0.38	7th Power Plan
Industrial Machinery	Cooling	Destratification Fans (HVLS)	sqft	Existing	0.16	15	\$0.63	15%	50%	\$0.05	12.20	12.95	AEG Research
Industrial Machinery	Heating	Destratification Fans (HVLS)	sqft	Existing	1.39	15	\$0.63	15%	50%	\$0.05	117.56	118.29	AEG Research
Industrial Machinery	Cooling	RTU - Maintenance	sqft	Existing	0.08	3	\$0.07	15%	75%	\$0.28	5.05	5.70	AEG Research
Industrial Machinery	Cooling	Thermostat - WiFi/Interactive	sqft	Existing	0.29	5	\$0.66	5%	15%	\$0.09	4.99	5.38	7th Power Plan
Industrial Machinery	Heating	Thermostat - WiFi/Interactive	sqft	Existing	1.29	5	\$0.66	5%	15%	\$0.09	25.18	25.94	7th Power Plan
Industrial Machinery	Ventilation	Thermostat - WiFi/Interactive	sqft	Existing	0.04	5	\$0.66	5%	15%	\$0.09	3.62	4.15	7th Power Plan
Industrial Machinery	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.56	15	\$0.35	7%	33%	\$0.05	36.05	43.45	7th Power Plan
Industrial Machinery	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.77	15	\$0.58	7%	33%	\$0.06	48.44	59.73	7th Power Plan
Industrial Machinery	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	Existing	0.02	15	\$0.00	1%	2%	\$0.01	0.22	0.29	7th Power Plan
Industrial Machinery	Interior Lighting	Interior Lighting - Timerclocks and Timers	sqft	Existing	0.00	8	\$0.00	7%	7%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Industrial Machinery	Interior Lighting	Interior Lighting - Skylights	sqft	Existing	0.00	15	\$1.01	15%	23%	\$0.00	0.00	0.00	AEG Research
Industrial Machinery	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	sqft	Existing	0.03	16	\$1.81	5%	40%	\$4.11	6.74	9.52	7th Power Plan
Industrial Machinery	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	Existing	0.04	11	\$0.00	15%	50%	\$0.01	7.45	9.61	Illinois TRM

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Industrial Machinery	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	sqft	Existing	0.05	8	\$0.03	15%	25%	\$0.08	9.11	12.39	7th Power Plan
Industrial Machinery	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	Existing	0.03	8	\$0.02	33%	60%	\$0.08	12.68	17.72	Pacific Gas and Electric Research
Industrial Machinery	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	Existing	0.03	7	\$1.19	15%	30%	\$4.54	7.94	11.71	AEG Research
Industrial Machinery	Process	Process - Conductivity Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Industrial Machinery	Process	Process - Timers and Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Industrial Machinery	Motors	Process - Timers and Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Industrial Machinery	Process	Refrigeration - Floating Head Pressure	employee	Existing	51.48	15	\$50.12	20%	50%	\$0.11	3.43	3.44	RTF Workbook
Industrial Machinery	Process	Refrigeration - System Optimization	employee	Existing	82.58	15	\$35.30	20%	50%	\$0.05	5.51	5.51	AEG Research
Industrial Machinery	Motors	Pumping System - Equipment Upgrade	employee	Existing	504.65	10	\$75.32	9%	38%	\$0.05	31.42	32.79	7th Power Plan
Industrial Machinery	Motors	Pumping System - System Optimization	employee	Existing	374.51	12	\$114.79	9%	38%	\$0.04	22.79	23.87	UNIDO Study on Industrial Energy Efficiency
Industrial Machinery	Motors	Pumping System - Variable Speed Drive	employee	Existing	370.19	10	\$119.43	9%	38%	\$0.04	22.37	23.66	UNIDO Study on Industrial Energy Efficiency
Industrial Machinery	Motors	Fan System - Equipment Upgrade	employee	Existing	653.55	10	\$66.11	9%	38%	\$0.05	40.31	41.43	UNIDO Study on Industrial Energy Efficiency
Industrial Machinery	Motors	Fan System - Flow Optimization	employee	Existing	768.25	10	\$109.39	9%	38%	\$0.02	47.22	48.77	UNIDO Study on Industrial Energy Efficiency
Industrial Machinery	Motors	Fan System - Variable Speed Drive	employee	Existing	1,127.35	10	\$550.42	9%	38%	\$0.06	67.33	72.38	UNIDO Study on Industrial Energy Efficiency
Industrial Machinery	Motors	Compressed Air - Equipment Upgrade	employee	Existing	1,838.13	10	\$133.75	17%	50%	\$0.04	137.09	137.09	7th Power Plan
Industrial Machinery	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	Existing	0.00	15	\$0.00	16%	38%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Industrial Machinery	Motors	Compressed Air - Refrigerated Cycling Dryers	employee	Existing	0.00	10	\$0.00	16%	30%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Industrial Machinery	Motors	Compressed Air - System Controls	employee	Existing	394.61	10	\$95.63	9%	38%	\$0.03	24.37	25.76	UNIDO Study on Industrial Energy Efficiency
Industrial Machinery	Motors	Compressed Air - Leak Management Program	employee	Existing	1,030.70	10	\$96.13	18%	75%	\$0.04	130.52	132.58	7th Power Plan

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Industrial Machinery	Motors	Compressed Air - Variable Speed Drive	employee	Existing	724.84	15	\$586.32	26%	45%	\$0.08	29.47	31.77	UNIDO Study on Industrial Energy Efficiency
Industrial Machinery	Motors	Compressed Air - Low Pressure-Drop Filters	employee	Existing	24.17	10	\$9.04	17%	50%	\$0.05	1.72	1.85	Illinois TRM
Industrial Machinery	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	Existing	148.68	10	\$29.32	17%	50%	\$0.03	10.74	11.30	UNIDO Study on Industrial Energy Efficiency
Industrial Machinery	Motors	Compressed Air - Outside Air Intake	employee	Existing	0.00	20	\$0.00	17%	50%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Industrial Machinery	Motors	Compressed Air - Receiver Capacity Addition	employee	Existing	146.96	15	\$80.62	17%	50%	\$0.06	10.55	11.22	UNIDO Study on Industrial Energy Efficiency
Industrial Machinery	Motors	Material Handling - Variable Speed Drive	employee	Existing	1,478.34	10	\$543.12	25%	45%	\$0.05	62.58	66.36	7th Power Plan
Industrial Machinery	Motors	Motors - Green Rewind (<100 HP)	employee	Existing	46.52	10	\$20.79	10%	50%	\$0.06	15.62	16.76	7th Power Plan
Industrial Machinery	Motors	Motors - Green Rewind (100 HP+)	employee	Existing	26.33	10	\$7.38	6%	25%	\$0.04	4.25	4.49	7th Power Plan
Industrial Machinery	Motors	Switch from Belt Drive to Direct Drive	employee	Existing	401.14	12	\$91.25	16%	25%	\$0.03	32.66	34.04	2015-mdu-irp-report---volume-iii.pdf
Industrial Machinery	Motors	Motors - Synchronous Belts	employee	Existing	105.62	10	\$27.45	16%	36%	\$0.03	18.23	19.33	7th Power Plan
Industrial Machinery	Miscellaneous	Agriculture - Engine Block Timer	employee	Existing	2,243.81	3	\$27.68	0%	0%	\$0.00	0.00	0.00	Vermont TRM
Industrial Machinery	Motors	Agriculture - Live Stock Waterer	employee	Existing	1,199.48	10	\$663.36	0%	0%	\$0.07	0.00	0.00	Ontario Power TRM
Industrial Machinery	Process	Dairy - Milk Precoolers	employee	Existing	343.23	15	\$159.49	0%	0%	\$0.05	0.00	0.00	Ontario Power TRM
Industrial Machinery	Process	Clean Room: Change Filter Strategy	employee	Existing	186.46	15	\$1.38	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Industrial Machinery	Process	Clean Room: Chiller Optimize	employee	Existing	102.00	15	\$9.44	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Industrial Machinery	Process	Clean Room: Clean Room HVAC	employee	Existing	61.93	15	\$11.40	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Industrial Machinery	Process	Elec Chip Fab: Solidstate Chiller	employee	Existing	61.78	15	\$35.81	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Industrial Machinery	Process	Elec Chip Fab: Eliminate Exhaust	employee	Existing	23.31	15	\$4.95	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Industrial Machinery	Process	Elec Chip Fab: Exhaust Injector	employee	Existing	46.50	15	\$23.87	0%	0%	\$0.06	0.00	0.00	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Industrial Machinery	Process	Elec Chip Fab: Reduce Gas Pressure	employee	Existing	46.62	15	\$0.48	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Industrial Machinery	Motors	Panel: Hydraulic Press	employee	Existing	2,228.01	10	\$542.79	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Industrial Machinery	Motors	Wood: Replace Pneumatic Conveyor	employee	Existing	2,465.76	10	\$40.65	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Industrial Machinery	Process	Metal: New Arc Furnace	employee	Existing	1,580.75	10	\$165.94	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Industrial Machinery	Process	Paper: Premium Control Large Material	employee	Existing	258.25	10	\$129.71	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Industrial Machinery	Process	Paper: Efficient Pulp Screen	employee	Existing	207.67	10	\$42.73	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Industrial Machinery	Process	Kraft: Effluent Treatment System	employee	Existing	207.67	10	\$17.52	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Industrial Machinery	Motors	Kraft: Efficient Agitator	employee	Existing	4,073.71	10	\$405.05	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Industrial Machinery	Process	Mech Pulp: Premium Process	employee	Existing	2.32	5	\$0.30	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Industrial Machinery	Motors	Mech Pulp: Refiner Plate Improvement	employee	Existing	34.35	1	\$1.55	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Industrial Machinery	Cooling	Transformer - High Efficiency	employee	Existing	111.12	10	\$164.72	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Industrial Machinery	Heating	Transformer - High Efficiency	employee	Existing	676.58	10	\$164.72	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Industrial Machinery	Ventilation	Transformer - High Efficiency	employee	Existing	10.18	10	\$164.72	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Industrial Machinery	Interior Lighting	Transformer - High Efficiency	employee	Existing	63.84	10	\$164.72	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Industrial Machinery	Exterior Lighting	Transformer - High Efficiency	employee	Existing	13.81	10	\$164.72	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Industrial Machinery	Motors	Transformer - High Efficiency	employee	Existing	306.50	10	\$164.72	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Industrial Machinery	Process	Transformer - High Efficiency	employee	Existing	103.42	10	\$164.72	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Industrial Machinery	Miscellaneous	Transformer - High Efficiency	employee	Existing	84.92	10	\$164.72	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Industrial Machinery	Cooling	Strategic Energy Management	employee	Existing	312.04	3	\$1,011.63	0%	5%	\$0.08	0.57	0.62	AEG Research

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Industrial Machinery	Heating	Strategic Energy Management	employee	Existing	1,941.84	3	\$1,011.63	0%	5%	\$0.08	3.99	4.14	AEG Research
Industrial Machinery	Ventilation	Strategic Energy Management	employee	Existing	29.10	3	\$1,011.63	0%	5%	\$0.08	0.31	0.36	AEG Research
Industrial Machinery	Interior Lighting	Strategic Energy Management	employee	Existing	182.26	3	\$1,011.63	0%	5%	\$0.08	1.67	2.20	AEG Research
Industrial Machinery	Exterior Lighting	Strategic Energy Management	employee	Existing	39.62	3	\$1,011.63	0%	5%	\$0.08	0.37	0.49	AEG Research
Industrial Machinery	Motors	Strategic Energy Management	employee	Existing	878.46	3	\$1,011.63	0%	5%	\$0.08	8.68	9.32	AEG Research
Industrial Machinery	Process	Strategic Energy Management	employee	Existing	296.33	3	\$1,011.63	0%	5%	\$0.08	3.10	3.13	AEG Research
Industrial Machinery	Miscellaneous	Strategic Energy Management	employee	Existing	243.09	3	\$1,011.63	0%	5%	\$0.08	3.22	2.66	AEG Research
Industrial Machinery	Interior Lighting	Commissioning	employee	Existing	210.12	3	\$849.42	0%	0%	\$0.14	0.00	0.00	AEG Research
Industrial Machinery	Exterior Lighting	Commissioning	employee	Existing	45.67	3	\$849.42	0%	0%	\$0.14	0.00	0.00	AEG Research
Industrial Machinery	Motors	Commissioning	employee	Existing	1,012.59	3	\$849.42	0%	0%	\$0.14	0.00	0.00	AEG Research
Industrial Machinery	Process	Commissioning	employee	Existing	341.56	3	\$849.42	0%	0%	\$0.14	0.00	0.00	AEG Research
Industrial Machinery	Miscellaneous	Commissioning	employee	Existing	280.16	3	\$849.42	0%	0%	\$0.14	0.00	0.00	AEG Research
Industrial Machinery	Interior Lighting	Retrocommissioning	employee	Existing	212.80	3	\$539.23	5%	39%	\$0.09	13.48	17.46	AEG Research
Industrial Machinery	Exterior Lighting	Retrocommissioning	employee	Existing	46.02	3	\$539.23	5%	39%	\$0.09	2.96	3.90	AEG Research
Industrial Machinery	Motors	Retrocommissioning	employee	Existing	1,021.68	3	\$539.23	5%	39%	\$0.09	69.25	73.67	AEG Research
Industrial Machinery	Process	Retrocommissioning	employee	Existing	344.75	3	\$539.23	5%	39%	\$0.09	24.70	24.76	AEG Research
Industrial Machinery	Miscellaneous	Retrocommissioning	employee	Existing	283.08	3	\$539.23	5%	39%	\$0.09	25.73	21.02	AEG Research
Industrial Machinery	Motors	Municipal Sewage Treatment	employee	Existing	65.59	12	\$37.87	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Industrial Machinery	Motors	Municipal Water Supply Treatment	employee	Existing	0.00	12	\$0.00	0%	0%	\$0.00	0.00	0.00	7th Power Plan

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Industrial Machinery	Cooling	Insulation - Ceiling	sqft	New	0.11	45	\$1.28	15%	25%	\$0.16	0.90	0.92	Building Energy Simulation Tool
Industrial Machinery	Heating	Insulation - Ceiling	sqft	New	0.52	45	\$1.28	15%	25%	\$0.16	4.50	4.50	Building Energy Simulation Tool
Industrial Machinery	Ventilation	Insulation - Ceiling	sqft	New	0.01	45	\$1.28	15%	25%	\$0.16	0.54	0.59	Building Energy Simulation Tool
Industrial Machinery	Cooling	Insulation - Ducting	sqft	New	0.04	20	\$0.84	15%	25%	\$1.13	0.35	0.35	Building Energy Simulation Tool
Industrial Machinery	Heating	Insulation - Ducting	sqft	New	0.02	20	\$0.84	15%	25%	\$1.13	0.19	0.19	Building Energy Simulation Tool
Industrial Machinery	Ventilation	Insulation - Ducting	sqft	New	0.00	20	\$0.84	15%	25%	\$1.13	0.02	0.02	Building Energy Simulation Tool
Industrial Machinery	Cooling	Insulation - Wall Cavity	sqft	New	0.00	45	\$0.15	45%	50%	\$0.02	0.01	0.01	Building Energy Simulation Tool
Industrial Machinery	Heating	Insulation - Wall Cavity	sqft	New	0.71	45	\$0.15	45%	50%	\$0.02	3.06	3.06	Building Energy Simulation Tool
Industrial Machinery	Ventilation	Insulation - Wall Cavity	sqft	New	0.01	45	\$0.15	45%	50%	\$0.02	0.36	0.39	Building Energy Simulation Tool
Industrial Machinery	Cooling	HVAC - Duct Repair and Sealing	sqft	New	0.01	18	\$0.00	15%	25%	\$0.00	0.11	0.12	Building Energy Simulation Tool
Industrial Machinery	Heating	HVAC - Duct Repair and Sealing	sqft	New	0.05	18	\$0.00	15%	25%	\$0.00	0.42	0.43	Building Energy Simulation Tool
Industrial Machinery	Ventilation	HVAC - Duct Repair and Sealing	sqft	New	0.00	18	\$0.00	15%	25%	\$0.00	0.05	0.05	Building Energy Simulation Tool
Industrial Machinery	Cooling	Chiller - Chilled Water Reset	sqft	New	0.04	10	\$0.01	15%	45%	\$0.03	0.08	0.09	AEG-BEST
Industrial Machinery	Cooling	Chiller - Chilled Water Variable-Flow System	sqft	New	0.20	15	\$0.50	15%	60%	\$0.24	1.10	1.14	AEG-BEST
Industrial Machinery	Cooling	Chiller - Variable Speed Fans	sqft	New	0.07	15	\$0.03	15%	75%	\$0.04	0.55	0.56	New Jersey TRM
Industrial Machinery	Cooling	HVAC - Economizer	sqft	New	0.21	10	\$0.25	18%	30%	\$0.15	0.36	0.38	AEG-BEST
Industrial Machinery	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.25	15%	35%	\$12.70	0.06	0.07	7th Power Plan
Industrial Machinery	Cooling	Destratification Fans (HVLS)	sqft	New	0.14	15	\$0.63	15%	50%	\$0.05	2.70	2.79	AEG Research
Industrial Machinery	Heating	Destratification Fans (HVLS)	sqft	New	1.30	15	\$0.63	15%	50%	\$0.05	26.30	26.36	AEG Research

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Industrial Machinery	Cooling	RTU - Maintenance	sqft	New	0.07	3	\$0.07	15%	75%	\$0.29	0.09	0.10	AEG Research
Industrial Machinery	Cooling	Thermostat - WiFi/Interactive	sqft	New	0.26	5	\$0.66	5%	15%	\$0.09	0.35	0.36	7th Power Plan
Industrial Machinery	Heating	Thermostat - WiFi/Interactive	sqft	New	1.23	5	\$0.66	5%	15%	\$0.09	1.76	1.77	7th Power Plan
Industrial Machinery	Ventilation	Thermostat - WiFi/Interactive	sqft	New	0.02	5	\$0.66	5%	15%	\$0.09	0.21	0.25	7th Power Plan
Industrial Machinery	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.43	15	\$0.35	22%	41%	\$0.05	18.47	21.58	7th Power Plan
Industrial Machinery	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.59	15	\$0.58	22%	41%	\$0.06	25.16	29.62	7th Power Plan
Industrial Machinery	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	New	0.02	15	\$0.00	1%	2%	\$0.01	0.04	0.05	7th Power Plan
Industrial Machinery	Interior Lighting	Interior Lighting - Timeclocks and Timers	sqft	New	0.00	8	\$0.00	7%	7%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Industrial Machinery	Interior Lighting	Interior Lighting - Skylights	sqft	New	0.00	15	\$1.01	18%	24%	\$0.00	0.00	0.00	AEG Research
Industrial Machinery	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	sqft	New	0.03	16	\$1.81	5%	40%	\$4.11	1.61	2.03	7th Power Plan
Industrial Machinery	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	New	0.03	11	\$0.00	15%	50%	\$0.01	1.10	1.42	Illinois TRM
Industrial Machinery	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	sqft	New	0.04	8	\$0.03	15%	25%	\$0.08	0.89	1.23	7th Power Plan
Industrial Machinery	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	New	0.02	8	\$0.02	44%	60%	\$0.08	0.76	1.05	Pacific Gas and Electric Research
Industrial Machinery	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	New	0.02	7	\$1.19	15%	30%	\$4.56	0.74	1.03	AEG Research
Industrial Machinery	Process	Process - Conductivity Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Industrial Machinery	Process	Process - Timers and Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Industrial Machinery	Motors	Process - Timers and Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Industrial Machinery	Process	Refrigeration - Floating Head Pressure	employee	New	51.55	15	\$35.42	20%	50%	\$0.08	0.78	0.78	RTF Workbook
Industrial Machinery	Process	Refrigeration - System Optimization	employee	New	82.58	15	\$12.39	20%	50%	\$0.02	1.25	1.25	AEG Research

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Industrial Machinery	Motors	Pumping System - Equipment Upgrade	employee	New	519.29	10	\$75.32	9%	38%	\$0.05	4.75	4.73	7th Power Plan
Industrial Machinery	Motors	Pumping System - System Optimization	employee	New	387.63	12	\$114.79	9%	38%	\$0.04	5.61	5.58	UNIDO Study on Industrial Energy Efficiency
Industrial Machinery	Motors	Pumping System - Variable Speed Drive	employee	New	385.65	10	\$119.43	9%	38%	\$0.04	4.84	4.81	UNIDO Study on Industrial Energy Efficiency
Industrial Machinery	Motors	Fan System - Equipment Upgrade	employee	New	668.40	10	\$66.11	9%	38%	\$0.05	8.36	8.32	UNIDO Study on Industrial Energy Efficiency
Industrial Machinery	Motors	Fan System - Flow Optimization	employee	New	787.91	10	\$109.39	9%	38%	\$0.02	9.86	9.81	UNIDO Study on Industrial Energy Efficiency
Industrial Machinery	Motors	Fan System - Variable Speed Drive	employee	New	1,186.05	10	\$550.42	9%	38%	\$0.06	14.91	14.79	UNIDO Study on Industrial Energy Efficiency
Industrial Machinery	Motors	Compressed Air - Equipment Upgrade	employee	New	1,838.13	10	\$133.75	17%	50%	\$0.04	19.49	19.49	7th Power Plan
Industrial Machinery	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	New	0.00	15	\$0.00	16%	38%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Industrial Machinery	Motors	Compressed Air - Refrigerated Cycling Dryers	employee	New	0.00	10	\$0.00	16%	30%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Industrial Machinery	Motors	Compressed Air - System Controls	employee	New	409.07	10	\$95.63	9%	38%	\$0.03	3.74	3.73	UNIDO Study on Industrial Energy Efficiency
Industrial Machinery	Motors	Compressed Air - Leak Management Program	employee	New	1,042.51	10	\$96.13	18%	75%	\$0.04	19.00	18.97	7th Power Plan
Industrial Machinery	Motors	Compressed Air - Variable Speed Drive	employee	New	759.87	15	\$586.32	26%	45%	\$0.08	7.41	7.36	UNIDO Study on Industrial Energy Efficiency
Industrial Machinery	Motors	Compressed Air - Low Pressure-Drop Filters	employee	New	25.33	10	\$9.04	17%	50%	\$0.05	0.27	0.27	Illinois TRM
Industrial Machinery	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	New	153.74	10	\$29.32	17%	50%	\$0.03	1.64	1.64	UNIDO Study on Industrial Energy Efficiency
Industrial Machinery	Motors	Compressed Air - Outside Air Intake	employee	New	0.00	20	\$0.00	17%	50%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Industrial Machinery	Motors	Compressed Air - Receiver Capacity Addition	employee	New	152.97	15	\$80.62	17%	50%	\$0.06	2.61	2.59	UNIDO Study on Industrial Energy Efficiency
Industrial Machinery	Motors	Material Handling - Variable Speed Drive	employee	New	1,542.54	10	\$543.12	25%	45%	\$0.05	13.59	13.49	7th Power Plan
Industrial Machinery	Motors	Motors - Green Rewind (<100 HP)	employee	New	48.89	10	\$20.79	10%	50%	\$0.06	3.45	3.42	7th Power Plan
Industrial Machinery	Motors	Motors - Green Rewind (100 HP+)	employee	New	27.40	10	\$7.38	6%	25%	\$0.04	0.92	0.91	7th Power Plan

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Industrial Machinery	Motors	Switch from Belt Drive to Direct Drive	employee	New	413.90	12	\$91.25	16%	25%	\$0.03	7.99	7.94	2015-mdi-irp-report---volume-iii.pdf
Industrial Machinery	Motors	Motors - Synchronous Belts	employee	New	109.72	10	\$27.45	16%	36%	\$0.03	2.81	2.80	7th Power Plan
Industrial Machinery	Miscellaneous	Agriculture - Engine Block Timer	employee	New	2,243.81	3	\$27.68	0%	0%	\$0.00	0.00	0.00	Vermont TRM
Industrial Machinery	Motors	Agriculture - Live Stock Waterer	employee	New	1,268.20	10	\$663.36	0%	0%	\$0.07	0.00	0.00	Ontario Power TRM
Industrial Machinery	Process	Dairy - Milk Precoolers	employee	New	343.69	15	\$159.49	0%	0%	\$0.05	0.00	0.00	Ontario Power TRM
Industrial Machinery	Process	Clean Room: Change Filter Strategy	employee	New	186.46	15	\$1.38	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Industrial Machinery	Process	Clean Room: Chiller Optimize	employee	New	102.00	15	\$9.44	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Industrial Machinery	Process	Clean Room: Clean Room HVAC	employee	New	61.86	15	\$11.40	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Industrial Machinery	Process	Elec Chip Fab: Solidstate Chiller	employee	New	61.86	15	\$35.81	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Industrial Machinery	Process	Elec Chip Fab: Eliminate Exhaust	employee	New	23.28	15	\$4.95	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Industrial Machinery	Process	Elec Chip Fab: Exhaust Injector	employee	New	46.56	15	\$23.87	0%	0%	\$0.06	0.00	0.00	7th Power Plan
Industrial Machinery	Process	Elec Chip Fab: Reduce Gas Pressure	employee	New	46.62	15	\$0.48	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Industrial Machinery	Motors	Panel: Hydraulic Press	employee	New	2,318.00	10	\$542.79	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Industrial Machinery	Motors	Wood: Replace Pneumatic Conveyor	employee	New	2,465.76	10	\$40.65	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Industrial Machinery	Process	Metal: New Arc Furnace	employee	New	1,579.00	10	\$165.94	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Industrial Machinery	Process	Paper: Premium Control Large Material	employee	New	258.81	10	\$129.71	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Industrial Machinery	Process	Paper: Efficient Pulp Screen	employee	New	207.44	10	\$42.73	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Industrial Machinery	Process	Kraft: Effluent Treatment System	employee	New	207.44	10	\$17.52	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Industrial Machinery	Motors	Kraft: Efficient Agitator	employee	New	4,177.98	10	\$405.05	0%	0%	\$0.01	0.00	0.00	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Industrial Machinery	Process	Mech Pulp: Premium Process	employee	New	2.32	5	\$0.30	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Industrial Machinery	Motors	Mech Pulp: Refiner Plate Improvement	employee	New	36.32	1	\$1.55	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Industrial Machinery	Cooling	Transformer - High Efficiency	employee	New	99.17	10	\$158.85	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Industrial Machinery	Heating	Transformer - High Efficiency	employee	New	646.55	10	\$158.85	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Industrial Machinery	Ventilation	Transformer - High Efficiency	employee	New	5.76	10	\$158.85	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Industrial Machinery	Interior Lighting	Transformer - High Efficiency	employee	New	48.50	10	\$158.85	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Industrial Machinery	Exterior Lighting	Transformer - High Efficiency	employee	New	10.02	10	\$158.85	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Industrial Machinery	Motors	Transformer - High Efficiency	employee	New	324.06	10	\$158.85	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Industrial Machinery	Process	Transformer - High Efficiency	employee	New	103.65	10	\$158.85	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Industrial Machinery	Miscellaneous	Transformer - High Efficiency	employee	New	80.44	10	\$158.85	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Industrial Machinery	Cooling	Strategic Energy Management	employee	New	282.52	3	\$975.63	0%	5%	\$0.08	0.01	0.01	AEG Research
Industrial Machinery	Heating	Strategic Energy Management	employee	New	1,863.25	3	\$975.63	0%	5%	\$0.08	0.07	0.07	AEG Research
Industrial Machinery	Ventilation	Strategic Energy Management	employee	New	16.57	3	\$975.63	0%	5%	\$0.08	0.00	0.01	AEG Research
Industrial Machinery	Interior Lighting	Strategic Energy Management	employee	New	139.78	3	\$975.63	0%	5%	\$0.08	0.03	0.04	AEG Research
Industrial Machinery	Exterior Lighting	Strategic Energy Management	employee	New	28.96	3	\$975.63	0%	5%	\$0.08	0.01	0.01	AEG Research
Industrial Machinery	Motors	Strategic Energy Management	employee	New	936.18	3	\$975.63	0%	5%	\$0.08	0.17	0.17	AEG Research
Industrial Machinery	Process	Strategic Energy Management	employee	New	299.43	3	\$975.63	0%	5%	\$0.08	0.05	0.05	AEG Research
Industrial Machinery	Miscellaneous	Strategic Energy Management	employee	New	232.39	3	\$975.63	0%	5%	\$0.08	0.05	0.04	AEG Research
Industrial Machinery	Interior Lighting	Commissioning	employee	New	161.25	3	\$862.12	5%	39%	\$0.14	0.22	0.32	AEG Research

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Industrial Machinery	Exterior Lighting	Commissioning	employee	New	33.41	3	\$862.12	5%	39%	\$0.14	0.05	0.07	AEG Research
Industrial Machinery	Motors	Commissioning	employee	New	1,079.99	3	\$862.12	5%	39%	\$0.14	1.35	1.36	AEG Research
Industrial Machinery	Process	Commissioning	employee	New	345.43	3	\$862.12	5%	39%	\$0.14	0.43	0.43	AEG Research
Industrial Machinery	Miscellaneous	Commissioning	employee	New	268.08	3	\$862.12	5%	39%	\$0.14	0.41	0.28	AEG Research
Industrial Machinery	Interior Lighting	Retrocommissioning	employee	New	161.68	3	\$547.29	0%	0%	\$0.09	0.00	0.00	AEG Research
Industrial Machinery	Exterior Lighting	Retrocommissioning	employee	New	33.41	3	\$547.29	0%	0%	\$0.09	0.00	0.00	AEG Research
Industrial Machinery	Motors	Retrocommissioning	employee	New	1,080.20	3	\$547.29	0%	0%	\$0.09	0.00	0.00	AEG Research
Industrial Machinery	Process	Retrocommissioning	employee	New	345.50	3	\$547.29	0%	0%	\$0.09	0.00	0.00	AEG Research
Industrial Machinery	Miscellaneous	Retrocommissioning	employee	New	268.14	3	\$547.29	0%	0%	\$0.09	0.00	0.00	AEG Research
Industrial Machinery	Motors	Municipal Sewage Treatment	employee	New	68.92	12	\$37.87	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Industrial Machinery	Motors	Municipal Water Supply Treatment	employee	New	0.00	12	\$0.00	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Lumber Wood Products	Cooling	Insulation - Ceiling	sqft	Existing	0.12	45	\$1.28	15%	25%	\$0.15	0.30	0.32	Building Energy Simulation Tool
Lumber Wood Products	Heating	Insulation - Ceiling	sqft	Existing	0.55	45	\$1.28	15%	25%	\$0.15	1.49	1.53	Building Energy Simulation Tool
Lumber Wood Products	Ventilation	Insulation - Ceiling	sqft	Existing	0.02	45	\$1.28	15%	25%	\$0.15	0.21	0.24	Building Energy Simulation Tool
Lumber Wood Products	Cooling	Insulation - Ducting	sqft	Existing	0.05	20	\$0.84	15%	25%	\$1.05	0.11	0.12	Building Energy Simulation Tool
Lumber Wood Products	Heating	Insulation - Ducting	sqft	Existing	0.02	20	\$0.84	15%	25%	\$1.05	0.06	0.06	Building Energy Simulation Tool
Lumber Wood Products	Ventilation	Insulation - Ducting	sqft	Existing	0.00	20	\$0.84	15%	25%	\$1.05	0.01	0.01	Building Energy Simulation Tool
Lumber Wood Products	Cooling	Insulation - Wall Cavity	sqft	Existing	0.00	45	\$0.15	45%	50%	\$0.02	0.00	0.00	Building Energy Simulation Tool
Lumber Wood Products	Heating	Insulation - Wall Cavity	sqft	Existing	0.76	45	\$0.15	45%	50%	\$0.02	1.06	1.06	Building Energy Simulation Tool

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Lumber Wood Products	Ventilation	Insulation - Wall Cavity	sqft	Existing	0.02	45	\$0.15	45%	50%	\$0.02	0.14	0.16	Building Energy Simulation Tool
Lumber Wood Products	Cooling	HVAC - Duct Repair and Sealing	sqft	Existing	0.02	18	\$0.00	15%	25%	\$0.00	0.04	0.04	Building Energy Simulation Tool
Lumber Wood Products	Heating	HVAC - Duct Repair and Sealing	sqft	Existing	0.05	18	\$0.00	15%	25%	\$0.00	0.15	0.15	Building Energy Simulation Tool
Lumber Wood Products	Ventilation	HVAC - Duct Repair and Sealing	sqft	Existing	0.00	18	\$0.00	15%	25%	\$0.00	0.02	0.02	Building Energy Simulation Tool
Lumber Wood Products	Cooling	Chiller - Chilled Water Reset	sqft	Existing	0.05	10	\$0.01	15%	45%	\$0.03	0.10	0.10	AEG-BEST
Lumber Wood Products	Cooling	Chiller - Chilled Water Variable-Flow System	sqft	Existing	0.25	15	\$0.50	15%	60%	\$0.20	0.77	0.85	AEG-BEST
Lumber Wood Products	Cooling	Chiller - Variable Speed Fans	sqft	Existing	0.10	15	\$0.03	15%	75%	\$0.04	0.40	0.42	New Jersey TRM
Lumber Wood Products	Cooling	HVAC - Economizer	sqft	Existing	0.23	10	\$0.25	18%	30%	\$0.14	0.37	0.41	AEG-BEST
Lumber Wood Products	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.25	15%	35%	\$10.61	0.04	0.05	7th Power Plan
Lumber Wood Products	Cooling	Destratification Fans (HVLS)	sqft	Existing	0.16	15	\$0.63	15%	50%	\$0.05	1.69	1.80	AEG Research
Lumber Wood Products	Heating	Destratification Fans (HVLS)	sqft	Existing	1.39	15	\$0.63	15%	50%	\$0.05	16.32	16.42	AEG Research
Lumber Wood Products	Cooling	RTU - Maintenance	sqft	Existing	0.08	3	\$0.07	15%	75%	\$0.28	0.70	0.79	AEG Research
Lumber Wood Products	Cooling	Thermostat - WiFi/Interactive	sqft	Existing	0.29	5	\$0.66	5%	15%	\$0.09	0.69	0.75	7th Power Plan
Lumber Wood Products	Heating	Thermostat - WiFi/Interactive	sqft	Existing	1.29	5	\$0.66	5%	15%	\$0.09	3.50	3.60	7th Power Plan
Lumber Wood Products	Ventilation	Thermostat - WiFi/Interactive	sqft	Existing	0.04	5	\$0.66	5%	15%	\$0.09	0.50	0.58	7th Power Plan
Lumber Wood Products	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.55	15	\$0.35	7%	33%	\$0.05	11.92	14.37	7th Power Plan
Lumber Wood Products	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.76	15	\$0.58	7%	33%	\$0.06	16.01	19.75	7th Power Plan
Lumber Wood Products	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	Existing	0.02	15	\$0.00	1%	2%	\$0.01	0.07	0.10	7th Power Plan
Lumber Wood Products	Interior Lighting	Interior Lighting - Timerclocks and Timers	sqft	Existing	0.00	8	\$0.00	7%	7%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx

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Lumber Wood Products	Interior Lighting	Interior Lighting - Skylights	sqft	Existing	0.00	15	\$1.01	15%	23%	\$0.00	0.00	0.00	AEG Research
Lumber Wood Products	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	sqft	Existing	0.03	16	\$1.81	5%	40%	\$4.11	2.24	3.15	7th Power Plan
Lumber Wood Products	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	Existing	0.04	11	\$0.00	15%	50%	\$0.01	2.46	3.18	Illinois TRM
Lumber Wood Products	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	sqft	Existing	0.05	8	\$0.03	15%	25%	\$0.08	3.01	4.10	7th Power Plan
Lumber Wood Products	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	Existing	0.03	8	\$0.02	33%	60%	\$0.08	4.19	5.86	Pacific Gas and Electric Research
Lumber Wood Products	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	Existing	0.03	7	\$1.19	15%	30%	\$4.54	2.62	3.87	AEG Research
Lumber Wood Products	Process	Process - Conductivity Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Process	Process - Timers and Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Motors	Process - Timers and Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Process	Refrigeration - Floating Head Pressure	employee	Existing	49.30	15	\$47.95	20%	50%	\$0.11	1.10	1.10	RTF Workbook
Lumber Wood Products	Process	Refrigeration - System Optimization	employee	Existing	79.00	15	\$33.76	20%	50%	\$0.05	1.76	1.76	AEG Research
Lumber Wood Products	Motors	Pumping System - Equipment Upgrade	employee	Existing	1,941.25	10	\$302.58	9%	38%	\$0.05	38.97	42.78	7th Power Plan
Lumber Wood Products	Motors	Pumping System - System Optimization	employee	Existing	1,441.55	12	\$461.13	9%	38%	\$0.04	28.28	31.01	UNIDO Study on Industrial Energy Efficiency
Lumber Wood Products	Motors	Pumping System - Variable Speed Drive	employee	Existing	1,430.15	10	\$479.75	9%	38%	\$0.04	27.92	30.82	UNIDO Study on Industrial Energy Efficiency
Lumber Wood Products	Motors	Fan System - Equipment Upgrade	employee	Existing	790.08	10	\$84.09	9%	38%	\$0.05	15.64	16.94	UNIDO Study on Industrial Energy Efficiency
Lumber Wood Products	Motors	Fan System - Flow Optimization	employee	Existing	931.93	10	\$139.13	9%	38%	\$0.02	18.42	19.99	UNIDO Study on Industrial Energy Efficiency
Lumber Wood Products	Motors	Fan System - Variable Speed Drive	employee	Existing	1,373.61	10	\$700.09	9%	38%	\$0.06	26.40	29.76	UNIDO Study on Industrial Energy Efficiency
Lumber Wood Products	Motors	Compressed Air - Equipment Upgrade	employee	Existing	1,304.10	10	\$102.80	17%	50%	\$0.04	30.76	33.39	7th Power Plan

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Lumber Wood Products	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	Existing	0.00	15	\$0.00	16%	38%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Lumber Wood Products	Motors	Compressed Air - Refrigerated Cycling Dryers	employee	Existing	0.00	10	\$0.00	16%	30%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Lumber Wood Products	Motors	Compressed Air - System Controls	employee	Existing	290.49	10	\$73.50	9%	38%	\$0.03	5.78	6.43	UNIDO Study on Industrial Energy Efficiency
Lumber Wood Products	Motors	Compressed Air - Leak Management Program	employee	Existing	742.17	10	\$73.89	18%	75%	\$0.04	29.94	32.62	7th Power Plan
Lumber Wood Products	Motors	Compressed Air - Variable Speed Drive	employee	Existing	531.80	15	\$450.65	26%	45%	\$0.08	6.94	7.92	UNIDO Study on Industrial Energy Efficiency
Lumber Wood Products	Motors	Compressed Air - Low Pressure-Drop Filters	employee	Existing	17.73	10	\$6.95	17%	50%	\$0.05	0.41	0.46	Illinois TRM
Lumber Wood Products	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	Existing	109.36	10	\$22.53	17%	50%	\$0.03	2.55	2.82	UNIDO Study on Industrial Energy Efficiency
Lumber Wood Products	Motors	Compressed Air - Outside Air Intake	employee	Existing	0.00	20	\$0.00	17%	50%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Lumber Wood Products	Motors	Compressed Air - Receiver Capacity Addition	employee	Existing	108.50	15	\$61.96	17%	50%	\$0.06	2.51	2.81	UNIDO Study on Industrial Energy Efficiency
Lumber Wood Products	Motors	Material Handling - Variable Speed Drive	employee	Existing	9,075.77	10	\$3,468.62	25%	45%	\$0.05	124.03	137.37	7th Power Plan
Lumber Wood Products	Motors	Motors - Green Rewind (<100 HP)	employee	Existing	122.64	10	\$57.21	10%	50%	\$0.06	16.56	18.64	7th Power Plan
Lumber Wood Products	Motors	Motors - Green Rewind (100 HP+)	employee	Existing	69.61	10	\$20.31	6%	25%	\$0.04	4.53	5.00	7th Power Plan
Lumber Wood Products	Motors	Switch from Belt Drive to Direct Drive	employee	Existing	1,056.47	12	\$251.13	16%	25%	\$0.03	34.65	37.83	2015-mdu-irp-report---volume-iii.pdf
Lumber Wood Products	Motors	Motors - Synchronous Belts	employee	Existing	279.19	10	\$75.55	16%	36%	\$0.03	19.44	21.64	7th Power Plan
Lumber Wood Products	Miscellaneous	Agriculture - Engine Block Timer	employee	Existing	2,850.29	3	\$35.16	0%	0%	\$0.00	0.00	0.00	Vermont TRM
Lumber Wood Products	Motors	Agriculture - Live Stock Waterer	employee	Existing	4,644.19	10	\$2,664.76	0%	0%	\$0.07	0.00	0.00	Ontario Power TRM
Lumber Wood Products	Process	Dairy - Milk Precoolers	employee	Existing	328.69	15	\$152.57	0%	0%	\$0.05	0.00	0.00	Ontario Power TRM
Lumber Wood Products	Process	Clean Room: Change Filter Strategy	employee	Existing	306.08	15	\$2.26	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Lumber Wood Products	Process	Clean Room: Chiller Optimize	employee	Existing	97.58	15	\$9.03	0%	0%	\$0.01	0.00	0.00	7th Power Plan

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Lumber Wood Products	Process	Clean Room: Clean Room HVAC	employee	Existing	59.25	15	\$10.91	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Lumber Wood Products	Process	Elec Chip Fab: Solidstate Chiller	employee	Existing	59.16	15	\$34.25	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Lumber Wood Products	Process	Elec Chip Fab: Eliminate Exhaust	employee	Existing	38.26	15	\$8.12	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Lumber Wood Products	Process	Elec Chip Fab: Exhaust Injector	employee	Existing	76.41	15	\$39.18	0%	0%	\$0.06	0.00	0.00	7th Power Plan
Lumber Wood Products	Process	Elec Chip Fab: Reduce Gas Pressure	employee	Existing	76.52	15	\$0.79	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Lumber Wood Products	Motors	Panel: Hydraulic Press	employee	Existing	13,677.53	10	\$3,466.54	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Lumber Wood Products	Motors	Wood: Replace Pneumatic Conveyor	employee	Existing	15,747.57	10	\$259.61	15%	75%	\$0.00	0.00	694.69	7th Power Plan
Lumber Wood Products	Process	Metal: New Arc Furnace	employee	Existing	3,992.91	10	\$419.15	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Lumber Wood Products	Process	Paper: Premium Control Large Material	employee	Existing	430.00	10	\$215.61	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Lumber Wood Products	Process	Paper: Efficient Pulp Screen	employee	Existing	345.21	10	\$71.02	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Lumber Wood Products	Process	Kraft: Effluent Treatment System	employee	Existing	345.21	10	\$29.12	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Lumber Wood Products	Motors	Kraft: Efficient Agitator	employee	Existing	24,812.60	10	\$2,586.83	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Lumber Wood Products	Process	Mech Pulp: Premium Process	employee	Existing	3.86	5	\$0.50	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Lumber Wood Products	Motors	Mech Pulp: Refiner Plate Improvement	employee	Existing	211.47	1	\$9.87	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Lumber Wood Products	Cooling	Transformer - High Efficiency	employee	Existing	46.28	10	\$211.33	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Lumber Wood Products	Heating	Transformer - High Efficiency	employee	Existing	281.81	10	\$211.33	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Lumber Wood Products	Ventilation	Transformer - High Efficiency	employee	Existing	4.24	10	\$211.33	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Lumber Wood Products	Interior Lighting	Transformer - High Efficiency	employee	Existing	63.32	10	\$211.33	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Lumber Wood Products	Exterior Lighting	Transformer - High Efficiency	employee	Existing	13.69	10	\$211.33	15%	15%	\$0.02	0.00	0.00	7th Power Plan

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Lumber Wood Products	Motors	Transformer - High Efficiency	employee	Existing	1,016.30	10	\$211.33	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Lumber Wood Products	Process	Transformer - High Efficiency	employee	Existing	172.21	10	\$211.33	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Lumber Wood Products	Miscellaneous	Transformer - High Efficiency	employee	Existing	107.88	10	\$211.33	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Lumber Wood Products	Cooling	Strategic Energy Management	employee	Existing	129.97	3	\$1,297.91	0%	24%	\$0.08	0.38	0.41	AEG Research
Lumber Wood Products	Heating	Strategic Energy Management	employee	Existing	808.83	3	\$1,297.91	0%	24%	\$0.08	2.66	2.76	AEG Research
Lumber Wood Products	Ventilation	Strategic Energy Management	employee	Existing	12.12	3	\$1,297.91	0%	24%	\$0.08	0.21	0.24	AEG Research
Lumber Wood Products	Interior Lighting	Strategic Energy Management	employee	Existing	181.11	3	\$1,297.91	0%	24%	\$0.08	2.67	3.49	AEG Research
Lumber Wood Products	Exterior Lighting	Strategic Energy Management	employee	Existing	39.37	3	\$1,297.91	0%	24%	\$0.08	0.59	0.78	AEG Research
Lumber Wood Products	Motors	Strategic Energy Management	employee	Existing	2,919.30	3	\$1,297.91	0%	24%	\$0.08	44.82	49.56	AEG Research
Lumber Wood Products	Process	Strategic Energy Management	employee	Existing	494.49	3	\$1,297.91	0%	24%	\$0.08	8.29	8.36	AEG Research
Lumber Wood Products	Miscellaneous	Strategic Energy Management	employee	Existing	309.55	3	\$1,297.91	0%	24%	\$0.08	6.58	5.41	AEG Research
Lumber Wood Products	Interior Lighting	Commissioning	employee	Existing	208.11	3	\$2,225.90	0%	0%	\$0.15	0.00	0.00	AEG Research
Lumber Wood Products	Exterior Lighting	Commissioning	employee	Existing	45.24	3	\$2,225.90	0%	0%	\$0.15	0.00	0.00	AEG Research
Lumber Wood Products	Motors	Commissioning	employee	Existing	3,352.54	3	\$2,225.90	0%	0%	\$0.15	0.00	0.00	AEG Research
Lumber Wood Products	Process	Commissioning	employee	Existing	567.70	3	\$2,225.90	0%	0%	\$0.15	0.00	0.00	AEG Research
Lumber Wood Products	Miscellaneous	Commissioning	employee	Existing	355.18	3	\$2,225.90	0%	0%	\$0.15	0.00	0.00	AEG Research
Lumber Wood Products	Interior Lighting	Retrocommissioning	employee	Existing	211.08	3	\$1,413.05	10%	35%	\$0.10	3.28	4.24	AEG Research
Lumber Wood Products	Exterior Lighting	Retrocommissioning	employee	Existing	45.65	3	\$1,413.05	10%	35%	\$0.10	0.72	0.95	AEG Research
Lumber Wood Products	Motors	Retrocommissioning	employee	Existing	3,387.68	3	\$1,413.05	10%	35%	\$0.10	54.54	59.90	AEG Research

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Lumber Wood Products	Process	Retrocommissioning	employee	Existing	574.03	3	\$1,413.05	10%	35%	\$0.10	10.09	10.10	AEG Research
Lumber Wood Products	Miscellaneous	Retrocommissioning	employee	Existing	359.60	3	\$1,413.05	10%	35%	\$0.10	8.01	6.54	AEG Research
Lumber Wood Products	Motors	Municipal Sewage Treatment	employee	Existing	252.38	12	\$152.11	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Lumber Wood Products	Motors	Municipal Water Supply Treatment	employee	Existing	0.00	12	\$0.00	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Lumber Wood Products	Cooling	Insulation - Ceiling	sqft	New	0.11	45	\$1.28	15%	25%	\$0.16	0.13	0.13	Building Energy Simulation Tool
Lumber Wood Products	Heating	Insulation - Ceiling	sqft	New	0.52	45	\$1.28	15%	25%	\$0.16	0.63	0.63	Building Energy Simulation Tool
Lumber Wood Products	Ventilation	Insulation - Ceiling	sqft	New	0.01	45	\$1.28	15%	25%	\$0.16	0.07	0.08	Building Energy Simulation Tool
Lumber Wood Products	Cooling	Insulation - Ducting	sqft	New	0.04	20	\$0.84	15%	25%	\$1.13	0.05	0.05	Building Energy Simulation Tool
Lumber Wood Products	Heating	Insulation - Ducting	sqft	New	0.02	20	\$0.84	15%	25%	\$1.13	0.03	0.03	Building Energy Simulation Tool
Lumber Wood Products	Ventilation	Insulation - Ducting	sqft	New	0.00	20	\$0.84	15%	25%	\$1.13	0.00	0.00	Building Energy Simulation Tool
Lumber Wood Products	Cooling	Insulation - Wall Cavity	sqft	New	0.00	45	\$0.15	45%	50%	\$0.02	0.00	0.00	Building Energy Simulation Tool
Lumber Wood Products	Heating	Insulation - Wall Cavity	sqft	New	0.71	45	\$0.15	45%	50%	\$0.02	0.42	0.43	Building Energy Simulation Tool
Lumber Wood Products	Ventilation	Insulation - Wall Cavity	sqft	New	0.01	45	\$0.15	45%	50%	\$0.02	0.05	0.05	Building Energy Simulation Tool
Lumber Wood Products	Cooling	HVAC - Duct Repair and Sealing	sqft	New	0.01	18	\$0.00	15%	25%	\$0.00	0.02	0.02	Building Energy Simulation Tool
Lumber Wood Products	Heating	HVAC - Duct Repair and Sealing	sqft	New	0.05	18	\$0.00	15%	25%	\$0.00	0.06	0.06	Building Energy Simulation Tool
Lumber Wood Products	Ventilation	HVAC - Duct Repair and Sealing	sqft	New	0.00	18	\$0.00	15%	25%	\$0.00	0.01	0.01	Building Energy Simulation Tool
Lumber Wood Products	Cooling	Chiller - Chilled Water Reset	sqft	New	0.04	10	\$0.01	15%	45%	\$0.03	0.01	0.01	AEG-BEST
Lumber Wood Products	Cooling	Chiller - Chilled Water Variable-Flow System	sqft	New	0.20	15	\$0.50	15%	60%	\$0.24	0.15	0.16	AEG-BEST
Lumber Wood Products	Cooling	Chiller - Variable Speed Fans	sqft	New	0.07	15	\$0.03	15%	75%	\$0.04	0.08	0.08	New Jersey TRM

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Lumber Wood Products	Cooling	HVAC - Economizer	sqft	New	0.20	10	\$0.25	18%	30%	\$0.15	0.05	0.05	AEG-BEST
Lumber Wood Products	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.25	15%	35%	\$12.70	0.01	0.01	7th Power Plan
Lumber Wood Products	Cooling	Destratification Fans (HVLS)	sqft	New	0.14	15	\$0.63	15%	50%	\$0.05	0.38	0.39	AEG Research
Lumber Wood Products	Heating	Destratification Fans (HVLS)	sqft	New	1.30	15	\$0.63	15%	50%	\$0.05	3.65	3.66	AEG Research
Lumber Wood Products	Cooling	RTU - Maintenance	sqft	New	0.07	3	\$0.07	15%	75%	\$0.29	0.01	0.01	AEG Research
Lumber Wood Products	Cooling	Thermostat - WiFi/Interactive	sqft	New	0.26	5	\$0.66	5%	15%	\$0.09	0.05	0.05	7th Power Plan
Lumber Wood Products	Heating	Thermostat - WiFi/Interactive	sqft	New	1.23	5	\$0.66	5%	15%	\$0.09	0.24	0.25	7th Power Plan
Lumber Wood Products	Ventilation	Thermostat - WiFi/Interactive	sqft	New	0.02	5	\$0.66	5%	15%	\$0.09	0.03	0.03	7th Power Plan
Lumber Wood Products	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.42	15	\$0.35	22%	41%	\$0.05	6.11	7.13	7th Power Plan
Lumber Wood Products	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.58	15	\$0.58	22%	41%	\$0.06	8.32	9.79	7th Power Plan
Lumber Wood Products	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	New	0.02	15	\$0.00	1%	2%	\$0.01	0.01	0.02	7th Power Plan
Lumber Wood Products	Interior Lighting	Interior Lighting - Timeclocks and Timers	sqft	New	0.00	8	\$0.00	7%	7%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Lumber Wood Products	Interior Lighting	Interior Lighting - Skylights	sqft	New	0.00	15	\$1.01	18%	24%	\$0.00	0.00	0.00	AEG Research
Lumber Wood Products	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	sqft	New	0.03	16	\$1.81	5%	40%	\$4.11	0.53	0.67	7th Power Plan
Lumber Wood Products	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	New	0.03	11	\$0.00	15%	50%	\$0.01	0.36	0.47	Illinois TRM
Lumber Wood Products	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	sqft	New	0.04	8	\$0.03	15%	25%	\$0.08	0.29	0.41	7th Power Plan
Lumber Wood Products	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	New	0.02	8	\$0.02	44%	60%	\$0.08	0.25	0.35	Pacific Gas and Electric Research
Lumber Wood Products	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	New	0.02	7	\$1.19	15%	30%	\$4.56	0.24	0.34	AEG Research
Lumber Wood Products	Process	Process - Conductivity Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A

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Lumber Wood Products	Process	Process - Timers and Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Motors	Process - Timers and Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Process	Refrigeration - Floating Head Pressure	employee	New	49.34	15	\$33.89	20%	50%	\$0.08	0.25	0.25	RTF Workbook
Lumber Wood Products	Process	Refrigeration - System Optimization	employee	New	79.00	15	\$11.85	20%	50%	\$0.02	0.40	0.40	AEG Research
Lumber Wood Products	Motors	Pumping System - Equipment Upgrade	employee	New	2,040.82	10	\$302.58	9%	38%	\$0.05	6.23	6.24	7th Power Plan
Lumber Wood Products	Motors	Pumping System - System Optimization	employee	New	1,523.73	12	\$461.13	9%	38%	\$0.04	7.37	7.31	UNIDO Study on Industrial Energy Efficiency
Lumber Wood Products	Motors	Pumping System - Variable Speed Drive	employee	New	1,518.13	10	\$479.75	9%	38%	\$0.04	6.36	6.31	UNIDO Study on Industrial Energy Efficiency
Lumber Wood Products	Motors	Fan System - Equipment Upgrade	employee	New	828.80	10	\$84.09	9%	38%	\$0.05	3.47	3.45	UNIDO Study on Industrial Energy Efficiency
Lumber Wood Products	Motors	Fan System - Flow Optimization	employee	New	978.57	10	\$139.13	9%	38%	\$0.02	4.09	4.07	UNIDO Study on Industrial Energy Efficiency
Lumber Wood Products	Motors	Fan System - Variable Speed Drive	employee	New	1,475.22	10	\$700.09	9%	38%	\$0.06	6.19	6.14	UNIDO Study on Industrial Energy Efficiency
Lumber Wood Products	Motors	Compressed Air - Equipment Upgrade	employee	New	1,361.49	10	\$102.80	17%	50%	\$0.04	4.84	4.85	7th Power Plan
Lumber Wood Products	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	New	0.00	15	\$0.00	16%	38%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Lumber Wood Products	Motors	Compressed Air - Refrigerated Cycling Dryers	employee	New	0.00	10	\$0.00	16%	30%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Lumber Wood Products	Motors	Compressed Air - System Controls	employee	New	307.59	10	\$73.50	9%	38%	\$0.03	0.94	0.94	UNIDO Study on Industrial Energy Efficiency
Lumber Wood Products	Motors	Compressed Air - Leak Management Program	employee	New	776.70	10	\$73.89	18%	75%	\$0.04	4.74	4.74	7th Power Plan
Lumber Wood Products	Motors	Compressed Air - Variable Speed Drive	employee	New	570.21	15	\$450.65	26%	45%	\$0.08	1.86	1.84	UNIDO Study on Industrial Energy Efficiency
Lumber Wood Products	Motors	Compressed Air - Low Pressure-Drop Filters	employee	New	19.01	10	\$6.95	17%	50%	\$0.05	0.07	0.07	Illinois TRM
Lumber Wood Products	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	New	115.57	10	\$22.53	17%	50%	\$0.03	0.41	0.41	UNIDO Study on Industrial Energy Efficiency
Lumber Wood Products	Motors	Compressed Air - Outside Air Intake	employee	New	0.00	20	\$0.00	17%	50%	\$0.00	0.00	0.00	Michigan Energy Measures Database

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Lumber Wood Products	Motors	Compressed Air - Receiver Capacity Addition	employee	New	115.18	15	\$61.96	17%	50%	\$0.06	0.66	0.65	UNIDO Study on Industrial Energy Efficiency
Lumber Wood Products	Motors	Material Handling - Variable Speed Drive	employee	New	9,651.64	10	\$3,468.62	25%	45%	\$0.05	28.39	28.17	7th Power Plan
Lumber Wood Products	Motors	Motors - Green Rewind (<100 HP)	employee	New	131.57	10	\$57.21	10%	50%	\$0.06	3.87	3.84	7th Power Plan
Lumber Wood Products	Motors	Motors - Green Rewind (100 HP+)	employee	New	73.85	10	\$20.31	6%	25%	\$0.04	1.03	1.02	7th Power Plan
Lumber Wood Products	Motors	Switch from Belt Drive to Direct Drive	employee	New	1,114.11	12	\$251.13	16%	25%	\$0.03	8.98	8.90	2015-mdu-irp-report---volume-iii.pdf
Lumber Wood Products	Motors	Motors - Synchronous Belts	employee	New	295.76	10	\$75.55	16%	36%	\$0.03	3.16	3.17	7th Power Plan
Lumber Wood Products	Miscellaneous	Agriculture - Engine Block Timer	employee	New	2,850.29	3	\$35.16	0%	0%	\$0.00	0.00	0.00	Vermont TRM
Lumber Wood Products	Motors	Agriculture - Live Stock Waterer	employee	New	4,996.51	10	\$2,664.76	0%	0%	\$0.07	0.00	0.00	Ontario Power TRM
Lumber Wood Products	Process	Dairy - Milk Precoolers	employee	New	328.94	15	\$152.57	0%	0%	\$0.05	0.00	0.00	Ontario Power TRM
Lumber Wood Products	Process	Clean Room: Change Filter Strategy	employee	New	306.08	15	\$2.26	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Lumber Wood Products	Process	Clean Room: Chiller Optimize	employee	New	97.58	15	\$9.03	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Lumber Wood Products	Process	Clean Room: Clean Room HVAC	employee	New	59.21	15	\$10.91	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Lumber Wood Products	Process	Elec Chip Fab: Solidstate Chiller	employee	New	59.21	15	\$34.25	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Lumber Wood Products	Process	Elec Chip Fab: Eliminate Exhaust	employee	New	38.24	15	\$8.12	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Lumber Wood Products	Process	Elec Chip Fab: Exhaust Injector	employee	New	76.47	15	\$39.18	0%	0%	\$0.06	0.00	0.00	7th Power Plan
Lumber Wood Products	Process	Elec Chip Fab: Reduce Gas Pressure	employee	New	76.52	15	\$0.79	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Lumber Wood Products	Motors	Panel: Hydraulic Press	employee	New	14,477.74	10	\$3,466.54	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Lumber Wood Products	Motors	Wood: Replace Pneumatic Conveyor	employee	New	15,747.57	10	\$259.61	15%	75%	\$0.00	0.00	137.57	7th Power Plan
Lumber Wood Products	Process	Metal: New Arc Furnace	employee	New	3,990.36	10	\$419.15	0%	0%	\$0.01	0.00	0.00	7th Power Plan

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Lumber Wood Products	Process	Paper: Premium Control Large Material	employee	New	430.54	10	\$215.61	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Lumber Wood Products	Process	Paper: Efficient Pulp Screen	employee	New	344.99	10	\$71.02	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Lumber Wood Products	Process	Kraft: Effluent Treatment System	employee	New	344.99	10	\$29.12	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Lumber Wood Products	Motors	Kraft: Efficient Agitator	employee	New	26,078.93	10	\$2,586.83	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Lumber Wood Products	Process	Mech Pulp: Premium Process	employee	New	3.86	5	\$0.50	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Lumber Wood Products	Motors	Mech Pulp: Refiner Plate Improvement	employee	New	227.51	1	\$9.87	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Lumber Wood Products	Cooling	Transformer - High Efficiency	employee	New	41.31	10	\$209.62	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Lumber Wood Products	Heating	Transformer - High Efficiency	employee	New	269.30	10	\$209.62	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Lumber Wood Products	Ventilation	Transformer - High Efficiency	employee	New	2.40	10	\$209.62	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Lumber Wood Products	Interior Lighting	Transformer - High Efficiency	employee	New	48.11	10	\$209.62	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Lumber Wood Products	Exterior Lighting	Transformer - High Efficiency	employee	New	9.94	10	\$209.62	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Lumber Wood Products	Motors	Transformer - High Efficiency	employee	New	1,093.40	10	\$209.62	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Lumber Wood Products	Process	Transformer - High Efficiency	employee	New	172.43	10	\$209.62	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Lumber Wood Products	Miscellaneous	Transformer - High Efficiency	employee	New	102.18	10	\$209.62	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Lumber Wood Products	Cooling	Strategic Energy Management	employee	New	117.68	3	\$1,287.40	0%	24%	\$0.08	0.01	0.01	AEG Research
Lumber Wood Products	Heating	Strategic Energy Management	employee	New	776.10	3	\$1,287.40	0%	24%	\$0.08	0.05	0.05	AEG Research
Lumber Wood Products	Ventilation	Strategic Energy Management	employee	New	6.90	3	\$1,287.40	0%	24%	\$0.08	0.00	0.00	AEG Research
Lumber Wood Products	Interior Lighting	Strategic Energy Management	employee	New	138.65	3	\$1,287.40	0%	24%	\$0.08	0.05	0.07	AEG Research
Lumber Wood Products	Exterior Lighting	Strategic Energy Management	employee	New	28.72	3	\$1,287.40	0%	24%	\$0.08	0.01	0.02	AEG Research

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Lumber Wood Products	Motors	Strategic Energy Management	employee	New	3,158.72	3	\$1,287.40	0%	24%	\$0.08	0.93	0.95	AEG Research
Lumber Wood Products	Process	Strategic Energy Management	employee	New	498.12	3	\$1,287.40	0%	24%	\$0.08	0.14	0.14	AEG Research
Lumber Wood Products	Miscellaneous	Strategic Energy Management	employee	New	295.20	3	\$1,287.40	0%	24%	\$0.08	0.11	0.07	AEG Research
Lumber Wood Products	Interior Lighting	Commissioning	employee	New	159.83	3	\$2,238.50	10%	35%	\$0.15	0.05	0.08	AEG Research
Lumber Wood Products	Exterior Lighting	Commissioning	employee	New	33.11	3	\$2,238.50	10%	35%	\$0.15	0.01	0.02	AEG Research
Lumber Wood Products	Motors	Commissioning	employee	New	3,641.18	3	\$2,238.50	10%	35%	\$0.15	1.11	1.14	AEG Research
Lumber Wood Products	Process	Commissioning	employee	New	574.20	3	\$2,238.50	10%	35%	\$0.15	0.17	0.17	AEG Research
Lumber Wood Products	Miscellaneous	Commissioning	employee	New	340.28	3	\$2,238.50	10%	35%	\$0.15	0.13	0.09	AEG Research
Lumber Wood Products	Interior Lighting	Retrocommissioning	employee	New	160.37	3	\$1,421.04	0%	0%	\$0.10	0.00	0.00	AEG Research
Lumber Wood Products	Exterior Lighting	Retrocommissioning	employee	New	33.14	3	\$1,421.04	0%	0%	\$0.10	0.00	0.00	AEG Research
Lumber Wood Products	Motors	Retrocommissioning	employee	New	3,644.67	3	\$1,421.04	0%	0%	\$0.10	0.00	0.00	AEG Research
Lumber Wood Products	Process	Retrocommissioning	employee	New	574.75	3	\$1,421.04	0%	0%	\$0.10	0.00	0.00	AEG Research
Lumber Wood Products	Miscellaneous	Retrocommissioning	employee	New	340.61	3	\$1,421.04	0%	0%	\$0.10	0.00	0.00	AEG Research
Lumber Wood Products	Motors	Municipal Sewage Treatment	employee	New	270.75	12	\$152.11	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Lumber Wood Products	Motors	Municipal Water Supply Treatment	employee	New	0.00	12	\$0.00	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Metal Mfg	Cooling	Insulation - Ceiling	sqft	Existing	0.12	45	\$1.28	15%	25%	\$0.15	2.10	2.23	Building Energy Simulation Tool
Metal Mfg	Heating	Insulation - Ceiling	sqft	Existing	0.55	45	\$1.28	15%	25%	\$0.15	10.34	10.63	Building Energy Simulation Tool
Metal Mfg	Ventilation	Insulation - Ceiling	sqft	Existing	0.02	45	\$1.28	15%	25%	\$0.15	1.49	1.70	Building Energy Simulation Tool
Metal Mfg	Cooling	Insulation - Ducting	sqft	Existing	0.05	20	\$0.84	15%	25%	\$1.05	0.77	0.84	Building Energy Simulation Tool

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Metal Mfg	Heating	Insulation - Ducting	sqft	Existing	0.02	20	\$0.84	15%	25%	\$1.05	0.43	0.45	Building Energy Simulation Tool
Metal Mfg	Ventilation	Insulation - Ducting	sqft	Existing	0.00	20	\$0.84	15%	25%	\$1.05	0.06	0.07	Building Energy Simulation Tool
Metal Mfg	Cooling	Insulation - Wall Cavity	sqft	Existing	0.00	45	\$0.15	45%	50%	\$0.02	0.02	0.02	Building Energy Simulation Tool
Metal Mfg	Heating	Insulation - Wall Cavity	sqft	Existing	0.76	45	\$0.15	45%	50%	\$0.02	7.34	7.36	Building Energy Simulation Tool
Metal Mfg	Ventilation	Insulation - Wall Cavity	sqft	Existing	0.02	45	\$0.15	45%	50%	\$0.02	1.00	1.14	Building Energy Simulation Tool
Metal Mfg	Cooling	HVAC - Duct Repair and Sealing	sqft	Existing	0.02	18	\$0.00	15%	25%	\$0.00	0.28	0.29	Building Energy Simulation Tool
Metal Mfg	Heating	HVAC - Duct Repair and Sealing	sqft	Existing	0.05	18	\$0.00	15%	25%	\$0.00	1.04	1.04	Building Energy Simulation Tool
Metal Mfg	Ventilation	HVAC - Duct Repair and Sealing	sqft	Existing	0.00	18	\$0.00	15%	25%	\$0.00	0.14	0.16	Building Energy Simulation Tool
Metal Mfg	Cooling	Chiller - Chilled Water Reset	sqft	Existing	0.05	10	\$0.01	15%	45%	\$0.03	0.68	0.72	AEG-BEST
Metal Mfg	Cooling	Chiller - Chilled Water Variable-Flow System	sqft	Existing	0.25	15	\$0.50	15%	60%	\$0.20	5.32	5.88	AEG-BEST
Metal Mfg	Cooling	Chiller - Variable Speed Fans	sqft	Existing	0.10	15	\$0.03	15%	75%	\$0.04	2.77	2.94	New Jersey TRM
Metal Mfg	Cooling	HVAC - Economizer	sqft	Existing	0.64	10	\$0.25	18%	30%	\$0.05	2.78	2.95	AEG-BEST
Metal Mfg	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.25	15%	35%	\$10.61	0.30	0.37	7th Power Plan
Metal Mfg	Cooling	Destratification Fans (HVLS)	sqft	Existing	0.16	15	\$0.63	15%	50%	\$0.05	11.67	12.46	AEG Research
Metal Mfg	Heating	Destratification Fans (HVLS)	sqft	Existing	1.39	15	\$0.63	15%	50%	\$0.05	113.57	114.28	AEG Research
Metal Mfg	Cooling	RTU - Maintenance	sqft	Existing	0.08	3	\$0.07	15%	75%	\$0.28	4.88	5.50	AEG Research
Metal Mfg	Cooling	Thermostat - WiFi/Interactive	sqft	Existing	0.29	5	\$0.66	5%	15%	\$0.09	4.82	5.20	7th Power Plan
Metal Mfg	Heating	Thermostat - WiFi/Interactive	sqft	Existing	1.29	5	\$0.66	5%	15%	\$0.09	24.32	25.06	7th Power Plan
Metal Mfg	Ventilation	Thermostat - WiFi/Interactive	sqft	Existing	0.04	5	\$0.66	5%	15%	\$0.09	3.49	4.01	7th Power Plan
Metal Mfg	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	1.47	15	\$0.35	7%	33%	\$0.02	51.50	62.07	7th Power Plan
Metal Mfg	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	2.03	15	\$0.58	7%	33%	\$0.02	69.19	85.32	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Metal Mfg	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	Existing	0.02	15	\$0.00	1%	2%	\$0.01	0.32	0.42	7th Power Plan
Metal Mfg	Interior Lighting	Interior Lighting - Timeclocks and Timers	sqft	Existing	0.00	8	\$0.00	7%	7%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Metal Mfg	Interior Lighting	Interior Lighting - Skylights	sqft	Existing	0.00	15	\$1.01	15%	23%	\$0.00	0.00	0.00	AEG Research
Metal Mfg	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	sqft	Existing	0.03	16	\$1.81	5%	40%	\$4.11	9.62	13.60	7th Power Plan
Metal Mfg	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	Existing	0.04	11	\$0.00	15%	50%	\$0.01	10.64	13.72	Illinois TRM
Metal Mfg	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	sqft	Existing	0.05	8	\$0.03	15%	25%	\$0.08	13.01	17.70	7th Power Plan
Metal Mfg	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	Existing	0.03	8	\$0.02	33%	60%	\$0.08	18.11	25.31	Pacific Gas and Electric Research
Metal Mfg	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	Existing	0.03	7	\$1.19	15%	30%	\$4.54	11.34	16.73	AEG Research
Metal Mfg	Process	Process - Conductivity Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Metal Mfg	Process	Process - Timers and Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Metal Mfg	Motors	Process - Timers and Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Metal Mfg	Process	Refrigeration - Floating Head Pressure	employee	Existing	127.75	15	\$135.58	20%	50%	\$0.11	7.73	8.83	RTF Workbook
Metal Mfg	Process	Refrigeration - System Optimization	employee	Existing	204.68	15	\$95.47	20%	50%	\$0.05	12.39	14.14	AEG Research
Metal Mfg	Motors	Pumping System - Equipment Upgrade	employee	Existing	1,413.35	10	\$205.81	9%	38%	\$0.05	89.22	91.07	7th Power Plan
Metal Mfg	Motors	Pumping System - System Optimization	employee	Existing	1,048.81	12	\$313.65	9%	38%	\$0.04	64.71	66.47	UNIDO Study on Industrial Energy Efficiency
Metal Mfg	Motors	Pumping System - Variable Speed Drive	employee	Existing	1,038.46	10	\$326.31	9%	38%	\$0.04	63.71	65.97	UNIDO Study on Industrial Energy Efficiency
Metal Mfg	Motors	Fan System - Equipment Upgrade	employee	Existing	372.28	10	\$37.07	9%	38%	\$0.05	23.15	23.52	UNIDO Study on Industrial Energy Efficiency
Metal Mfg	Motors	Fan System - Flow Optimization	employee	Existing	439.42	10	\$61.34	9%	38%	\$0.02	27.30	27.77	UNIDO Study on Industrial Energy Efficiency
Metal Mfg	Motors	Fan System - Variable Speed Drive	employee	Existing	645.73	10	\$308.64	9%	38%	\$0.06	39.02	41.26	UNIDO Study on Industrial Energy Efficiency

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Metal Mfg	Motors	Compressed Air - Equipment Upgrade	employee	Existing	2,560.01	10	\$186.28	17%	50%	\$0.04	190.93	190.93	7th Power Plan
Metal Mfg	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	Existing	0.00	15	\$0.00	16%	38%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Metal Mfg	Motors	Compressed Air - Refrigerated Cycling Dryers	employee	Existing	0.00	10	\$0.00	16%	30%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Metal Mfg	Motors	Compressed Air - System Controls	employee	Existing	563.04	10	\$133.19	9%	38%	\$0.03	35.25	36.46	UNIDO Study on Industrial Energy Efficiency
Metal Mfg	Motors	Compressed Air - Leak Management Program	employee	Existing	1,446.99	10	\$133.89	18%	75%	\$0.04	183.99	185.65	7th Power Plan
Metal Mfg	Motors	Compressed Air - Variable Speed Drive	employee	Existing	1,029.30	15	\$816.58	26%	45%	\$0.08	42.29	44.83	UNIDO Study on Industrial Energy Efficiency
Metal Mfg	Motors	Compressed Air - Low Pressure-Drop Filters	employee	Existing	34.32	10	\$12.59	17%	50%	\$0.05	2.47	2.62	Illinois TRM
Metal Mfg	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	Existing	212.09	10	\$40.83	17%	50%	\$0.03	15.53	16.00	UNIDO Study on Industrial Energy Efficiency
Metal Mfg	Motors	Compressed Air - Outside Air Intake	employee	Existing	0.00	20	\$0.00	17%	50%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Metal Mfg	Motors	Compressed Air - Receiver Capacity Addition	employee	Existing	210.00	15	\$112.28	17%	50%	\$0.06	15.29	15.89	UNIDO Study on Industrial Energy Efficiency
Metal Mfg	Motors	Material Handling - Variable Speed Drive	employee	Existing	6,303.26	10	\$2,256.59	25%	45%	\$0.05	270.77	281.23	7th Power Plan
Metal Mfg	Motors	Motors - Green Rewind (<100 HP)	employee	Existing	91.36	10	\$39.96	10%	50%	\$0.06	38.80	40.94	7th Power Plan
Metal Mfg	Motors	Motors - Green Rewind (100 HP+)	employee	Existing	51.94	10	\$14.18	6%	25%	\$0.04	10.63	10.99	7th Power Plan
Metal Mfg	Motors	Switch from Belt Drive to Direct Drive	employee	Existing	789.94	12	\$175.42	16%	25%	\$0.03	81.50	83.33	2015-mdu-irp-report---volume-iii.pdf
Metal Mfg	Motors	Motors - Synchronous Belts	employee	Existing	208.33	10	\$52.77	16%	36%	\$0.03	45.60	47.24	7th Power Plan
Metal Mfg	Miscellaneous	Agriculture - Engine Block Timer	employee	Existing	2,618.31	3	\$32.30	0%	0%	\$0.00	0.00	0.00	Vermont TRM
Metal Mfg	Motors	Agriculture - Live Stock Waterer	employee	Existing	3,372.46	10	\$1,812.49	0%	0%	\$0.07	0.00	0.00	Ontario Power TRM
Metal Mfg	Process	Dairy - Milk Precoolers	employee	Existing	851.69	15	\$431.43	0%	0%	\$0.05	0.00	0.00	Ontario Power TRM
Metal Mfg	Process	Clean Room: Change Filter Strategy	employee	Existing	1,417.79	15	\$10.46	0%	0%	\$0.00	0.00	0.00	7th Power Plan

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Metal Mfg	Process	Clean Room: Chiller Optimize	employee	Existing	275.92	15	\$25.55	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Metal Mfg	Process	Clean Room: Clean Room HVAC	employee	Existing	167.53	15	\$30.84	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Metal Mfg	Process	Elec Chip Fab: Solidstate Chiller	employee	Existing	153.30	15	\$96.86	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Metal Mfg	Process	Elec Chip Fab: Eliminate Exhaust	employee	Existing	162.39	15	\$37.62	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Metal Mfg	Process	Elec Chip Fab: Exhaust Injector	employee	Existing	324.35	15	\$181.48	0%	0%	\$0.06	0.00	0.00	7th Power Plan
Metal Mfg	Process	Elec Chip Fab: Reduce Gas Pressure	employee	Existing	354.45	15	\$3.64	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Metal Mfg	Motors	Panel: Hydraulic Press	employee	Existing	9,498.05	10	\$2,255.24	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Metal Mfg	Motors	Wood: Replace Pneumatic Conveyor	employee	Existing	10,244.95	10	\$168.90	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Metal Mfg	Process	Metal: New Arc Furnace	employee	Existing	9,472.95	10	\$994.40	15%	75%	\$0.01	1,200.20	1,200.20	7th Power Plan
Metal Mfg	Process	Paper: Premium Control Large Material	employee	Existing	1,125.34	10	\$615.73	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Metal Mfg	Process	Paper: Efficient Pulp Screen	employee	Existing	903.35	10	\$202.82	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Metal Mfg	Process	Kraft: Effluent Treatment System	employee	Existing	985.84	10	\$83.15	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Metal Mfg	Motors	Kraft: Efficient Agitator	employee	Existing	17,286.93	10	\$1,682.92	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Metal Mfg	Process	Mech Pulp: Premium Process	employee	Existing	10.10	5	\$1.42	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Metal Mfg	Motors	Mech Pulp: Refiner Plate Improvement	employee	Existing	146.88	1	\$6.42	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Metal Mfg	Cooling	Transformer - High Efficiency	employee	Existing	106.69	10	\$265.42	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Metal Mfg	Heating	Transformer - High Efficiency	employee	Existing	653.63	10	\$265.42	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Metal Mfg	Ventilation	Transformer - High Efficiency	employee	Existing	9.84	10	\$265.42	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Metal Mfg	Interior Lighting	Transformer - High Efficiency	employee	Existing	91.20	10	\$265.42	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Metal Mfg	Exterior Lighting	Transformer - High Efficiency	employee	Existing	19.72	10	\$265.42	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Metal Mfg	Motors	Transformer - High Efficiency	employee	Existing	757.93	10	\$265.42	15%	15%	\$0.02	0.00	0.00	7th Power Plan

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Metal Mfg	Process	Transformer - High Efficiency	employee	Existing	450.68	10	\$265.42	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Metal Mfg	Miscellaneous	Transformer - High Efficiency	employee	Existing	99.10	10	\$265.42	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Metal Mfg	Cooling	Strategic Energy Management	employee	Existing	301.46	3	\$1,630.16	0%	5%	\$0.08	0.55	0.60	AEG Research
Metal Mfg	Heating	Strategic Energy Management	employee	Existing	1,875.96	3	\$1,630.16	0%	5%	\$0.08	3.86	4.00	AEG Research
Metal Mfg	Ventilation	Strategic Energy Management	employee	Existing	28.11	3	\$1,630.16	0%	5%	\$0.08	0.30	0.35	AEG Research
Metal Mfg	Interior Lighting	Strategic Energy Management	employee	Existing	260.36	3	\$1,630.16	0%	5%	\$0.08	2.39	3.14	AEG Research
Metal Mfg	Exterior Lighting	Strategic Energy Management	employee	Existing	56.59	3	\$1,630.16	0%	5%	\$0.08	0.53	0.71	AEG Research
Metal Mfg	Motors	Strategic Energy Management	employee	Existing	2,172.07	3	\$1,630.16	0%	5%	\$0.08	21.82	23.01	AEG Research
Metal Mfg	Process	Strategic Energy Management	employee	Existing	1,291.76	3	\$1,630.16	0%	5%	\$0.08	12.24	13.67	AEG Research
Metal Mfg	Miscellaneous	Strategic Energy Management	employee	Existing	283.66	3	\$1,630.16	0%	5%	\$0.08	3.76	3.10	AEG Research
Metal Mfg	Interior Lighting	Commissioning	employee	Existing	300.16	3	\$2,251.92	0%	0%	\$0.15	0.00	0.00	AEG Research
Metal Mfg	Exterior Lighting	Commissioning	employee	Existing	65.25	3	\$2,251.92	0%	0%	\$0.15	0.00	0.00	AEG Research
Metal Mfg	Motors	Commissioning	employee	Existing	2,503.70	3	\$2,251.92	0%	0%	\$0.15	0.00	0.00	AEG Research
Metal Mfg	Process	Commissioning	employee	Existing	1,489.01	3	\$2,251.92	0%	0%	\$0.15	0.00	0.00	AEG Research
Metal Mfg	Miscellaneous	Commissioning	employee	Existing	326.92	3	\$2,251.92	0%	0%	\$0.15	0.00	0.00	AEG Research
Metal Mfg	Interior Lighting	Retrocommissioning	employee	Existing	303.99	3	\$1,429.56	5%	39%	\$0.10	19.25	24.94	AEG Research
Metal Mfg	Exterior Lighting	Retrocommissioning	employee	Existing	65.74	3	\$1,429.56	5%	39%	\$0.10	4.22	5.57	AEG Research
Metal Mfg	Motors	Retrocommissioning	employee	Existing	2,526.43	3	\$1,429.56	5%	39%	\$0.10	174.11	181.95	AEG Research
Metal Mfg	Process	Retrocommissioning	employee	Existing	1,502.27	3	\$1,429.56	5%	39%	\$0.10	97.69	108.13	AEG Research
Metal Mfg	Miscellaneous	Retrocommissioning	employee	Existing	330.33	3	\$1,429.56	5%	39%	\$0.10	30.02	24.52	AEG Research
Metal Mfg	Motors	Municipal Sewage Treatment	employee	Existing	183.06	12	\$103.46	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Metal Mfg	Motors	Municipal Water Supply Treatment	employee	Existing	0.00	12	\$0.00	0%	0%	\$0.00	0.00	0.00	7th Power Plan

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Metal Mfg	Cooling	Insulation - Ceiling	sqft	New	0.11	45	\$1.28	15%	25%	\$0.16	0.87	0.88	Building Energy Simulation Tool
Metal Mfg	Heating	Insulation - Ceiling	sqft	New	0.52	45	\$1.28	15%	25%	\$0.16	4.35	4.35	Building Energy Simulation Tool
Metal Mfg	Ventilation	Insulation - Ceiling	sqft	New	0.01	45	\$1.28	15%	25%	\$0.16	0.52	0.57	Building Energy Simulation Tool
Metal Mfg	Cooling	Insulation - Ducting	sqft	New	0.04	20	\$0.84	15%	25%	\$1.13	0.34	0.34	Building Energy Simulation Tool
Metal Mfg	Heating	Insulation - Ducting	sqft	New	0.02	20	\$0.84	15%	25%	\$1.13	0.18	0.18	Building Energy Simulation Tool
Metal Mfg	Ventilation	Insulation - Ducting	sqft	New	0.00	20	\$0.84	15%	25%	\$1.13	0.02	0.02	Building Energy Simulation Tool
Metal Mfg	Cooling	Insulation - Wall Cavity	sqft	New	0.00	45	\$0.15	45%	50%	\$0.02	0.01	0.01	Building Energy Simulation Tool
Metal Mfg	Heating	Insulation - Wall Cavity	sqft	New	0.71	45	\$0.15	45%	50%	\$0.02	2.96	2.96	Building Energy Simulation Tool
Metal Mfg	Ventilation	Insulation - Wall Cavity	sqft	New	0.01	45	\$0.15	45%	50%	\$0.02	0.35	0.38	Building Energy Simulation Tool
Metal Mfg	Cooling	HVAC - Duct Repair and Sealing	sqft	New	0.01	18	\$0.00	15%	25%	\$0.00	0.11	0.11	Building Energy Simulation Tool
Metal Mfg	Heating	HVAC - Duct Repair and Sealing	sqft	New	0.05	18	\$0.00	15%	25%	\$0.00	0.41	0.41	Building Energy Simulation Tool
Metal Mfg	Ventilation	HVAC - Duct Repair and Sealing	sqft	New	0.00	18	\$0.00	15%	25%	\$0.00	0.05	0.05	Building Energy Simulation Tool
Metal Mfg	Cooling	Chiller - Chilled Water Reset	sqft	New	0.04	10	\$0.01	15%	45%	\$0.03	0.08	0.08	AEG-BEST
Metal Mfg	Cooling	Chiller - Chilled Water Variable-Flow System	sqft	New	0.20	15	\$0.50	15%	60%	\$0.24	1.06	1.10	AEG-BEST
Metal Mfg	Cooling	Chiller - Variable Speed Fans	sqft	New	0.07	15	\$0.03	15%	75%	\$0.04	0.53	0.54	New Jersey TRM
Metal Mfg	Cooling	HVAC - Economizer	sqft	New	0.55	10	\$0.25	18%	30%	\$0.06	0.36	0.37	AEG-BEST
Metal Mfg	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.25	15%	35%	\$12.70	0.06	0.07	7th Power Plan
Metal Mfg	Cooling	Destratification Fans (HVLS)	sqft	New	0.14	15	\$0.63	15%	50%	\$0.05	2.61	2.69	AEG Research
Metal Mfg	Heating	Destratification Fans (HVLS)	sqft	New	1.30	15	\$0.63	15%	50%	\$0.05	25.41	25.47	AEG Research
Metal Mfg	Cooling	RTU - Maintenance	sqft	New	0.07	3	\$0.07	15%	75%	\$0.29	0.09	0.10	AEG Research
Metal Mfg	Cooling	Thermostat - WiFi/Interactive	sqft	New	0.26	5	\$0.66	5%	15%	\$0.09	0.34	0.35	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Metal Mfg	Heating	Thermostat - WiFi/Interactive	sqft	New	1.23	5	\$0.66	5%	15%	\$0.09	1.70	1.71	7th Power Plan
Metal Mfg	Ventilation	Thermostat - WiFi/Interactive	sqft	New	0.02	5	\$0.66	5%	15%	\$0.09	0.20	0.24	7th Power Plan
Metal Mfg	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	1.13	15	\$0.35	22%	41%	\$0.02	26.38	30.82	7th Power Plan
Metal Mfg	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	1.55	15	\$0.58	22%	41%	\$0.02	35.94	42.31	7th Power Plan
Metal Mfg	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	New	0.02	15	\$0.00	1%	2%	\$0.01	0.06	0.07	7th Power Plan
Metal Mfg	Interior Lighting	Interior Lighting - Timeclocks and Timers	sqft	New	0.00	8	\$0.00	7%	7%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Metal Mfg	Interior Lighting	Interior Lighting - Skylights	sqft	New	0.00	15	\$1.01	18%	24%	\$0.00	0.00	0.00	AEG Research
Metal Mfg	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	sqft	New	0.03	16	\$1.81	5%	40%	\$4.11	2.30	2.90	7th Power Plan
Metal Mfg	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	New	0.03	11	\$0.00	15%	50%	\$0.01	1.58	2.03	Illinois TRM
Metal Mfg	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	sqft	New	0.04	8	\$0.03	15%	25%	\$0.08	1.27	1.76	7th Power Plan
Metal Mfg	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	New	0.02	8	\$0.02	44%	60%	\$0.08	1.09	1.50	Pacific Gas and Electric Research
Metal Mfg	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	New	0.02	7	\$1.19	15%	30%	\$4.56	1.06	1.47	AEG Research
Metal Mfg	Process	Process - Conductivity Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Metal Mfg	Process	Process - Timers and Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Metal Mfg	Motors	Process - Timers and Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Metal Mfg	Process	Refrigeration - Floating Head Pressure	employee	New	133.57	15	\$95.82	20%	50%	\$0.08	1.99	2.04	RTF Workbook
Metal Mfg	Process	Refrigeration - System Optimization	employee	New	223.37	15	\$33.51	20%	50%	\$0.02	3.38	3.38	AEG Research
Metal Mfg	Motors	Pumping System - Equipment Upgrade	employee	New	1,433.87	10	\$205.81	9%	38%	\$0.05	13.07	13.05	7th Power Plan
Metal Mfg	Motors	Pumping System - System Optimization	employee	New	1,070.35	12	\$313.65	9%	38%	\$0.04	15.46	15.40	UNIDO Study on Industrial Energy Efficiency

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Metal Mfg	Motors	Pumping System - Variable Speed Drive	employee	New	1,065.60	10	\$326.31	9%	38%	\$0.04	13.33	13.28	UNIDO Study on Industrial Energy Efficiency
Metal Mfg	Motors	Fan System - Equipment Upgrade	employee	New	377.14	10	\$37.07	9%	38%	\$0.05	4.71	4.70	UNIDO Study on Industrial Energy Efficiency
Metal Mfg	Motors	Fan System - Flow Optimization	employee	New	445.45	10	\$61.34	9%	38%	\$0.02	5.56	5.55	UNIDO Study on Industrial Energy Efficiency
Metal Mfg	Motors	Fan System - Variable Speed Drive	employee	New	670.96	10	\$308.64	9%	38%	\$0.06	8.41	8.36	UNIDO Study on Industrial Energy Efficiency
Metal Mfg	Motors	Compressed Air - Equipment Upgrade	employee	New	2,560.01	10	\$186.28	17%	50%	\$0.04	27.14	27.14	7th Power Plan
Metal Mfg	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	New	0.00	15	\$0.00	16%	38%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Metal Mfg	Motors	Compressed Air - Refrigerated Cycling Dryers	employee	New	0.00	10	\$0.00	16%	30%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Metal Mfg	Motors	Compressed Air - System Controls	employee	New	575.63	10	\$133.19	9%	38%	\$0.03	5.25	5.24	UNIDO Study on Industrial Energy Efficiency
Metal Mfg	Motors	Compressed Air - Leak Management Program	employee	New	1,456.52	10	\$133.89	18%	75%	\$0.04	26.51	26.49	7th Power Plan
Metal Mfg	Motors	Compressed Air - Variable Speed Drive	employee	New	1,066.76	15	\$816.58	26%	45%	\$0.08	10.38	10.33	UNIDO Study on Industrial Energy Efficiency
Metal Mfg	Motors	Compressed Air - Low Pressure-Drop Filters	employee	New	35.56	10	\$12.59	17%	50%	\$0.05	0.38	0.38	Illinois TRM
Metal Mfg	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	New	216.33	10	\$40.83	17%	50%	\$0.03	2.30	2.30	UNIDO Study on Industrial Energy Efficiency
Metal Mfg	Motors	Compressed Air - Outside Air Intake	employee	New	0.00	20	\$0.00	17%	50%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Metal Mfg	Motors	Compressed Air - Receiver Capacity Addition	employee	New	215.44	15	\$112.28	17%	50%	\$0.06	3.66	3.65	UNIDO Study on Industrial Energy Efficiency
Metal Mfg	Motors	Material Handling - Variable Speed Drive	employee	New	6,480.07	10	\$2,256.59	25%	45%	\$0.05	56.92	56.66	7th Power Plan
Metal Mfg	Motors	Motors - Green Rewind (<100 HP)	employee	New	94.82	10	\$39.96	10%	50%	\$0.06	8.34	8.29	7th Power Plan
Metal Mfg	Motors	Motors - Green Rewind (100 HP+)	employee	New	53.23	10	\$14.18	6%	25%	\$0.04	2.22	2.21	7th Power Plan
Metal Mfg	Motors	Switch from Belt Drive to Direct Drive	employee	New	803.93	12	\$175.42	16%	25%	\$0.03	19.34	19.27	2015-mdu-irp-report---volume-iii.pdf
Metal Mfg	Motors	Motors - Synchronous Belts	employee	New	213.26	10	\$52.77	16%	36%	\$0.03	6.82	6.80	7th Power Plan

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Metal Mfg	Miscellaneous	Agriculture - Engine Block Timer	employee	New	2,618.31	3	\$32.30	0%	0%	\$0.00	0.00	0.00	Vermont TRM
Metal Mfg	Motors	Agriculture - Live Stock Waterer	employee	New	3,508.30	10	\$1,812.49	0%	0%	\$0.07	0.00	0.00	Ontario Power TRM
Metal Mfg	Process	Dairy - Milk Precoolers	employee	New	890.49	15	\$431.43	0%	0%	\$0.05	0.00	0.00	Ontario Power TRM
Metal Mfg	Process	Clean Room: Change Filter Strategy	employee	New	1,417.79	15	\$10.46	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Metal Mfg	Process	Clean Room: Chiller Optimize	employee	New	275.92	15	\$25.55	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Metal Mfg	Process	Clean Room: Clean Room HVAC	employee	New	167.42	15	\$30.84	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Metal Mfg	Process	Elec Chip Fab: Solidstate Chiller	employee	New	160.29	15	\$96.86	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Metal Mfg	Process	Elec Chip Fab: Eliminate Exhaust	employee	New	169.56	15	\$37.62	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Metal Mfg	Process	Elec Chip Fab: Exhaust Injector	employee	New	339.13	15	\$181.48	0%	0%	\$0.06	0.00	0.00	7th Power Plan
Metal Mfg	Process	Elec Chip Fab: Reduce Gas Pressure	employee	New	354.45	15	\$3.64	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Metal Mfg	Motors	Panel: Hydraulic Press	employee	New	9,722.60	10	\$2,255.24	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Metal Mfg	Motors	Wood: Replace Pneumatic Conveyor	employee	New	10,244.95	10	\$168.90	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Metal Mfg	Process	Metal: New Arc Furnace	employee	New	9,466.96	10	\$994.40	15%	75%	\$0.01	323.47	323.46	7th Power Plan
Metal Mfg	Process	Paper: Premium Control Large Material	employee	New	1,177.14	10	\$615.73	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Metal Mfg	Process	Paper: Efficient Pulp Screen	employee	New	943.22	10	\$202.82	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Metal Mfg	Process	Kraft: Effluent Treatment System	employee	New	985.22	10	\$83.15	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Metal Mfg	Motors	Kraft: Efficient Agitator	employee	New	17,512.59	10	\$1,682.92	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Metal Mfg	Process	Mech Pulp: Premium Process	employee	New	10.55	5	\$1.42	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Metal Mfg	Motors	Mech Pulp: Refiner Plate Improvement	employee	New	152.79	1	\$6.42	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Metal Mfg	Cooling	Transformer - High Efficiency	employee	New	95.57	10	\$260.24	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Metal Mfg	Heating	Transformer - High Efficiency	employee	New	624.61	10	\$260.24	15%	15%	\$0.02	0.00	0.00	7th Power Plan

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Metal Mfg	Ventilation	Transformer - High Efficiency	employee	New	5.56	10	\$260.24	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Metal Mfg	Interior Lighting	Transformer - High Efficiency	employee	New	69.29	10	\$260.24	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Metal Mfg	Exterior Lighting	Transformer - High Efficiency	employee	New	14.32	10	\$260.24	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Metal Mfg	Motors	Transformer - High Efficiency	employee	New	788.46	10	\$260.24	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Metal Mfg	Process	Transformer - High Efficiency	employee	New	471.43	10	\$260.24	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Metal Mfg	Miscellaneous	Transformer - High Efficiency	employee	New	93.87	10	\$260.24	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Metal Mfg	Cooling	Strategic Energy Management	employee	New	272.93	3	\$1,598.31	0%	5%	\$0.08	0.01	0.01	AEG Research
Metal Mfg	Heating	Strategic Energy Management	employee	New	1,800.04	3	\$1,598.31	0%	5%	\$0.08	0.07	0.07	AEG Research
Metal Mfg	Ventilation	Strategic Energy Management	employee	New	16.00	3	\$1,598.31	0%	5%	\$0.08	0.00	0.01	AEG Research
Metal Mfg	Interior Lighting	Strategic Energy Management	employee	New	199.68	3	\$1,598.31	0%	5%	\$0.08	0.04	0.06	AEG Research
Metal Mfg	Exterior Lighting	Strategic Energy Management	employee	New	41.37	3	\$1,598.31	0%	5%	\$0.08	0.01	0.01	AEG Research
Metal Mfg	Motors	Strategic Energy Management	employee	New	2,277.76	3	\$1,598.31	0%	5%	\$0.08	0.42	0.42	AEG Research
Metal Mfg	Process	Strategic Energy Management	employee	New	1,361.90	3	\$1,598.31	0%	5%	\$0.08	0.24	0.25	AEG Research
Metal Mfg	Miscellaneous	Strategic Energy Management	employee	New	271.17	3	\$1,598.31	0%	5%	\$0.08	0.06	0.04	AEG Research
Metal Mfg	Interior Lighting	Commissioning	employee	New	230.35	3	\$2,270.06	5%	39%	\$0.15	0.32	0.46	AEG Research
Metal Mfg	Exterior Lighting	Commissioning	employee	New	47.72	3	\$2,270.06	5%	39%	\$0.15	0.07	0.11	AEG Research
Metal Mfg	Motors	Commissioning	employee	New	2,627.66	3	\$2,270.06	5%	39%	\$0.15	3.26	3.29	AEG Research
Metal Mfg	Process	Commissioning	employee	New	1,571.11	3	\$2,270.06	5%	39%	\$0.15	1.91	2.00	AEG Research
Metal Mfg	Miscellaneous	Commissioning	employee	New	312.83	3	\$2,270.06	5%	39%	\$0.15	0.48	0.33	AEG Research
Metal Mfg	Interior Lighting	Retrocommissioning	employee	New	230.96	3	\$1,441.08	0%	0%	\$0.10	0.00	0.00	AEG Research

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Metal Mfg	Exterior Lighting	Retrocommissioning	employee	New	47.73	3	\$1,441.08	0%	0%	\$0.10	0.00	0.00	AEG Research
Metal Mfg	Motors	Retrocommissioning	employee	New	2,628.19	3	\$1,441.08	0%	0%	\$0.10	0.00	0.00	AEG Research
Metal Mfg	Process	Retrocommissioning	employee	New	1,571.42	3	\$1,441.08	0%	0%	\$0.10	0.00	0.00	AEG Research
Metal Mfg	Miscellaneous	Retrocommissioning	employee	New	312.89	3	\$1,441.08	0%	0%	\$0.10	0.00	0.00	AEG Research
Metal Mfg	Motors	Municipal Sewage Treatment	employee	New	190.00	12	\$103.46	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Metal Mfg	Motors	Municipal Water Supply Treatment	employee	New	0.00	12	\$0.00	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Misc. Mfg	Cooling	Insulation - Ceiling	sqft	Existing	0.12	45	\$1.28	15%	25%	\$0.15	3.81	4.05	Building Energy Simulation Tool
Misc. Mfg	Heating	Insulation - Ceiling	sqft	Existing	0.55	45	\$1.28	15%	25%	\$0.15	18.64	19.15	Building Energy Simulation Tool
Misc. Mfg	Ventilation	Insulation - Ceiling	sqft	Existing	0.02	45	\$1.28	15%	25%	\$0.15	2.69	3.07	Building Energy Simulation Tool
Misc. Mfg	Cooling	Insulation - Ducting	sqft	Existing	0.05	20	\$0.84	15%	25%	\$1.05	1.38	1.51	Building Energy Simulation Tool
Misc. Mfg	Heating	Insulation - Ducting	sqft	Existing	0.02	20	\$0.84	15%	25%	\$1.05	0.77	0.80	Building Energy Simulation Tool
Misc. Mfg	Ventilation	Insulation - Ducting	sqft	Existing	0.00	20	\$0.84	15%	25%	\$1.05	0.11	0.13	Building Energy Simulation Tool
Misc. Mfg	Cooling	Insulation - Wall Cavity	sqft	Existing	0.00	45	\$0.15	45%	50%	\$0.02	0.03	0.03	Building Energy Simulation Tool
Misc. Mfg	Heating	Insulation - Wall Cavity	sqft	Existing	0.76	45	\$0.15	45%	50%	\$0.02	13.24	13.27	Building Energy Simulation Tool
Misc. Mfg	Ventilation	Insulation - Wall Cavity	sqft	Existing	0.02	45	\$0.15	45%	50%	\$0.02	1.81	2.05	Building Energy Simulation Tool
Misc. Mfg	Cooling	HVAC - Duct Repair and Sealing	sqft	Existing	0.02	18	\$0.00	15%	25%	\$0.00	0.51	0.53	Building Energy Simulation Tool
Misc. Mfg	Heating	HVAC - Duct Repair and Sealing	sqft	Existing	0.05	18	\$0.00	15%	25%	\$0.00	1.87	1.87	Building Energy Simulation Tool
Misc. Mfg	Ventilation	HVAC - Duct Repair and Sealing	sqft	Existing	0.00	18	\$0.00	15%	25%	\$0.00	0.25	0.29	Building Energy Simulation Tool
Misc. Mfg	Cooling	Chiller - Chilled Water Reset	sqft	Existing	0.05	10	\$0.01	15%	45%	\$0.03	1.22	1.30	AEG-BEST
Misc. Mfg	Cooling	Chiller - Chilled Water Variable-Flow System	sqft	Existing	0.25	15	\$0.50	15%	60%	\$0.20	9.68	10.64	AEG-BEST

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Misc. Mfg	Cooling	Chiller - Variable Speed Fans	sqft	Existing	0.10	15	\$0.03	15%	75%	\$0.04	4.99	5.30	New Jersey TRM
Misc. Mfg	Cooling	HVAC - Economizer	sqft	Existing	0.03	10	\$0.25	18%	30%	\$0.98	4.59	5.13	AEG-BEST
Misc. Mfg	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.25	15%	35%	\$10.61	0.54	0.67	7th Power Plan
Misc. Mfg	Cooling	Destratification Fans (HVLS)	sqft	Existing	0.16	15	\$0.63	15%	50%	\$0.05	21.24	22.56	AEG Research
Misc. Mfg	Heating	Destratification Fans (HVLS)	sqft	Existing	1.39	15	\$0.63	15%	50%	\$0.05	204.70	205.98	AEG Research
Misc. Mfg	Cooling	RTU - Maintenance	sqft	Existing	0.08	3	\$0.07	15%	75%	\$0.28	8.80	9.92	AEG Research
Misc. Mfg	Cooling	Thermostat - WiFi/Interactive	sqft	Existing	0.29	5	\$0.66	5%	15%	\$0.09	8.78	9.42	7th Power Plan
Misc. Mfg	Heating	Thermostat - WiFi/Interactive	sqft	Existing	1.29	5	\$0.66	5%	15%	\$0.09	43.84	45.17	7th Power Plan
Misc. Mfg	Ventilation	Thermostat - WiFi/Interactive	sqft	Existing	0.04	5	\$0.66	5%	15%	\$0.09	6.30	7.23	7th Power Plan
Misc. Mfg	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.08	15	\$0.35	7%	33%	\$0.38	67.56	81.44	7th Power Plan
Misc. Mfg	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.11	15	\$0.58	7%	33%	\$0.44	90.78	111.93	7th Power Plan
Misc. Mfg	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	Existing	0.02	15	\$0.00	1%	2%	\$0.01	0.42	0.55	7th Power Plan
Misc. Mfg	Interior Lighting	Interior Lighting - Timeclocks and Timers	sqft	Existing	0.00	8	\$0.00	7%	7%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Misc. Mfg	Interior Lighting	Interior Lighting - Skylights	sqft	Existing	0.00	15	\$1.01	15%	23%	\$0.00	0.00	0.00	AEG Research
Misc. Mfg	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	sqft	Existing	0.03	16	\$1.81	5%	40%	\$4.11	12.62	17.84	7th Power Plan
Misc. Mfg	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	Existing	0.04	11	\$0.00	15%	50%	\$0.01	13.96	18.00	Illinois TRM
Misc. Mfg	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	sqft	Existing	0.05	8	\$0.03	15%	25%	\$0.08	17.07	23.22	7th Power Plan
Misc. Mfg	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	Existing	0.03	8	\$0.02	33%	60%	\$0.08	23.76	33.20	Pacific Gas and Electric Research
Misc. Mfg	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	Existing	0.03	7	\$1.19	15%	30%	\$4.54	14.88	21.95	AEG Research
Misc. Mfg	Process	Process - Conductivity Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A

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Misc. Mfg	Process	Process - Timers and Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Misc. Mfg	Motors	Process - Timers and Controls	sqft	Existing	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Misc. Mfg	Process	Refrigeration - Floating Head Pressure	employee	Existing	105.71	15	\$103.04	20%	50%	\$0.11	11.73	11.77	RTF Workbook
Misc. Mfg	Process	Refrigeration - System Optimization	employee	Existing	169.76	15	\$72.56	20%	50%	\$0.05	18.88	18.88	AEG Research
Misc. Mfg	Motors	Pumping System - Equipment Upgrade	employee	Existing	721.40	10	\$105.78	9%	38%	\$0.05	75.60	77.65	7th Power Plan
Misc. Mfg	Motors	Pumping System - System Optimization	employee	Existing	533.41	12	\$161.20	9%	38%	\$0.04	54.53	56.48	UNIDO Study on Industrial Energy Efficiency
Misc. Mfg	Motors	Pumping System - Variable Speed Drive	employee	Existing	526.68	10	\$167.71	9%	38%	\$0.04	53.44	55.94	UNIDO Study on Industrial Energy Efficiency
Misc. Mfg	Motors	Fan System - Equipment Upgrade	employee	Existing	264.71	10	\$26.45	9%	38%	\$0.05	27.39	27.89	UNIDO Study on Industrial Energy Efficiency
Misc. Mfg	Motors	Fan System - Flow Optimization	employee	Existing	311.93	10	\$43.76	9%	38%	\$0.02	32.21	32.89	UNIDO Study on Industrial Energy Efficiency
Misc. Mfg	Motors	Fan System - Variable Speed Drive	employee	Existing	455.90	10	\$220.19	9%	38%	\$0.06	45.65	48.67	UNIDO Study on Industrial Energy Efficiency
Misc. Mfg	Motors	Compressed Air - Equipment Upgrade	employee	Existing	912.58	10	\$66.40	17%	50%	\$0.04	113.44	113.44	7th Power Plan
Misc. Mfg	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	Existing	0.00	15	\$0.00	16%	38%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Misc. Mfg	Motors	Compressed Air - Refrigerated Cycling Dryers	employee	Existing	0.00	10	\$0.00	16%	30%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Misc. Mfg	Motors	Compressed Air - System Controls	employee	Existing	198.15	10	\$47.48	9%	38%	\$0.03	20.52	21.48	UNIDO Study on Industrial Energy Efficiency
Misc. Mfg	Motors	Compressed Air - Leak Management Program	employee	Existing	514.95	10	\$47.73	18%	75%	\$0.04	109.04	110.18	7th Power Plan
Misc. Mfg	Motors	Compressed Air - Variable Speed Drive	employee	Existing	363.26	15	\$291.09	26%	45%	\$0.08	24.74	26.45	UNIDO Study on Industrial Energy Efficiency
Misc. Mfg	Motors	Compressed Air - Low Pressure-Drop Filters	employee	Existing	12.11	10	\$4.49	17%	50%	\$0.05	1.44	1.54	Illinois TRM
Misc. Mfg	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	Existing	74.83	10	\$14.55	17%	50%	\$0.03	9.08	9.44	UNIDO Study on Industrial Energy Efficiency
Misc. Mfg	Motors	Compressed Air - Outside Air Intake	employee	Existing	0.00	20	\$0.00	17%	50%	\$0.00	0.00	0.00	Michigan Energy Measures Database

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Misc. Mfg	Motors	Compressed Air - Receiver Capacity Addition	employee	Existing	73.88	15	\$40.03	17%	50%	\$0.06	8.90	9.36	UNIDO Study on Industrial Energy Efficiency
Misc. Mfg	Motors	Material Handling - Variable Speed Drive	employee	Existing	1,221.90	10	\$444.34	25%	45%	\$0.05	86.68	91.20	7th Power Plan
Misc. Mfg	Motors	Motors - Green Rewind (<100 HP)	employee	Existing	27.94	10	\$12.35	10%	50%	\$0.06	19.66	20.92	7th Power Plan
Misc. Mfg	Motors	Motors - Green Rewind (100 HP+)	employee	Existing	15.84	10	\$4.38	6%	25%	\$0.04	5.36	5.61	7th Power Plan
Misc. Mfg	Motors	Switch from Belt Drive to Direct Drive	employee	Existing	241.60	12	\$54.21	16%	25%	\$0.03	41.30	42.58	2015-mdu-irp-report---volume-iii.pdf
Misc. Mfg	Motors	Motors - Synchronous Belts	employee	Existing	63.54	10	\$16.31	16%	36%	\$0.03	23.00	24.12	7th Power Plan
Misc. Mfg	Miscellaneous	Agriculture - Engine Block Timer	employee	Existing	1,981.97	3	\$24.45	0%	0%	\$0.00	0.00	0.00	Vermont TRM
Misc. Mfg	Motors	Agriculture - Live Stock Waterer	employee	Existing	1,710.36	10	\$931.54	0%	0%	\$0.07	0.00	0.00	Ontario Power TRM
Misc. Mfg	Process	Dairy - Milk Precoolers	employee	Existing	704.70	15	\$327.88	0%	0%	\$0.05	0.00	0.00	Ontario Power TRM
Misc. Mfg	Process	Clean Room: Change Filter Strategy	employee	Existing	217.83	15	\$1.61	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Misc. Mfg	Process	Clean Room: Chiller Optimize	employee	Existing	209.70	15	\$19.42	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Misc. Mfg	Process	Clean Room: Clean Room HVAC	employee	Existing	127.32	15	\$23.44	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Misc. Mfg	Process	Elec Chip Fab: Solidstate Chiller	employee	Existing	126.85	15	\$73.61	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Misc. Mfg	Process	Elec Chip Fab: Eliminate Exhaust	employee	Existing	27.23	15	\$5.78	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Misc. Mfg	Process	Elec Chip Fab: Exhaust Injector	employee	Existing	54.25	15	\$27.88	0%	0%	\$0.06	0.00	0.00	7th Power Plan
Misc. Mfg	Process	Elec Chip Fab: Reduce Gas Pressure	employee	Existing	54.46	15	\$0.56	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Misc. Mfg	Motors	Panel: Hydraulic Press	employee	Existing	1,850.23	10	\$444.07	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Misc. Mfg	Motors	Wood: Replace Pneumatic Conveyor	employee	Existing	2,017.28	10	\$33.26	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Misc. Mfg	Process	Metal: New Arc Furnace	employee	Existing	2,424.69	10	\$254.53	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Misc. Mfg	Process	Paper: Premium Control Large Material	employee	Existing	348.20	10	\$175.25	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Misc. Mfg	Process	Paper: Efficient Pulp Screen	employee	Existing	280.59	10	\$57.73	0%	0%	\$0.03	0.00	0.00	7th Power Plan

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Misc. Mfg	Process	Kraft: Effluent Treatment System	employee	Existing	280.59	10	\$23.67	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Misc. Mfg	Motors	Kraft: Efficient Agitator	employee	Existing	3,382.77	10	\$331.38	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Misc. Mfg	Process	Mech Pulp: Premium Process	employee	Existing	3.13	5	\$0.40	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Misc. Mfg	Motors	Mech Pulp: Refiner Plate Improvement	employee	Existing	28.54	1	\$1.26	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Misc. Mfg	Cooling	Transformer - High Efficiency	employee	Existing	116.09	10	\$164.10	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Misc. Mfg	Heating	Transformer - High Efficiency	employee	Existing	706.87	10	\$164.10	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Misc. Mfg	Ventilation	Transformer - High Efficiency	employee	Existing	10.64	10	\$164.10	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Misc. Mfg	Interior Lighting	Transformer - High Efficiency	employee	Existing	74.62	10	\$164.10	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Misc. Mfg	Exterior Lighting	Transformer - High Efficiency	employee	Existing	15.52	10	\$164.10	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Misc. Mfg	Motors	Transformer - High Efficiency	employee	Existing	231.12	10	\$164.10	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Misc. Mfg	Process	Transformer - High Efficiency	employee	Existing	139.45	10	\$164.10	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Misc. Mfg	Miscellaneous	Transformer - High Efficiency	employee	Existing	75.01	10	\$164.10	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Misc. Mfg	Cooling	Strategic Energy Management	employee	Existing	326.01	3	\$1,007.86	0%	5%	\$0.08	0.99	1.08	AEG Research
Misc. Mfg	Heating	Strategic Energy Management	employee	Existing	2,028.76	3	\$1,007.86	0%	5%	\$0.08	6.95	7.22	AEG Research
Misc. Mfg	Ventilation	Strategic Energy Management	employee	Existing	30.40	3	\$1,007.86	0%	5%	\$0.08	0.54	0.63	AEG Research
Misc. Mfg	Interior Lighting	Strategic Energy Management	employee	Existing	204.95	3	\$1,007.86	0%	5%	\$0.08	3.14	4.12	AEG Research
Misc. Mfg	Exterior Lighting	Strategic Energy Management	employee	Existing	44.55	3	\$1,007.86	0%	5%	\$0.08	0.69	0.92	AEG Research
Misc. Mfg	Motors	Strategic Energy Management	employee	Existing	662.38	3	\$1,007.86	0%	5%	\$0.08	11.00	11.70	AEG Research
Misc. Mfg	Process	Strategic Energy Management	employee	Existing	399.54	3	\$1,007.86	0%	5%	\$0.08	6.95	7.03	AEG Research

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Misc. Mfg	Miscellaneous	Strategic Energy Management	employee	Existing	214.72	3	\$1,007.86	0%	5%	\$0.08	4.75	3.91	AEG Research
Misc. Mfg	Interior Lighting	Commissioning	employee	Existing	236.27	3	\$792.34	0%	0%	\$0.14	0.00	0.00	AEG Research
Misc. Mfg	Exterior Lighting	Commissioning	employee	Existing	51.36	3	\$792.34	0%	0%	\$0.14	0.00	0.00	AEG Research
Misc. Mfg	Motors	Commissioning	employee	Existing	763.52	3	\$792.34	0%	0%	\$0.14	0.00	0.00	AEG Research
Misc. Mfg	Process	Commissioning	employee	Existing	460.53	3	\$792.34	0%	0%	\$0.14	0.00	0.00	AEG Research
Misc. Mfg	Miscellaneous	Commissioning	employee	Existing	247.47	3	\$792.34	0%	0%	\$0.14	0.00	0.00	AEG Research
Misc. Mfg	Interior Lighting	Retrocommissioning	employee	Existing	239.29	3	\$502.99	5%	39%	\$0.09	25.25	32.72	AEG Research
Misc. Mfg	Exterior Lighting	Retrocommissioning	employee	Existing	51.75	3	\$502.99	5%	39%	\$0.09	5.54	7.31	AEG Research
Misc. Mfg	Motors	Retrocommissioning	employee	Existing	770.41	3	\$502.99	5%	39%	\$0.09	87.80	92.52	AEG Research
Misc. Mfg	Process	Retrocommissioning	employee	Existing	464.83	3	\$502.99	5%	39%	\$0.09	55.45	55.64	AEG Research
Misc. Mfg	Miscellaneous	Retrocommissioning	employee	Existing	250.05	3	\$502.99	5%	39%	\$0.09	37.88	30.94	AEG Research
Misc. Mfg	Motors	Municipal Sewage Treatment	employee	Existing	93.11	12	\$53.18	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Misc. Mfg	Motors	Municipal Water Supply Treatment	employee	Existing	0.00	12	\$0.00	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Misc. Mfg	Cooling	Insulation - Ceiling	sqft	New	0.11	45	\$1.28	15%	25%	\$0.16	1.57	1.59	Building Energy Simulation Tool
Misc. Mfg	Heating	Insulation - Ceiling	sqft	New	0.52	45	\$1.28	15%	25%	\$0.16	7.84	7.84	Building Energy Simulation Tool
Misc. Mfg	Ventilation	Insulation - Ceiling	sqft	New	0.01	45	\$1.28	15%	25%	\$0.16	0.93	1.02	Building Energy Simulation Tool
Misc. Mfg	Cooling	Insulation - Ducting	sqft	New	0.04	20	\$0.84	15%	25%	\$1.13	0.60	0.61	Building Energy Simulation Tool
Misc. Mfg	Heating	Insulation - Ducting	sqft	New	0.02	20	\$0.84	15%	25%	\$1.13	0.33	0.33	Building Energy Simulation Tool
Misc. Mfg	Ventilation	Insulation - Ducting	sqft	New	0.00	20	\$0.84	15%	25%	\$1.13	0.04	0.04	Building Energy Simulation Tool
Misc. Mfg	Cooling	Insulation - Wall Cavity	sqft	New	0.00	45	\$0.15	45%	50%	\$0.02	0.01	0.01	Building Energy Simulation Tool
Misc. Mfg	Heating	Insulation - Wall Cavity	sqft	New	0.71	45	\$0.15	45%	50%	\$0.02	5.33	5.33	Building Energy Simulation Tool
Misc. Mfg	Ventilation	Insulation - Wall Cavity	sqft	New	0.01	45	\$0.15	45%	50%	\$0.02	0.62	0.68	Building Energy Simulation Tool

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Misc. Mfg	Cooling	HVAC - Duct Repair and Sealing	sqft	New	0.01	18	\$0.00	15%	25%	\$0.00	0.20	0.20	Building Energy Simulation Tool
Misc. Mfg	Heating	HVAC - Duct Repair and Sealing	sqft	New	0.05	18	\$0.00	15%	25%	\$0.00	0.74	0.74	Building Energy Simulation Tool
Misc. Mfg	Ventilation	HVAC - Duct Repair and Sealing	sqft	New	0.00	18	\$0.00	15%	25%	\$0.00	0.09	0.09	Building Energy Simulation Tool
Misc. Mfg	Cooling	Chiller - Chilled Water Reset	sqft	New	0.04	10	\$0.01	15%	45%	\$0.03	0.15	0.15	AEG-BEST
Misc. Mfg	Cooling	Chiller - Chilled Water Variable-Flow System	sqft	New	0.20	15	\$0.50	15%	60%	\$0.24	1.92	1.99	AEG-BEST
Misc. Mfg	Cooling	Chiller - Variable Speed Fans	sqft	New	0.07	15	\$0.03	15%	75%	\$0.04	0.95	0.98	New Jersey TRM
Misc. Mfg	Cooling	HVAC - Economizer	sqft	New	0.03	10	\$0.25	18%	30%	\$1.06	0.63	0.66	AEG-BEST
Misc. Mfg	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.25	15%	35%	\$12.70	0.10	0.12	7th Power Plan
Misc. Mfg	Cooling	Destratification Fans (HVLS)	sqft	New	0.14	15	\$0.63	15%	50%	\$0.05	4.71	4.86	AEG Research
Misc. Mfg	Heating	Destratification Fans (HVLS)	sqft	New	1.30	15	\$0.63	15%	50%	\$0.05	45.79	45.90	AEG Research
Misc. Mfg	Cooling	RTU - Maintenance	sqft	New	0.07	3	\$0.07	15%	75%	\$0.29	0.16	0.18	AEG Research
Misc. Mfg	Cooling	Thermostat - WiFi/Interactive	sqft	New	0.26	5	\$0.66	5%	15%	\$0.09	0.61	0.64	7th Power Plan
Misc. Mfg	Heating	Thermostat - WiFi/Interactive	sqft	New	1.23	5	\$0.66	5%	15%	\$0.09	3.07	3.09	7th Power Plan
Misc. Mfg	Ventilation	Thermostat - WiFi/Interactive	sqft	New	0.02	5	\$0.66	5%	15%	\$0.09	0.36	0.43	7th Power Plan
Misc. Mfg	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.06	15	\$0.35	22%	41%	\$0.38	34.61	40.44	7th Power Plan
Misc. Mfg	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.08	15	\$0.58	22%	41%	\$0.44	47.15	55.51	7th Power Plan
Misc. Mfg	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	New	0.02	15	\$0.00	1%	2%	\$0.01	0.08	0.10	7th Power Plan
Misc. Mfg	Interior Lighting	Interior Lighting - Timeclocks and Timers	sqft	New	0.00	8	\$0.00	7%	7%	\$0.00	0.00	0.00	SCP Tool Occupancy Hour Reductions.xlsx
Misc. Mfg	Interior Lighting	Interior Lighting - Skylights	sqft	New	0.00	15	\$1.01	18%	24%	\$0.00	0.00	0.00	AEG Research
Misc. Mfg	Interior Lighting	Interior Fluorescent - Bi-Level Fixture	sqft	New	0.03	16	\$1.81	5%	40%	\$4.11	3.01	3.80	7th Power Plan

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Misc. Mfg	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	New	0.03	11	\$0.00	15%	50%	\$0.01	2.07	2.67	Illinois TRM
Misc. Mfg	Exterior Lighting	Exterior Lighting - Bi-Level Fixture	sqft	New	0.04	8	\$0.03	15%	25%	\$0.08	1.67	2.31	7th Power Plan
Misc. Mfg	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	New	0.02	8	\$0.02	44%	60%	\$0.08	1.43	1.97	Pacific Gas and Electric Research
Misc. Mfg	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	New	0.02	7	\$1.19	15%	30%	\$4.56	1.39	1.93	AEG Research
Misc. Mfg	Process	Process - Conductivity Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Misc. Mfg	Process	Process - Timers and Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Misc. Mfg	Motors	Process - Timers and Controls	sqft	New	0.00	5	\$0.00	15%	75%	\$0.00	0.00	0.00	N/A
Misc. Mfg	Process	Refrigeration - Floating Head Pressure	employee	New	105.92	15	\$72.82	20%	50%	\$0.08	2.67	2.67	RTF Workbook
Misc. Mfg	Process	Refrigeration - System Optimization	employee	New	169.76	15	\$25.46	20%	50%	\$0.02	4.28	4.28	AEG Research
Misc. Mfg	Motors	Pumping System - Equipment Upgrade	employee	New	734.72	10	\$105.78	9%	38%	\$0.05	11.17	11.15	7th Power Plan
Misc. Mfg	Motors	Pumping System - System Optimization	employee	New	547.66	12	\$161.20	9%	38%	\$0.04	13.20	13.13	UNIDO Study on Industrial Energy Efficiency
Misc. Mfg	Motors	Pumping System - Variable Speed Drive	employee	New	544.48	10	\$167.71	9%	38%	\$0.04	11.37	11.31	UNIDO Study on Industrial Energy Efficiency
Misc. Mfg	Motors	Fan System - Equipment Upgrade	employee	New	268.70	10	\$26.45	9%	38%	\$0.05	5.59	5.58	UNIDO Study on Industrial Energy Efficiency
Misc. Mfg	Motors	Fan System - Flow Optimization	employee	New	317.12	10	\$43.76	9%	38%	\$0.02	6.60	6.58	UNIDO Study on Industrial Energy Efficiency
Misc. Mfg	Motors	Fan System - Variable Speed Drive	employee	New	476.51	10	\$220.19	9%	38%	\$0.06	9.97	9.90	UNIDO Study on Industrial Energy Efficiency
Misc. Mfg	Motors	Compressed Air - Equipment Upgrade	employee	New	912.58	10	\$66.40	17%	50%	\$0.04	16.13	16.13	7th Power Plan
Misc. Mfg	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	New	0.00	15	\$0.00	16%	38%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Misc. Mfg	Motors	Compressed Air - Refrigerated Cycling Dryers	employee	New	0.00	10	\$0.00	16%	30%	\$0.00	0.00	0.00	Michigan Energy Measures Database

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Misc. Mfg	Motors	Compressed Air - System Controls	employee	New	204.04	10	\$47.48	9%	38%	\$0.03	3.11	3.10	UNIDO Study on Industrial Energy Efficiency
Misc. Mfg	Motors	Compressed Air - Leak Management Program	employee	New	518.87	10	\$47.73	18%	75%	\$0.04	15.75	15.73	7th Power Plan
Misc. Mfg	Motors	Compressed Air - Variable Speed Drive	employee	New	378.63	15	\$291.09	26%	45%	\$0.08	6.15	6.11	UNIDO Study on Industrial Energy Efficiency
Misc. Mfg	Motors	Compressed Air - Low Pressure-Drop Filters	employee	New	12.62	10	\$4.49	17%	50%	\$0.05	0.22	0.22	Illinois TRM
Misc. Mfg	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	New	76.78	10	\$14.55	17%	50%	\$0.03	1.36	1.36	UNIDO Study on Industrial Energy Efficiency
Misc. Mfg	Motors	Compressed Air - Outside Air Intake	employee	New	0.00	20	\$0.00	17%	50%	\$0.00	0.00	0.00	Michigan Energy Measures Database
Misc. Mfg	Motors	Compressed Air - Receiver Capacity Addition	employee	New	76.36	15	\$40.03	17%	50%	\$0.06	2.17	2.16	UNIDO Study on Industrial Energy Efficiency
Misc. Mfg	Motors	Material Handling - Variable Speed Drive	employee	New	1,267.09	10	\$444.34	25%	45%	\$0.05	18.58	18.47	7th Power Plan
Misc. Mfg	Motors	Motors - Green Rewind (<100 HP)	employee	New	29.17	10	\$12.35	10%	50%	\$0.06	4.28	4.25	7th Power Plan
Misc. Mfg	Motors	Motors - Green Rewind (100 HP+)	employee	New	16.35	10	\$4.38	6%	25%	\$0.04	1.14	1.13	7th Power Plan
Misc. Mfg	Motors	Switch from Belt Drive to Direct Drive	employee	New	247.34	12	\$54.21	16%	25%	\$0.03	9.93	9.88	2015-mdi-irp-report---volume-iii.pdf
Misc. Mfg	Motors	Motors - Synchronous Belts	employee	New	65.52	10	\$16.31	16%	36%	\$0.03	3.49	3.49	7th Power Plan
Misc. Mfg	Miscellaneous	Agriculture - Engine Block Timer	employee	New	1,981.97	3	\$24.45	0%	0%	\$0.00	0.00	0.00	Vermont TRM
Misc. Mfg	Motors	Agriculture - Live Stock Waterer	employee	New	1,792.47	10	\$931.54	0%	0%	\$0.07	0.00	0.00	Ontario Power TRM
Misc. Mfg	Process	Dairy - Milk Precoolers	employee	New	706.15	15	\$327.88	0%	0%	\$0.05	0.00	0.00	Ontario Power TRM
Misc. Mfg	Process	Clean Room: Change Filter Strategy	employee	New	217.83	15	\$1.61	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Misc. Mfg	Process	Clean Room: Chiller Optimize	employee	New	209.70	15	\$19.42	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Misc. Mfg	Process	Clean Room: Clean Room HVAC	employee	New	127.11	15	\$23.44	0%	0%	\$0.02	0.00	0.00	7th Power Plan
Misc. Mfg	Process	Elec Chip Fab: Solidstate Chiller	employee	New	127.11	15	\$73.61	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Misc. Mfg	Process	Elec Chip Fab: Eliminate Exhaust	employee	New	27.18	15	\$5.78	0%	0%	\$0.02	0.00	0.00	7th Power Plan

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Misc. Mfg	Process	Elec Chip Fab: Exhaust Injector	employee	New	54.37	15	\$27.88	0%	0%	\$0.06	0.00	0.00	7th Power Plan
Misc. Mfg	Process	Elec Chip Fab: Reduce Gas Pressure	employee	New	54.46	15	\$0.56	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Misc. Mfg	Motors	Panel: Hydraulic Press	employee	New	1,905.24	10	\$444.07	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Misc. Mfg	Motors	Wood: Replace Pneumatic Conveyor	employee	New	2,017.28	10	\$33.26	0%	0%	\$0.00	0.00	0.00	7th Power Plan
Misc. Mfg	Process	Metal: New Arc Furnace	employee	New	2,420.60	10	\$254.53	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Misc. Mfg	Process	Paper: Premium Control Large Material	employee	New	349.36	10	\$175.25	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Misc. Mfg	Process	Paper: Efficient Pulp Screen	employee	New	280.12	10	\$57.73	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Misc. Mfg	Process	Kraft: Effluent Treatment System	employee	New	280.12	10	\$23.67	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Misc. Mfg	Motors	Kraft: Efficient Agitator	employee	New	3,439.03	10	\$331.38	0%	0%	\$0.01	0.00	0.00	7th Power Plan
Misc. Mfg	Process	Mech Pulp: Premium Process	employee	New	3.13	5	\$0.40	0%	0%	\$0.03	0.00	0.00	7th Power Plan
Misc. Mfg	Motors	Mech Pulp: Refiner Plate Improvement	employee	New	29.91	1	\$1.26	0%	0%	\$0.04	0.00	0.00	7th Power Plan
Misc. Mfg	Cooling	Transformer - High Efficiency	employee	New	103.61	10	\$158.02	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Misc. Mfg	Heating	Transformer - High Efficiency	employee	New	675.49	10	\$158.02	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Misc. Mfg	Ventilation	Transformer - High Efficiency	employee	New	6.02	10	\$158.02	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Misc. Mfg	Interior Lighting	Transformer - High Efficiency	employee	New	57.25	10	\$158.02	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Misc. Mfg	Exterior Lighting	Transformer - High Efficiency	employee	New	11.27	10	\$158.02	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Misc. Mfg	Motors	Transformer - High Efficiency	employee	New	242.22	10	\$158.02	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Misc. Mfg	Process	Transformer - High Efficiency	employee	New	139.91	10	\$158.02	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Misc. Mfg	Miscellaneous	Transformer - High Efficiency	employee	New	71.05	10	\$158.02	15%	15%	\$0.02	0.00	0.00	7th Power Plan
Misc. Mfg	Cooling	Strategic Energy Management	employee	New	295.16	3	\$970.48	0%	5%	\$0.08	0.02	0.02	AEG Research
Misc. Mfg	Heating	Strategic Energy Management	employee	New	1,946.65	3	\$970.48	0%	5%	\$0.08	0.12	0.12	AEG Research

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Misc. Mfg	Ventilation	Strategic Energy Management	employee	New	17.31	3	\$970.48	0%	5%	\$0.08	0.01	0.01	AEG Research
Misc. Mfg	Interior Lighting	Strategic Energy Management	employee	New	157.18	3	\$970.48	0%	5%	\$0.08	0.05	0.08	AEG Research
Misc. Mfg	Exterior Lighting	Strategic Energy Management	employee	New	32.56	3	\$970.48	0%	5%	\$0.08	0.01	0.02	AEG Research
Misc. Mfg	Motors	Strategic Energy Management	employee	New	699.74	3	\$970.48	0%	5%	\$0.08	0.21	0.22	AEG Research
Misc. Mfg	Process	Strategic Energy Management	employee	New	404.19	3	\$970.48	0%	5%	\$0.08	0.12	0.12	AEG Research
Misc. Mfg	Miscellaneous	Strategic Energy Management	employee	New	205.27	3	\$970.48	0%	5%	\$0.08	0.08	0.05	AEG Research
Misc. Mfg	Interior Lighting	Commissioning	employee	New	181.32	3	\$806.62	5%	39%	\$0.15	0.42	0.60	AEG Research
Misc. Mfg	Exterior Lighting	Commissioning	employee	New	37.56	3	\$806.62	5%	39%	\$0.15	0.10	0.14	AEG Research
Misc. Mfg	Motors	Commissioning	employee	New	807.23	3	\$806.62	5%	39%	\$0.15	1.67	1.69	AEG Research
Misc. Mfg	Process	Commissioning	employee	New	466.28	3	\$806.62	5%	39%	\$0.15	0.96	0.96	AEG Research
Misc. Mfg	Miscellaneous	Commissioning	employee	New	236.80	3	\$806.62	5%	39%	\$0.15	0.60	0.42	AEG Research
Misc. Mfg	Interior Lighting	Retrocommissioning	employee	New	181.80	3	\$512.06	0%	0%	\$0.09	0.00	0.00	AEG Research
Misc. Mfg	Exterior Lighting	Retrocommissioning	employee	New	37.57	3	\$512.06	0%	0%	\$0.09	0.00	0.00	AEG Research
Misc. Mfg	Motors	Retrocommissioning	employee	New	807.40	3	\$512.06	0%	0%	\$0.09	0.00	0.00	AEG Research
Misc. Mfg	Process	Retrocommissioning	employee	New	466.38	3	\$512.06	0%	0%	\$0.09	0.00	0.00	AEG Research
Misc. Mfg	Miscellaneous	Retrocommissioning	employee	New	236.85	3	\$512.06	0%	0%	\$0.09	0.00	0.00	AEG Research
Misc. Mfg	Motors	Municipal Sewage Treatment	employee	New	97.21	12	\$53.18	0%	0%	\$0.07	0.00	0.00	7th Power Plan
Misc. Mfg	Motors	Municipal Water Supply Treatment	employee	New	0.00	12	\$0.00	0%	0%	\$0.00	0.00	0.00	7th Power Plan

IRRIGATION MEASURES

California Irrigation Measures Assumptions

Table H-16 Comparison of 7th Plan and RTF Irrigation Measures in California

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Irrigation - CA	Motors	Pumps (< 100 HP)	motor	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	CA DEER
Irrigation - CA	Motors	Pumps (100 HP+)	motor	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	CA DEER
Irrigation - CA	Motors	Other Motors	motor	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	CA DEER
Irrigation - CA	Motors	Pumps (< 100 HP)	motor	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	CA DEER
Irrigation - CA	Motors	Pumps (100 HP+)	motor	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	CA DEER
Irrigation - CA	Motors	Other Motors	motor	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	CA DEER
Irrigation - CA	Motors	Wheel/Hand - Flow Control Nozzle Replacement	acres	Existing	67.03	4	\$9.31	4%	5%	\$0.03	28.55	30.25	7th Power Plan
Irrigation - CA	Motors	Wheel/Hand - Nozzle Replacement	acres	Existing	68.37	4	\$3.48	55%	62%	\$0.01	205.78	214.87	7th Power Plan
Irrigation - CA	Motors	Wheel/Hand - Impact Sprinkler Maintenance	acres	Existing	58.13	5	\$20.26	30%	36%	\$0.07	144.12	153.91	7th Power Plan
Irrigation - CA	Motors	Wheel/Hand - Gasket Replacement	acres	Existing	366.89	5	\$6.43	73%	75%	\$0.00	330.26	337.94	7th Power Plan
Irrigation - CA	Motors	Wheel/Hand - Drain Replacement	acres	Existing	374.80	5	\$22.45	73%	75%	\$0.01	334.52	348.20	7th Power Plan
Irrigation - CA	Motors	Wheel/Hand - Pipe Maintenance	acres	Existing	179.22	8	\$29.57	73%	75%	\$0.02	159.86	166.77	7th Power Plan
Irrigation - CA	Motors	Thunderbird - Hub Replacement	acres	Existing	304.70	10	\$164.27	8%	10%	\$0.07	248.89	263.20	7th Power Plan
Irrigation - CA	Motors	Wheel Line - Leveler Maintenance	acres	Existing	89.98	8	\$5.34	15%	18%	\$0.01	102.45	106.43	7th Power Plan
Irrigation - CA	Motors	Center Pivot/Linear - New Sprinkler Package	acres	Existing	115.85	5	\$24.73	6%	32%	\$0.04	1,373.99	1,456.15	7th Power Plan
Irrigation - CA	Motors	Center Pivot/Linear - New Goosenecks	acres	Existing	9.04	15	\$4.04	56%	75%	\$0.05	80.12	83.55	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Irrigation - CA	Motors	Center Pivot/Linear - New Drop Tubes	acres	Existing	8.86	10	\$6.30	46%	75%	\$0.09	117.09	123.99	7th Power Plan
Irrigation - CA	Motors	Center Pivot/Linear - Boot Gasket Replacement	acres	Existing	15.05	8	\$2.13	10%	12%	\$0.02	12.08	12.60	7th Power Plan
Irrigation - CA	Motors	Center Pivot/Linear - Tower Gasket Replacement	acres	Existing	3.63	8	\$5.11	73%	75%	\$0.21	3.21	3.43	7th Power Plan
Irrigation - CA	Motors	Center Pivot - Low Energy Spray Application	acres	Existing	623.14	10	\$21.33	1%	9%	\$0.00	0.00	2,233.68	7th Power Plan
Irrigation - CA	Motors	Low Pressure Regulators	acres	Existing	473.07	10	\$39.90	53%	60%	\$0.01	1,454.80	1,473.78	7th Power Plan
Irrigation - CA	Motors	Motors - Variable Frequency Drive	service point	Existing	7,371.43	10	\$2,217.78	15%	30%	\$0.04	1,678.35	1,746.09	UNIDO Study on Industrial Energy Efficiency
Irrigation - CA	Motors	Scientific Irrigation Practices	acres	Existing	90.53	1	\$10.74	43%	75%	\$0.10	1,314.74	1,406.34	Custom - prior study
Irrigation - CA	Motors	Green Motor Rewind	rewind motor	Existing	1,010.46	20	\$341.99	12%	75%	\$0.03	260.01	270.26	7th Power Plan
Irrigation - CA	Motors	Pump Equipment Upgrade	acres	Existing	323.56	10	\$1,476.28	8%	38%	\$0.57	140.62	150.30	7th Power Plan
Irrigation - CA	Motors	Wheel/Hand - Flow Control Nozzle Replacement	acres	New	69.10	4	\$9.31	4%	5%	\$0.03	0.33	0.33	7th Power Plan
Irrigation - CA	Motors	Wheel/Hand - Nozzle Replacement	acres	New	69.79	4	\$3.48	55%	62%	\$0.01	2.30	2.35	7th Power Plan
Irrigation - CA	Motors	Wheel/Hand - Impact Sprinkler Maintenance	acres	New	60.47	5	\$20.26	30%	36%	\$0.07	2.29	2.33	7th Power Plan
Irrigation - CA	Motors	Wheel/Hand - Gasket Replacement	acres	New	369.88	5	\$6.43	75%	75%	\$0.00	0.00	0.00	7th Power Plan
Irrigation - CA	Motors	Wheel/Hand - Drain Replacement	acres	New	380.63	5	\$22.45	75%	75%	\$0.01	0.00	0.00	7th Power Plan
Irrigation - CA	Motors	Wheel/Hand - Pipe Maintenance	acres	New	182.66	8	\$29.57	75%	75%	\$0.02	0.00	0.00	7th Power Plan
Irrigation - CA	Motors	Thunderbird - Hub Replacement	acres	New	313.48	10	\$164.27	8%	10%	\$0.07	7.99	8.11	7th Power Plan
Irrigation - CA	Motors	Wheel Line - Leveler Maintenance	acres	New	91.22	8	\$5.34	15%	18%	\$0.01	2.66	2.70	7th Power Plan
Irrigation - CA	Motors	Center Pivot/Linear - New Sprinkler Package	acres	New	119.45	5	\$24.90	6%	32%	\$0.04	21.69	22.14	7th Power Plan
Irrigation - CA	Motors	Center Pivot/Linear - New Goosenecks	acres	New	9.21	15	\$4.06	56%	75%	\$0.05	3.21	3.25	7th Power Plan
Irrigation - CA	Motors	Center Pivot/Linear - New Drop Tubes	acres	New	9.12	10	\$6.34	56%	75%	\$0.09	2.53	2.57	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Irrigation - CA	Motors	Center Pivot/Linear - Boot Gasket Replacement	acres	New	15.33	8	\$2.13	10%	12%	\$0.02	0.32	0.32	7th Power Plan
Irrigation - CA	Motors	Center Pivot/Linear - Tower Gasket Replacement	acres	New	3.78	8	\$5.11	75%	75%	\$0.21	0.00	0.00	7th Power Plan
Irrigation - CA	Motors	Center Pivot - Low Energy Spray Application	acres	New	625.78	10	\$21.33	1%	9%	\$0.00	0.00	123.00	7th Power Plan
Irrigation - CA	Motors	Low Pressure Regulators	acres	New	478.38	10	\$39.90	53%	60%	\$0.01	81.49	81.67	7th Power Plan
Irrigation - CA	Motors	Motors - Variable Frequency Drive	service point	New	7,483.28	10	\$2,202.66	15%	30%	\$0.04	68.95	69.75	UNIDO Study on Industrial Energy Efficiency
Irrigation - CA	Motors	Scientific Irrigation Practices	acres	New	94.34	1	\$10.74	43%	75%	\$0.10	55.62	56.09	Custom - prior study
Irrigation - CA	Motors	Green Motor Rewind	rewind motor	New	1,024.97	20	\$341.99	11%	75%	\$0.03	10.58	10.70	7th Power Plan
Irrigation - CA	Motors	Pump Equipment Upgrade	acres	New	336.93	10	\$1,466.25	8%	38%	\$0.57	4.63	4.68	7th Power Plan

Idaho Irrigation Measures Assumptions

Table H-17 Comparison of 7th Plan and RTF Irrigation Measures in Idaho

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Irrigation - ID	Motors	Pumps (< 100 HP)	motor	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	CA DEER
Irrigation - ID	Motors	Pumps (100 HP+)	motor	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	CA DEER
Irrigation - ID	Motors	Other Motors	motor	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	CA DEER
Irrigation - ID	Motors	Pumps (< 100 HP)	motor	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	CA DEER
Irrigation - ID	Motors	Pumps (100 HP+)	motor	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	CA DEER
Irrigation - ID	Motors	Other Motors	motor	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	CA DEER
Irrigation - ID	Motors	Wheel/Hand - Flow Control Nozzle Replacement	acres	Existing	60.46	4	\$9.31	4%	5%	\$0.04	204.11	215.82	7th Power Plan
Irrigation - ID	Motors	Wheel/Hand - Nozzle Replacement	acres	Existing	61.75	4	\$3.48	55%	62%	\$0.01	1,473.27	1,533.91	7th Power Plan
Irrigation - ID	Motors	Wheel/Hand - Impact Sprinkler Maintenance	acres	Existing	42.33	5	\$20.26	30%	36%	\$0.10	831.51	886.65	7th Power Plan
Irrigation - ID	Motors	Wheel/Hand - Gasket Replacement	acres	Existing	266.70	5	\$6.43	73%	75%	\$0.01	1,899.93	1,945.78	7th Power Plan
Irrigation - ID	Motors	Wheel/Hand - Drain Replacement	acres	Existing	272.84	5	\$22.45	73%	75%	\$0.02	1,929.64	2,005.70	7th Power Plan
Irrigation - ID	Motors	Wheel/Hand - Pipe Maintenance	acres	Existing	128.35	8	\$29.57	73%	75%	\$0.03	903.19	952.97	7th Power Plan
Irrigation - ID	Motors	Thunderbird - Hub Replacement	acres	Existing	221.82	10	\$164.27	8%	10%	\$0.09	1,435.77	1,516.14	7th Power Plan
Irrigation - ID	Motors	Wheel Line - Leveler Maintenance	acres	Existing	65.79	8	\$5.34	15%	18%	\$0.01	597.05	613.29	7th Power Plan
Irrigation - ID	Motors	Center Pivot/Linear - New Sprinkler Package	acres	Existing	89.29	5	\$24.68	6%	32%	\$0.06	8,375.02	8,862.54	7th Power Plan
Irrigation - ID	Motors	Center Pivot/Linear - New Goosenecks	acres	Existing	6.96	15	\$4.03	56%	75%	\$0.06	487.18	507.89	7th Power Plan
Irrigation - ID	Motors	Center Pivot/Linear - New Drop Tubes	acres	Existing	6.82	10	\$6.28	46%	75%	\$0.12	713.47	754.52	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Irrigation - ID	Motors	Center Pivot/Linear - Boot Gasket Replacement	acres	Existing	11.64	8	\$2.13	10%	12%	\$0.03	74.07	76.99	7th Power Plan
Irrigation - ID	Motors	Center Pivot/Linear - Tower Gasket Replacement	acres	Existing	2.79	8	\$5.11	73%	75%	\$0.27	19.60	20.92	7th Power Plan
Irrigation - ID	Motors	Center Pivot - Low Energy Spray Application	acres	Existing	480.60	10	\$21.33	1%	9%	\$0.01	0.00	13,633.37	7th Power Plan
Irrigation - ID	Motors	Low Pressure Regulators	acres	Existing	304.64	10	\$75.33	53%	60%	\$0.05	7,407.62	7,510.97	7th Power Plan
Irrigation - ID	Motors	Motors - Variable Frequency Drive	service point	Existing	16,354.63	10	\$4,912.26	15%	30%	\$0.04	10,286.94	10,680.47	UNIDO Study on Industrial Energy Efficiency
Irrigation - ID	Motors	Scientific Irrigation Practices	acres	Existing	70.04	1	\$10.74	43%	75%	\$0.06	8,062.12	8,603.45	Custom - prior study
Irrigation - ID	Motors	Green Motor Rewind	rewind motor	Existing	1,347.88	20	\$458.56	12%	75%	\$0.03	1,606.55	1,647.98	7th Power Plan
Irrigation - ID	Motors	Pump Equipment Upgrade	acres	Existing	247.43	10	\$3,278.60	8%	38%	\$1.64	296.45	318.73	7th Power Plan
Irrigation - ID	Motors	Wheel/Hand - Flow Control Nozzle Replacement	acres	New	62.32	4	\$9.31	4%	5%	\$0.04	2.31	2.36	7th Power Plan
Irrigation - ID	Motors	Wheel/Hand - Nozzle Replacement	acres	New	62.94	4	\$3.48	55%	62%	\$0.01	16.37	16.64	7th Power Plan
Irrigation - ID	Motors	Wheel/Hand - Impact Sprinkler Maintenance	acres	New	44.05	5	\$20.26	30%	36%	\$0.10	13.15	13.37	7th Power Plan
Irrigation - ID	Motors	Wheel/Hand - Gasket Replacement	acres	New	269.21	5	\$6.43	75%	75%	\$0.01	0.00	0.00	7th Power Plan
Irrigation - ID	Motors	Wheel/Hand - Drain Replacement	acres	New	277.28	5	\$22.45	75%	75%	\$0.02	0.00	0.00	7th Power Plan
Irrigation - ID	Motors	Wheel/Hand - Pipe Maintenance	acres	New	131.94	8	\$29.57	75%	75%	\$0.03	0.00	0.00	7th Power Plan
Irrigation - ID	Motors	Thunderbird - Hub Replacement	acres	New	228.35	10	\$164.27	8%	10%	\$0.09	45.84	46.49	7th Power Plan
Irrigation - ID	Motors	Wheel Line - Leveler Maintenance	acres	New	66.67	8	\$5.34	15%	18%	\$0.01	15.32	15.46	7th Power Plan
Irrigation - ID	Motors	Center Pivot/Linear - New Sprinkler Package	acres	New	92.12	5	\$24.90	6%	32%	\$0.06	131.83	134.39	7th Power Plan
Irrigation - ID	Motors	Center Pivot/Linear - New Goosenecks	acres	New	7.10	15	\$4.06	56%	75%	\$0.06	19.51	19.72	7th Power Plan
Irrigation - ID	Motors	Center Pivot/Linear - New Drop Tubes	acres	New	7.03	10	\$6.34	56%	75%	\$0.12	15.36	15.57	7th Power Plan
Irrigation - ID	Motors	Center Pivot/Linear - Boot Gasket Replacement	acres	New	11.83	8	\$2.13	10%	12%	\$0.03	1.91	1.94	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Irrigation - ID	Motors	Center Pivot/Linear - Tower Gasket Replacement	acres	New	2.91	8	\$5.11	75%	75%	\$0.27	0.00	0.00	7th Power Plan
Irrigation - ID	Motors	Center Pivot - Low Energy Spray Application	acres	New	483.24	10	\$21.33	1%	9%	\$0.01	0.00	749.37	7th Power Plan
Irrigation - ID	Motors	Low Pressure Regulators	acres	New	308.92	10	\$75.33	53%	60%	\$0.05	415.36	416.12	7th Power Plan
Irrigation - ID	Motors	Motors - Variable Frequency Drive	service point	New	16,555.39	10	\$4,868.88	15%	30%	\$0.04	420.33	424.81	UNIDO Study on Industrial Energy Efficiency
Irrigation - ID	Motors	Scientific Irrigation Practices	acres	New	72.96	1	\$10.74	43%	75%	\$0.06	338.98	341.63	Custom - prior study
Irrigation - ID	Motors	Green Motor Rewind	rewind motor	New	1,364.47	20	\$458.56	11%	75%	\$0.03	64.57	65.02	7th Power Plan
Irrigation - ID	Motors	Pump Equipment Upgrade	acres	New	259.39	10	\$3,249.67	8%	38%	\$1.62	9.82	9.93	7th Power Plan

Utah Irrigation Measures Assumptions

Table H-18 Comparison of 7th Plan and RTF Irrigation Measures in Utah

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Irrigation - UT	Motors	Pumps (< 100 HP)	motor	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	CA DEER
Irrigation - UT	Motors	Pumps (100 HP+)	motor	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	CA DEER
Irrigation - UT	Motors	Other Motors	motor	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	CA DEER
Irrigation - UT	Motors	Pumps (< 100 HP)	motor	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	CA DEER
Irrigation - UT	Motors	Pumps (100 HP+)	motor	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	CA DEER
Irrigation - UT	Motors	Other Motors	motor	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	CA DEER
Irrigation - UT	Motors	Wheel/Hand - Flow Control Nozzle Replacement	acres	Existing	60.32	4	\$9.31	4%	5%	\$0.03	72.01	76.55	7th Power Plan
Irrigation - UT	Motors	Wheel/Hand - Nozzle Replacement	acres	Existing	61.63	4	\$3.48	55%	62%	\$0.01	520.62	543.98	7th Power Plan
Irrigation - UT	Motors	Wheel/Hand - Impact Sprinkler Maintenance	acres	Existing	42.18	5	\$20.26	30%	36%	\$0.08	292.83	314.41	7th Power Plan
Irrigation - UT	Motors	Wheel/Hand - Gasket Replacement	acres	Existing	266.65	5	\$6.43	73%	75%	\$0.00	673.36	690.47	7th Power Plan
Irrigation - UT	Motors	Wheel/Hand - Drain Replacement	acres	Existing	272.59	5	\$22.45	73%	75%	\$0.02	682.78	711.65	7th Power Plan
Irrigation - UT	Motors	Wheel/Hand - Pipe Maintenance	acres	Existing	128.07	8	\$29.57	73%	75%	\$0.03	318.79	338.04	7th Power Plan
Irrigation - UT	Motors	Thunderbird - Hub Replacement	acres	Existing	221.32	10	\$164.27	8%	10%	\$0.08	506.68	537.79	7th Power Plan
Irrigation - UT	Motors	Wheel Line - Leveler Maintenance	acres	Existing	65.75	8	\$5.34	15%	18%	\$0.01	211.47	217.61	7th Power Plan
Irrigation - UT	Motors	Center Pivot/Linear - New Sprinkler Package	acres	Existing	89.07	5	\$24.70	6%	32%	\$0.05	2,956.30	3,145.64	7th Power Plan
Irrigation - UT	Motors	Center Pivot/Linear - New Goosenecks	acres	Existing	6.96	15	\$4.03	56%	75%	\$0.05	172.89	180.56	7th Power Plan
Irrigation - UT	Motors	Center Pivot/Linear - New Drop Tubes	acres	Existing	6.81	10	\$6.29	46%	75%	\$0.10	251.88	267.81	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Irrigation - UT	Motors	Pumps (< 100 HP)	motor	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	CA DEER
Irrigation - UT	Motors	Pumps (100 HP+)	motor	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	CA DEER
Irrigation - UT	Motors	Other Motors	motor	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	CA DEER
Irrigation - UT	Motors	Pumps (< 100 HP)	motor	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	CA DEER
Irrigation - UT	Motors	Pumps (100 HP+)	motor	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	CA DEER
Irrigation - UT	Motors	Other Motors	motor	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	CA DEER
Irrigation - UT	Motors	Wheel/Hand - Flow Control Nozzle Replacement	acres	Existing	60.32	4	\$9.31	4%	5%	\$0.03	72.01	76.55	7th Power Plan
Irrigation - UT	Motors	Wheel/Hand - Nozzle Replacement	acres	Existing	61.63	4	\$3.48	55%	62%	\$0.01	520.62	543.98	7th Power Plan
Irrigation - UT	Motors	Wheel/Hand - Impact Sprinkler Maintenance	acres	Existing	42.18	5	\$20.26	30%	36%	\$0.08	292.83	314.41	7th Power Plan
Irrigation - UT	Motors	Wheel/Hand - Gasket Replacement	acres	Existing	266.65	5	\$6.43	73%	75%	\$0.00	673.36	690.47	7th Power Plan
Irrigation - UT	Motors	Wheel/Hand - Drain Replacement	acres	Existing	272.59	5	\$22.45	73%	75%	\$0.02	682.78	711.65	7th Power Plan
Irrigation - UT	Motors	Wheel/Hand - Pipe Maintenance	acres	Existing	128.07	8	\$29.57	73%	75%	\$0.03	318.79	338.04	7th Power Plan
Irrigation - UT	Motors	Thunderbird - Hub Replacement	acres	Existing	221.32	10	\$164.27	8%	10%	\$0.08	506.68	537.79	7th Power Plan
Irrigation - UT	Motors	Wheel Line - Leveler Maintenance	acres	Existing	65.75	8	\$5.34	15%	18%	\$0.01	211.47	217.61	7th Power Plan
Irrigation - UT	Motors	Center Pivot/Linear - New Sprinkler Package	acres	Existing	89.07	5	\$24.70	6%	32%	\$0.05	2,956.30	3,145.64	7th Power Plan
Irrigation - UT	Motors	Center Pivot/Linear - New Goosenecks	acres	Existing	6.96	15	\$4.03	56%	75%	\$0.05	172.89	180.56	7th Power Plan
Irrigation - UT	Motors	Center Pivot/Linear - New Drop Tubes	acres	Existing	6.81	10	\$6.29	46%	75%	\$0.10	251.88	267.81	7th Power Plan
Irrigation - UT	Motors	Center Pivot/Linear - Boot Gasket Replacement	acres	Existing	11.63	8	\$2.13	10%	12%	\$0.02	26.21	27.32	7th Power Plan
Irrigation - UT	Motors	Center Pivot/Linear - Tower Gasket Replacement	acres	Existing	2.79	8	\$5.11	73%	75%	\$0.22	6.90	7.42	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Irrigation - UT	Motors	Center Pivot - Low Energy Spray Application	acres	Existing	480.81	10	\$21.33	1%	9%	\$0.00	0.00	4,672.92	7th Power Plan
Irrigation - UT	Motors	Low Pressure Regulators	acres	Existing	304.47	10	\$75.33	53%	60%	\$0.03	2,533.46	2,572.49	7th Power Plan
Irrigation - UT	Motors	Motors - Variable Frequency Drive	service point	Existing	10,225.12	10	\$3,075.23	15%	30%	\$0.03	3,608.58	3,758.69	UNIDO Study on Industrial Energy Efficiency
Irrigation - UT	Motors	Scientific Irrigation Practices	acres	Existing	69.74	1	\$10.74	43%	75%	\$0.12	2,835.98	3,049.31	Custom - prior study
Irrigation - UT	Motors	Green Motor Rewind	rewind motor	Existing	1,347.39	20	\$458.56	12%	75%	\$0.02	568.66	584.23	7th Power Plan
Irrigation - UT	Motors	Pump Equipment Upgrade	acres	Existing	249.55	10	\$2,050.61	8%	38%	\$0.84	169.11	181.74	7th Power Plan
Irrigation - UT	Motors	Wheel/Hand - Flow Control Nozzle Replacement	acres	New	62.27	4	\$9.31	4%	5%	\$0.03	0.85	0.87	7th Power Plan
Irrigation - UT	Motors	Wheel/Hand - Nozzle Replacement	acres	New	62.89	4	\$3.48	55%	62%	\$0.01	6.03	6.13	7th Power Plan

Washington Irrigation Measures Assumptions

Table H-19 Comparison of 7th Plan and RTF Irrigation Measures in Washington

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Irrigation - WA	Motors	Pumps (< 100 HP)	motor	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	CA DEER
Irrigation - WA	Motors	Pumps (100 HP+)	motor	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	CA DEER
Irrigation - WA	Motors	Other Motors	motor	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	CA DEER
Irrigation - WA	Motors	Pumps (< 100 HP)	motor	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	CA DEER
Irrigation - WA	Motors	Pumps (100 HP+)	motor	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	CA DEER
Irrigation - WA	Motors	Other Motors	motor	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	CA DEER
Irrigation - WA	Motors	Wheel/Hand - Flow Control Nozzle Replacement	acres	Existing	67.09	4	\$9.31	4%	5%	\$0.04	46.84	49.62	7th Power Plan
Irrigation - WA	Motors	Wheel/Hand - Nozzle Replacement	acres	Existing	68.45	4	\$3.48	55%	62%	\$0.01	337.77	352.51	7th Power Plan
Irrigation - WA	Motors	Wheel/Hand - Impact Sprinkler Maintenance	acres	Existing	58.17	5	\$20.26	30%	36%	\$0.07	236.39	252.42	7th Power Plan
Irrigation - WA	Motors	Wheel/Hand - Gasket Replacement	acres	Existing	367.44	5	\$6.43	73%	75%	\$0.00	542.35	554.51	7th Power Plan
Irrigation - WA	Motors	Wheel/Hand - Drain Replacement	acres	Existing	375.23	5	\$22.45	73%	75%	\$0.01	549.08	571.26	7th Power Plan
Irrigation - WA	Motors	Wheel/Hand - Pipe Maintenance	acres	Existing	179.43	8	\$29.57	73%	75%	\$0.03	262.40	273.61	7th Power Plan
Irrigation - WA	Motors	Thunderbird - Hub Replacement	acres	Existing	304.98	10	\$164.27	8%	10%	\$0.07	408.39	431.75	7th Power Plan
Irrigation - WA	Motors	Wheel Line - Leveler Maintenance	acres	Existing	90.10	8	\$5.34	15%	18%	\$0.01	168.19	174.63	7th Power Plan
Irrigation - WA	Motors	Center Pivot/Linear - New Sprinkler Package	acres	Existing	115.95	5	\$24.80	6%	32%	\$0.05	2,260.60	2,395.19	7th Power Plan
Irrigation - WA	Motors	Center Pivot/Linear - New Goosenecks	acres	Existing	9.05	15	\$4.05	56%	75%	\$0.05	131.88	137.46	7th Power Plan
Irrigation - WA	Motors	Center Pivot/Linear - New Drop Tubes	acres	Existing	8.86	10	\$6.31	46%	75%	\$0.09	192.65	203.95	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Irrigation - WA	Motors	Pumps (< 100 HP)	motor	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	CA DEER
Irrigation - WA	Motors	Pumps (100 HP+)	motor	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	CA DEER
Irrigation - WA	Motors	Other Motors	motor	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	CA DEER
Irrigation - WA	Motors	Pumps (< 100 HP)	motor	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	CA DEER
Irrigation - WA	Motors	Pumps (100 HP+)	motor	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	CA DEER
Irrigation - WA	Motors	Other Motors	motor	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	CA DEER
Irrigation - WA	Motors	Wheel/Hand - Flow Control Nozzle Replacement	acres	Existing	67.09	4	\$9.31	4%	5%	\$0.04	46.84	49.62	7th Power Plan
Irrigation - WA	Motors	Wheel/Hand - Nozzle Replacement	acres	Existing	68.45	4	\$3.48	55%	62%	\$0.01	337.77	352.51	7th Power Plan
Irrigation - WA	Motors	Wheel/Hand - Impact Sprinkler Maintenance	acres	Existing	58.17	5	\$20.26	30%	36%	\$0.07	236.39	252.42	7th Power Plan
Irrigation - WA	Motors	Wheel/Hand - Gasket Replacement	acres	Existing	367.44	5	\$6.43	73%	75%	\$0.00	542.35	554.51	7th Power Plan
Irrigation - WA	Motors	Wheel/Hand - Drain Replacement	acres	Existing	375.23	5	\$22.45	73%	75%	\$0.01	549.08	571.26	7th Power Plan
Irrigation - WA	Motors	Wheel/Hand - Pipe Maintenance	acres	Existing	179.43	8	\$29.57	73%	75%	\$0.03	262.40	273.61	7th Power Plan
Irrigation - WA	Motors	Thunderbird - Hub Replacement	acres	Existing	304.98	10	\$164.27	8%	10%	\$0.07	408.39	431.75	7th Power Plan
Irrigation - WA	Motors	Wheel Line - Leveler Maintenance	acres	Existing	90.10	8	\$5.34	15%	18%	\$0.01	168.19	174.63	7th Power Plan
Irrigation - WA	Motors	Center Pivot/Linear - New Sprinkler Package	acres	Existing	115.95	5	\$24.80	6%	32%	\$0.05	2,260.60	2,395.19	7th Power Plan
Irrigation - WA	Motors	Center Pivot/Linear - New Goosenecks	acres	Existing	9.05	15	\$4.05	56%	75%	\$0.05	131.88	137.46	7th Power Plan
Irrigation - WA	Motors	Center Pivot/Linear - New Drop Tubes	acres	Existing	8.86	10	\$6.31	46%	75%	\$0.09	192.65	203.95	7th Power Plan
Irrigation - WA	Motors	Center Pivot/Linear - Boot Gasket Replacement	acres	Existing	15.12	8	\$2.13	10%	12%	\$0.02	19.91	20.71	7th Power Plan
Irrigation - WA	Motors	Center Pivot/Linear - Tower Gasket Replacement	acres	Existing	3.63	8	\$5.11	73%	75%	\$0.21	5.26	5.63	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Irrigation - WA	Motors	Center Pivot - Low Energy Spray Application	acres	Existing	624.21	10	\$21.33	1%	9%	\$0.00	0.00	3,666.23	7th Power Plan
Irrigation - WA	Motors	Low Pressure Regulators	acres	Existing	473.76	10	\$39.90	53%	60%	\$0.02	2,387.94	2,418.38	7th Power Plan
Irrigation - WA	Motors	Motors - Variable Frequency Drive	service point	Existing	4,296.52	10	\$1,291.17	15%	30%	\$0.04	2,754.09	2,864.28	UNIDO Study on Industrial Energy Efficiency
Irrigation - WA	Motors	Scientific Irrigation Practices	acres	Existing	90.49	1	\$10.74	43%	75%	\$0.04	2,153.89	2,305.12	Custom - prior study
Irrigation - WA	Motors	Green Motor Rewind	rewind motor	Existing	1,011.81	20	\$341.99	12%	75%	\$0.03	425.31	441.83	7th Power Plan
Irrigation - WA	Motors	Pump Equipment Upgrade	acres	Existing	322.58	10	\$856.36	8%	38%	\$0.34	394.73	421.86	7th Power Plan
Irrigation - WA	Motors	Wheel/Hand - Flow Control Nozzle Replacement	acres	New	69.08	4	\$9.31	4%	5%	\$0.04	0.53	0.54	7th Power Plan
Irrigation - WA	Motors	Wheel/Hand - Nozzle Replacement	acres	New	69.77	4	\$3.48	55%	62%	\$0.01	3.77	3.84	7th Power Plan

Wyoming Irrigation Measures Assumptions

Table H-20 Comparison of 7th Plan and RTF Irrigation Measures in Wyoming

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Irrigation - WY	Motors	Pumps (< 100 HP)	motor	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	CA DEER
Irrigation - WY	Motors	Pumps (100 HP+)	motor	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	CA DEER
Irrigation - WY	Motors	Other Motors	motor	Existing	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	CA DEER
Irrigation - WY	Motors	Pumps (< 100 HP)	motor	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	CA DEER
Irrigation - WY	Motors	Pumps (100 HP+)	motor	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	CA DEER
Irrigation - WY	Motors	Other Motors	motor	New	0.00	15	\$0.00	100%	at stock turnover	\$0.00	0.00	0.00	CA DEER
Irrigation - WY	Motors	Wheel/Hand - Flow Control Nozzle Replacement	acres	Existing	60.46	4	\$9.31	4%	5%	\$0.04	7.93	8.39	7th Power Plan
Irrigation - WY	Motors	Wheel/Hand - Nozzle Replacement	acres	Existing	61.78	4	\$3.48	55%	62%	\$0.01	57.27	59.63	7th Power Plan
Irrigation - WY	Motors	Wheel/Hand - Impact Sprinkler Maintenance	acres	Existing	42.31	5	\$20.26	30%	36%	\$0.10	32.30	34.45	7th Power Plan
Irrigation - WY	Motors	Wheel/Hand - Gasket Replacement	acres	Existing	266.89	5	\$6.43	73%	75%	\$0.01	73.90	75.65	7th Power Plan
Irrigation - WY	Motors	Wheel/Hand - Drain Replacement	acres	Existing	272.97	5	\$22.45	73%	75%	\$0.02	75.02	77.97	7th Power Plan
Irrigation - WY	Motors	Wheel/Hand - Pipe Maintenance	acres	Existing	128.36	8	\$29.57	73%	75%	\$0.04	35.10	37.04	7th Power Plan
Irrigation - WY	Motors	Thunderbird - Hub Replacement	acres	Existing	221.84	10	\$164.27	8%	10%	\$0.10	55.79	58.93	7th Power Plan
Irrigation - WY	Motors	Wheel Line - Leveler Maintenance	acres	Existing	65.83	8	\$5.34	15%	18%	\$0.01	23.22	23.84	7th Power Plan
Irrigation - WY	Motors	Center Pivot/Linear - New Sprinkler Package	acres	Existing	89.29	5	\$24.72	6%	32%	\$0.06	325.95	345.03	7th Power Plan
Irrigation - WY	Motors	Center Pivot/Linear - New Goosenecks	acres	Existing	6.96	15	\$4.03	56%	75%	\$0.06	18.97	19.78	7th Power Plan
Irrigation - WY	Motors	Center Pivot/Linear - New Drop Tubes	acres	Existing	6.82	10	\$6.29	46%	75%	\$0.12	27.77	29.37	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Irrigation - WY	Motors	Center Pivot/Linear - Boot Gasket Replacement	acres	Existing	11.64	8	\$2.13	10%	12%	\$0.03	2.88	2.99	7th Power Plan
Irrigation - WY	Motors	Center Pivot/Linear - Tower Gasket Replacement	acres	Existing	2.79	8	\$5.11	73%	75%	\$0.27	0.76	0.81	7th Power Plan
Irrigation - WY	Motors	Center Pivot - Low Energy Spray Application	acres	Existing	481.08	10	\$21.33	1%	9%	\$0.01	0.00	530.33	7th Power Plan
Irrigation - WY	Motors	Low Pressure Regulators	acres	Existing	304.83	10	\$75.33	53%	60%	\$0.03	288.07	292.07	7th Power Plan
Irrigation - WY	Motors	Motors - Variable Frequency Drive	service point	Existing	4,024.21	10	\$1,208.26	15%	30%	\$0.04	399.88	415.21	UNIDO Study on Industrial Energy Efficiency
Irrigation - WY	Motors	Scientific Irrigation Practices	acres	Existing	69.88	1	\$10.74	43%	75%	\$0.13	312.41	333.92	Custom - prior study
Irrigation - WY	Motors	Green Motor Rewind	rewind motor	Existing	1,348.82	20	\$458.56	12%	75%	\$0.03	62.34	63.93	7th Power Plan
Irrigation - WY	Motors	Pump Equipment Upgrade	acres	Existing	250.01	10	\$804.65	8%	38%	\$0.41	47.42	50.62	7th Power Plan
Irrigation - WY	Motors	Wheel/Hand - Flow Control Nozzle Replacement	acres	New	62.29	4	\$9.31	4%	5%	\$0.04	0.09	0.09	7th Power Plan
Irrigation - WY	Motors	Wheel/Hand - Nozzle Replacement	acres	New	62.92	4	\$3.48	55%	62%	\$0.01	0.63	0.64	7th Power Plan
Irrigation - WY	Motors	Wheel/Hand - Impact Sprinkler Maintenance	acres	New	44.03	5	\$20.26	30%	36%	\$0.10	0.50	0.51	7th Power Plan
Irrigation - WY	Motors	Wheel/Hand - Gasket Replacement	acres	New	269.17	5	\$6.43	75%	75%	\$0.01	0.00	0.00	7th Power Plan
Irrigation - WY	Motors	Wheel/Hand - Drain Replacement	acres	New	277.21	5	\$22.45	75%	75%	\$0.02	0.00	0.00	7th Power Plan
Irrigation - WY	Motors	Wheel/Hand - Pipe Maintenance	acres	New	131.89	8	\$29.57	75%	75%	\$0.03	0.00	0.00	7th Power Plan
Irrigation - WY	Motors	Thunderbird - Hub Replacement	acres	New	228.26	10	\$164.27	8%	10%	\$0.10	1.76	1.78	7th Power Plan
Irrigation - WY	Motors	Wheel Line - Leveler Maintenance	acres	New	66.66	8	\$5.34	15%	18%	\$0.01	0.59	0.59	7th Power Plan
Irrigation - WY	Motors	Center Pivot/Linear - New Sprinkler Package	acres	New	92.09	5	\$24.90	6%	32%	\$0.06	5.05	5.15	7th Power Plan
Irrigation - WY	Motors	Center Pivot/Linear - New Goosenecks	acres	New	7.10	15	\$4.06	56%	75%	\$0.06	0.75	0.76	7th Power Plan
Irrigation - WY	Motors	Center Pivot/Linear - New Drop Tubes	acres	New	7.03	10	\$6.34	56%	75%	\$0.12	0.59	0.60	7th Power Plan
Irrigation - WY	Motors	Center Pivot/Linear - Boot Gasket Replacement	acres	New	11.82	8	\$2.13	10%	12%	\$0.03	0.07	0.07	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Irrigation - WY	Motors	Center Pivot/Linear - Tower Gasket Replacement	acres	New	2.91	8	\$5.11	75%	75%	\$0.27	0.00	0.00	7th Power Plan
Irrigation - WY	Motors	Center Pivot - Low Energy Spray Application	acres	New	483.24	10	\$21.33	1%	9%	\$0.01	0.00	28.97	7th Power Plan
Irrigation - WY	Motors	Low Pressure Regulators	acres	New	308.87	10	\$75.33	53%	60%	\$0.03	16.05	16.08	7th Power Plan
Irrigation - WY	Motors	Motors - Variable Frequency Drive	service point	New	4,077.91	10	\$1,199.62	15%	30%	\$0.04	16.19	16.36	UNIDO Study on Industrial Energy Efficiency
Irrigation - WY	Motors	Scientific Irrigation Practices	acres	New	72.86	1	\$10.74	43%	75%	\$0.13	13.00	13.10	Custom - prior study
Irrigation - WY	Motors	Green Motor Rewind	rewind motor	New	1,364.26	20	\$458.56	11%	75%	\$0.03	2.47	2.49	7th Power Plan
Irrigation - WY	Motors	Pump Equipment Upgrade	acres	New	260.42	10	\$798.91	8%	38%	\$0.41	1.53	1.55	7th Power Plan

STREET LIGHTING MEASURES

California Street Lighting Measures Assumptions

Table H-21 Comparison of 7th Plan and RTF Street Lighting Measures in California

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Street Lighting - CA	Company - 100W	100W Fixture	fixture	Existing	249.50	12	\$18.00	100%	at stock turnover	\$0.01	172.91	172.91	7th Power Plan
Street Lighting - CA	Company - 150W	150W Fixture	fixture	Existing	358.21	12	\$29.00	100%	at stock turnover	\$0.01	59.61	59.61	7th Power Plan
Street Lighting - CA	Company - 250W	250W Fixture	fixture	Existing	645.89	12	\$40.00	100%	at stock turnover	\$0.01	4.64	4.64	7th Power Plan
Street Lighting - CA	Company - 400W	400W Fixture	fixture	Existing	1,136.70	12	\$210.00	100%	at stock turnover	\$0.02	1.95	1.95	7th Power Plan
Street Lighting - CA	Customer - 100W	100W Fixture	fixture	Existing	279.75	12	\$18.00	100%	at stock turnover	\$0.01	108.46	108.46	7th Power Plan
Street Lighting - CA	Customer - 150W	150W Fixture	fixture	Existing	303.64	12	\$29.00	100%	at stock turnover	\$0.01	116.79	116.79	7th Power Plan
Street Lighting - CA	Customer - 250W	250W Fixture	fixture	Existing	656.50	12	\$40.00	100%	at stock turnover	\$0.01	129.18	129.18	7th Power Plan
Street Lighting - CA	Customer - 400W	400W Fixture	fixture	Existing	722.90	12	\$210.00	100%	at stock turnover	\$0.04	28.11	28.11	7th Power Plan
Street Lighting - CA	Customer - 1000W	1000W Fixture	fixture	Existing	0.00	12	\$760.00	100%	at stock turnover	\$0.00	0.00	0.00	7th Power Plan
Street Lighting - CA	Other	Other	fixture	Existing	321.97	12	\$29.00	100%	at stock turnover	\$0.01	181.54	181.54	7th Power Plan
Street Lighting - CA	Company - 100W	100W Fixture	fixture	New	249.50	12	\$18.00	100%	at stock turnover	\$0.01	21.34	21.34	7th Power Plan
Street Lighting - CA	Company - 150W	150W Fixture	fixture	New	358.21	12	\$29.00	100%	at stock turnover	\$0.01	7.36	7.36	7th Power Plan
Street Lighting - CA	Company - 250W	250W Fixture	fixture	New	645.89	12	\$40.00	100%	at stock turnover	\$0.01	0.57	0.57	7th Power Plan
Street Lighting - CA	Company - 400W	400W Fixture	fixture	New	1,136.70	12	\$210.00	100%	at stock turnover	\$0.02	0.24	0.24	7th Power Plan
Street Lighting - CA	Customer - 100W	100W Fixture	fixture	New	279.75	12	\$18.00	100%	at stock turnover	\$0.01	13.39	13.39	7th Power Plan
Street Lighting - CA	Customer - 150W	150W Fixture	fixture	New	303.64	12	\$29.00	100%	at stock turnover	\$0.01	14.42	14.42	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Street Lighting - CA	Customer - 250W	250W Fixture	fixture	New	656.50	12	\$40.00	100%	at stock turnover	\$0.01	15.95	15.95	7th Power Plan
Street Lighting - CA	Customer - 400W	400W Fixture	fixture	New	722.90	12	\$210.00	100%	at stock turnover	\$0.04	3.47	3.47	7th Power Plan
Street Lighting - CA	Customer - 1000W	1000W Fixture	fixture	New	0.00	12	\$760.00	100%	at stock turnover	\$0.00	0.00	0.00	7th Power Plan
Street Lighting - CA	Other	Other	fixture	New	321.97	12	\$29.00	100%	at stock turnover	\$0.01	22.41	22.41	7th Power Plan
Street Lighting - CA	Company - 100W	Smart Dimming Controller	street lights	Existing	82.05	15	\$150.00	0%	40%	\$0.01	24.77	32.29	AEG Research
Street Lighting - CA	Company - 150W	Smart Dimming Controller	street lights	Existing	146.86	15	\$150.00	0%	40%	\$0.01	10.88	13.47	AEG Research
Street Lighting - CA	Company - 250W	Smart Dimming Controller	street lights	Existing	204.39	15	\$150.00	0%	40%	\$0.01	0.64	0.84	AEG Research
Street Lighting - CA	Company - 400W	Smart Dimming Controller	street lights	Existing	303.07	15	\$150.00	0%	40%	\$0.01	0.22	0.30	AEG Research
Street Lighting - CA	Customer - 100W	Smart Dimming Controller	street lights	Existing	80.10	15	\$150.00	0%	40%	\$0.01	24.68	29.40	AEG Research
Street Lighting - CA	Customer - 150W	Smart Dimming Controller	street lights	Existing	116.16	15	\$150.00	0%	40%	\$0.01	28.08	33.16	AEG Research
Street Lighting - CA	Customer - 250W	Smart Dimming Controller	street lights	Existing	205.79	15	\$150.00	0%	40%	\$0.01	18.15	23.78	AEG Research
Street Lighting - CA	Customer - 400W	Smart Dimming Controller	street lights	Existing	192.74	15	\$150.00	0%	40%	\$0.01	3.18	4.40	AEG Research
Street Lighting - CA	Customer - 1000W	Smart Dimming Controller	street lights	Existing	0.00	15	\$150.00	0%	40%	\$0.01	0.00	0.00	AEG Research
Street Lighting - CA	Other	Smart Dimming Controller	street lights	Existing	132.01	15	\$150.00	0%	40%	\$0.01	33.13	41.03	AEG Research
Street Lighting - CA	Company - 100W	Smart Dimming Controller	street lights	New	70.15	15	\$150.00	0%	40%	\$0.01	1.21	1.32	AEG Research
Street Lighting - CA	Company - 150W	Smart Dimming Controller	street lights	New	129.77	15	\$150.00	0%	40%	\$0.01	0.54	0.57	AEG Research
Street Lighting - CA	Company - 250W	Smart Dimming Controller	street lights	New	173.57	15	\$150.00	0%	40%	\$0.01	0.03	0.03	AEG Research
Street Lighting - CA	Company - 400W	Smart Dimming Controller	street lights	New	248.82	15	\$150.00	0%	40%	\$0.01	0.01	0.01	AEG Research
Street Lighting - CA	Customer - 100W	Smart Dimming Controller	street lights	New	72.50	15	\$150.00	0%	40%	\$0.01	1.22	1.29	AEG Research

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Street Lighting - CA	Customer - 150W	Smart Dimming Controller	street lights	New	105.70	15	\$150.00	0%	40%	\$0.01	1.39	1.47	AEG Research
Street Lighting - CA	Customer - 250W	Smart Dimming Controller	street lights	New	175.41	15	\$150.00	0%	40%	\$0.01	0.89	0.97	AEG Research
Street Lighting - CA	Customer - 400W	Smart Dimming Controller	street lights	New	158.24	15	\$150.00	0%	40%	\$0.01	0.15	0.17	AEG Research
Street Lighting - CA	Customer - 1000W	Smart Dimming Controller	street lights	New	0.00	15	\$150.00	0%	40%	\$0.01	0.00	0.00	AEG Research
Street Lighting - CA	Other	Smart Dimming Controller	street lights	New	116.64	15	\$150.00	0%	40%	\$0.01	1.63	1.75	AEG Research

Idaho Street Lighting Measures Assumptions

Table H-22 Comparison of 7th Plan and RTF Street Lighting Measures in Idaho

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Street Lighting - ID	Company - 100W	100W Fixture	fixture	Existing	249.50	12	\$18.00	100%	at stock turnover	-\$0.05	57.06	57.06	7th Power Plan
Street Lighting - ID	Company - 150W	150W Fixture	fixture	Existing	358.21	12	\$29.00	100%	at stock turnover	-\$0.03	2.89	2.89	7th Power Plan
Street Lighting - ID	Company - 250W	250W Fixture	fixture	Existing	645.89	12	\$40.00	100%	at stock turnover	-\$0.01	12.16	12.16	7th Power Plan
Street Lighting - ID	Company - 400W	400W Fixture	fixture	Existing	1,136.70	12	\$210.00	100%	at stock turnover	\$0.01	7.65	7.65	7th Power Plan
Street Lighting - ID	Customer - 100W	100W Fixture	fixture	Existing	249.50	12	\$18.00	100%	at stock turnover	-\$0.05	467.45	467.45	7th Power Plan
Street Lighting - ID	Customer - 150W	150W Fixture	fixture	Existing	357.32	12	\$29.00	100%	at stock turnover	-\$0.03	55.00	55.00	7th Power Plan
Street Lighting - ID	Customer - 250W	250W Fixture	fixture	Existing	645.89	12	\$40.00	100%	at stock turnover	-\$0.01	167.53	167.53	7th Power Plan
Street Lighting - ID	Customer - 400W	400W Fixture	fixture	Existing	1,085.88	12	\$210.00	100%	at stock turnover	\$0.01	147.63	147.63	7th Power Plan
Street Lighting - ID	Customer - 1000W	1000W Fixture	fixture	Existing	0.00	12	\$760.00	100%	at stock turnover	\$0.00	0.00	0.00	7th Power Plan
Street Lighting - ID	Other	Other	fixture	Existing	351.04	12	\$29.00	100%	at stock turnover	-\$0.03	87.26	87.26	7th Power Plan
Street Lighting - ID	Company - 100W	100W Fixture	fixture	New	249.50	12	\$18.00	100%	at stock turnover	-\$0.05	7.11	7.11	7th Power Plan
Street Lighting - ID	Company - 150W	150W Fixture	fixture	New	358.21	12	\$29.00	100%	at stock turnover	-\$0.03	0.36	0.36	7th Power Plan
Street Lighting - ID	Company - 250W	250W Fixture	fixture	New	645.89	12	\$40.00	100%	at stock turnover	-\$0.01	1.52	1.52	7th Power Plan
Street Lighting - ID	Company - 400W	400W Fixture	fixture	New	1,136.70	12	\$210.00	100%	at stock turnover	\$0.01	0.95	0.95	7th Power Plan
Street Lighting - ID	Customer - 100W	100W Fixture	fixture	New	249.50	12	\$18.00	100%	at stock turnover	-\$0.05	58.26	58.26	7th Power Plan
Street Lighting - ID	Customer - 150W	150W Fixture	fixture	New	357.32	12	\$29.00	100%	at stock turnover	-\$0.03	6.85	6.85	7th Power Plan
Street Lighting - ID	Customer - 250W	250W Fixture	fixture	New	645.89	12	\$40.00	100%	at stock turnover	-\$0.01	20.88	20.88	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Street Lighting - ID	Customer - 400W	400W Fixture	fixture	New	1,085.88	12	\$210.00	100%	at stock turnover	\$0.01	18.40	18.40	7th Power Plan
Street Lighting - ID	Customer - 1000W	1000W Fixture	fixture	New	0.00	12	\$760.00	100%	at stock turnover	\$0.00	0.00	0.00	7th Power Plan
Street Lighting - ID	Other	Other	fixture	New	351.04	12	\$29.00	100%	at stock turnover	-\$0.03	10.88	10.88	7th Power Plan
Street Lighting - ID	Company - 100W	Smart Dimming Controller	street lights	Existing	81.73	15	\$150.00	0%	40%	\$0.01	8.23	10.69	AEG Research
Street Lighting - ID	Company - 150W	Smart Dimming Controller	street lights	Existing	146.40	15	\$150.00	0%	40%	\$0.01	0.53	0.66	AEG Research
Street Lighting - ID	Company - 250W	Smart Dimming Controller	street lights	Existing	203.55	15	\$150.00	0%	40%	\$0.01	1.68	2.21	AEG Research
Street Lighting - ID	Company - 400W	Smart Dimming Controller	street lights	Existing	301.59	15	\$150.00	0%	40%	\$0.01	0.87	1.20	AEG Research
Street Lighting - ID	Customer - 100W	Smart Dimming Controller	street lights	Existing	81.73	15	\$150.00	0%	40%	\$0.01	67.44	87.60	AEG Research
Street Lighting - ID	Customer - 150W	Smart Dimming Controller	street lights	Existing	144.63	15	\$150.00	0%	40%	\$0.01	10.45	12.82	AEG Research
Street Lighting - ID	Customer - 250W	Smart Dimming Controller	street lights	Existing	203.55	15	\$150.00	0%	40%	\$0.01	23.16	30.38	AEG Research
Street Lighting - ID	Customer - 400W	Smart Dimming Controller	street lights	Existing	288.11	15	\$150.00	0%	40%	\$0.01	16.83	23.20	AEG Research
Street Lighting - ID	Customer - 1000W	Smart Dimming Controller	street lights	Existing	0.00	15	\$150.00	0%	40%	\$0.01	0.00	0.00	AEG Research
Street Lighting - ID	Other	Smart Dimming Controller	street lights	Existing	143.47	15	\$150.00	0%	40%	\$0.01	16.03	19.79	AEG Research
Street Lighting - ID	Company - 100W	Smart Dimming Controller	street lights	New	70.44	15	\$150.00	0%	40%	\$0.01	0.40	0.44	AEG Research
Street Lighting - ID	Company - 150W	Smart Dimming Controller	street lights	New	130.19	15	\$150.00	0%	40%	\$0.01	0.03	0.03	AEG Research
Street Lighting - ID	Company - 250W	Smart Dimming Controller	street lights	New	174.32	15	\$150.00	0%	40%	\$0.01	0.08	0.09	AEG Research
Street Lighting - ID	Company - 400W	Smart Dimming Controller	street lights	New	250.14	15	\$150.00	0%	40%	\$0.01	0.04	0.05	AEG Research
Street Lighting - ID	Customer - 100W	Smart Dimming Controller	street lights	New	70.44	15	\$150.00	0%	40%	\$0.01	3.30	3.62	AEG Research
Street Lighting - ID	Customer - 150W	Smart Dimming Controller	street lights	New	129.11	15	\$150.00	0%	40%	\$0.01	0.52	0.55	AEG Research

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Street Lighting - ID	Customer - 250W	Smart Dimming Controller	street lights	New	174.32	15	\$150.00	0%	40%	\$0.01	1.13	1.25	AEG Research
Street Lighting - ID	Customer - 400W	Smart Dimming Controller	street lights	New	238.96	15	\$150.00	0%	40%	\$0.01	0.81	0.92	AEG Research
Street Lighting - ID	Customer - 1000W	Smart Dimming Controller	street lights	New	0.00	15	\$150.00	0%	40%	\$0.01	0.00	0.00	AEG Research
Street Lighting - ID	Other	Smart Dimming Controller	street lights	New	127.58	15	\$150.00	0%	40%	\$0.01	0.79	0.85	AEG Research

Utah Street Lighting Measures Assumptions

Table H-23 Comparison of 7th Plan and RTF Street Lighting Measures in Utah

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Street Lighting - UT	Company - 100W	100W Fixture	fixture	Existing	249.51	12	\$18.00	100%	at stock turnover	\$0.01	3,944.56	3,944.56	7th Power Plan
Street Lighting - UT	Company - 150W	150W Fixture	fixture	Existing	323.30	12	\$29.00	100%	at stock turnover	\$0.01	576.92	576.92	7th Power Plan
Street Lighting - UT	Company - 250W	250W Fixture	fixture	Existing	643.87	12	\$40.00	100%	at stock turnover	\$0.01	1,036.02	1,036.02	7th Power Plan
Street Lighting - UT	Company - 400W	400W Fixture	fixture	Existing	1,120.21	12	\$210.00	100%	at stock turnover	\$0.02	701.34	701.34	7th Power Plan
Street Lighting - UT	Customer - 100W	100W Fixture	fixture	Existing	252.97	12	\$18.00	100%	at stock turnover	\$0.01	5,274.30	5,274.30	7th Power Plan
Street Lighting - UT	Customer - 150W	150W Fixture	fixture	Existing	359.82	12	\$29.00	100%	at stock turnover	\$0.01	5,023.63	5,023.63	7th Power Plan
Street Lighting - UT	Customer - 250W	250W Fixture	fixture	Existing	898.62	12	\$40.00	100%	at stock turnover	\$0.00	1,988.38	1,988.38	7th Power Plan
Street Lighting - UT	Customer - 400W	400W Fixture	fixture	Existing	1,188.74	12	\$210.00	100%	at stock turnover	\$0.02	5,718.16	5,718.16	7th Power Plan
Street Lighting - UT	Customer - 1000W	1000W Fixture	fixture	Existing	306.82	12	\$760.00	100%	at stock turnover	\$0.24	131.41	131.41	7th Power Plan
Street Lighting - UT	Other	Other	fixture	Existing	339.55	12	\$29.00	100%	at stock turnover	\$0.01	2,618.09	2,618.09	7th Power Plan
Street Lighting - UT	Company - 100W	100W Fixture	fixture	New	249.51	12	\$18.00	100%	at stock turnover	\$0.01	489.62	489.62	7th Power Plan
Street Lighting - UT	Company - 150W	150W Fixture	fixture	New	323.30	12	\$29.00	100%	at stock turnover	\$0.01	71.61	71.61	7th Power Plan
Street Lighting - UT	Company - 250W	250W Fixture	fixture	New	643.87	12	\$40.00	100%	at stock turnover	\$0.01	128.60	128.60	7th Power Plan
Street Lighting - UT	Company - 400W	400W Fixture	fixture	New	1,120.21	12	\$210.00	100%	at stock turnover	\$0.02	87.05	87.05	7th Power Plan
Street Lighting - UT	Customer - 100W	100W Fixture	fixture	New	252.97	12	\$18.00	100%	at stock turnover	\$0.01	654.67	654.67	7th Power Plan
Street Lighting - UT	Customer - 150W	150W Fixture	fixture	New	359.82	12	\$29.00	100%	at stock turnover	\$0.01	623.56	623.56	7th Power Plan
Street Lighting - UT	Customer - 250W	250W Fixture	fixture	New	898.62	12	\$40.00	100%	at stock turnover	\$0.00	246.81	246.81	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Street Lighting - UT	Customer - 400W	400W Fixture	fixture	New	1,188.74	12	\$210.00	100%	at stock turnover	\$0.02	709.77	709.77	7th Power Plan
Street Lighting - UT	Customer - 1000W	1000W Fixture	fixture	New	306.82	12	\$760.00	100%	at stock turnover	\$0.24	16.31	16.31	7th Power Plan
Street Lighting - UT	Other	Other	fixture	New	339.55	12	\$29.00	100%	at stock turnover	\$0.01	324.97	324.97	7th Power Plan
Street Lighting - UT	Company - 100W	Smart Dimming Controller	street lights	Existing	81.77	15	\$150.00	0%	40%	\$0.00	568.76	738.73	AEG Research
Street Lighting - UT	Company - 150W	Smart Dimming Controller	street lights	Existing	132.18	15	\$150.00	0%	40%	\$0.00	105.91	130.77	AEG Research
Street Lighting - UT	Company - 250W	Smart Dimming Controller	street lights	Existing	203.02	15	\$150.00	0%	40%	\$0.00	143.13	187.77	AEG Research
Street Lighting - UT	Company - 400W	Smart Dimming Controller	street lights	Existing	297.39	15	\$150.00	0%	40%	\$0.00	79.93	110.15	AEG Research
Street Lighting - UT	Customer - 100W	Smart Dimming Controller	street lights	Existing	81.21	15	\$150.00	0%	40%	\$0.00	803.91	1,031.18	AEG Research
Street Lighting - UT	Customer - 150W	Smart Dimming Controller	street lights	Existing	143.03	15	\$150.00	0%	40%	\$0.00	1,022.09	1,238.56	AEG Research
Street Lighting - UT	Customer - 250W	Smart Dimming Controller	street lights	Existing	236.22	15	\$150.00	0%	40%	\$0.00	518.89	604.57	AEG Research
Street Lighting - UT	Customer - 400W	Smart Dimming Controller	street lights	Existing	306.76	15	\$150.00	0%	40%	\$0.00	690.02	936.42	AEG Research
Street Lighting - UT	Customer - 1000W	Smart Dimming Controller	street lights	Existing	77.49	15	\$150.00	0%	40%	\$0.00	14.15	19.82	AEG Research
Street Lighting - UT	Other	Smart Dimming Controller	street lights	Existing	138.83	15	\$150.00	0%	40%	\$0.00	480.60	593.42	AEG Research
Street Lighting - UT	Company - 100W	Smart Dimming Controller	street lights	New	70.29	15	\$150.00	0%	40%	\$0.00	27.74	30.36	AEG Research
Street Lighting - UT	Company - 150W	Smart Dimming Controller	street lights	New	117.30	15	\$150.00	0%	40%	\$0.00	5.21	5.60	AEG Research
Street Lighting - UT	Company - 250W	Smart Dimming Controller	street lights	New	173.38	15	\$150.00	0%	40%	\$0.00	6.97	7.66	AEG Research
Street Lighting - UT	Company - 400W	Smart Dimming Controller	street lights	New	245.83	15	\$150.00	0%	40%	\$0.00	3.85	4.32	AEG Research
Street Lighting - UT	Customer - 100W	Smart Dimming Controller	street lights	New	70.37	15	\$150.00	0%	40%	\$0.00	39.30	42.81	AEG Research
Street Lighting - UT	Customer - 150W	Smart Dimming Controller	street lights	New	128.40	15	\$150.00	0%	40%	\$0.00	50.50	53.84	AEG Research

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Street Lighting - UT	Customer - 250W	Smart Dimming Controller	street lights	New	217.09	15	\$150.00	0%	40%	\$0.00	25.81	27.14	AEG Research
Street Lighting - UT	Customer - 400W	Smart Dimming Controller	street lights	New	256.21	15	\$150.00	0%	40%	\$0.00	33.36	37.16	AEG Research
Street Lighting - UT	Customer - 1000W	Smart Dimming Controller	street lights	New	63.37	15	\$150.00	0%	40%	\$0.00	0.68	0.77	AEG Research
Street Lighting - UT	Other	Smart Dimming Controller	street lights	New	123.20	15	\$150.00	0%	40%	\$0.00	23.67	25.41	AEG Research

Washington Street Lighting Measures Assumptions

Table H-24 Comparison of 7th Plan and RTF Street Lighting Measures in Utah

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Street Lighting - WA	Company - 100W	100W Fixture	fixture	Existing	250.57	12	\$18.00	100%	at stock turnover	-\$0.05	569.00	569.00	7th Power Plan
Street Lighting - WA	Company - 150W	150W Fixture	fixture	Existing	355.47	12	\$29.00	100%	at stock turnover	-\$0.03	806.95	806.95	7th Power Plan
Street Lighting - WA	Company - 250W	250W Fixture	fixture	Existing	659.23	12	\$40.00	100%	at stock turnover	-\$0.01	209.48	209.48	7th Power Plan
Street Lighting - WA	Company - 400W	400W Fixture	fixture	Existing	1,067.17	12	\$210.00	100%	at stock turnover	\$0.01	299.69	299.69	7th Power Plan
Street Lighting - WA	Customer - 100W	100W Fixture	fixture	Existing	250.58	12	\$18.00	100%	at stock turnover	-\$0.05	215.17	215.17	7th Power Plan
Street Lighting - WA	Customer - 150W	150W Fixture	fixture	Existing	213.99	12	\$29.00	100%	at stock turnover	-\$0.05	318.14	318.14	7th Power Plan
Street Lighting - WA	Customer - 250W	250W Fixture	fixture	Existing	648.29	12	\$40.00	100%	at stock turnover	-\$0.01	193.43	193.43	7th Power Plan
Street Lighting - WA	Customer - 400W	400W Fixture	fixture	Existing	880.31	12	\$210.00	100%	at stock turnover	\$0.01	251.45	251.45	7th Power Plan
Street Lighting - WA	Customer - 1000W	1000W Fixture	fixture	Existing	1,185.36	12	\$760.00	100%	at stock turnover	\$0.06	24.94	24.94	7th Power Plan
Street Lighting - WA	Other	Other	fixture	Existing	300.09	12	\$29.00	100%	at stock turnover	-\$0.04	714.58	714.58	7th Power Plan
Street Lighting - WA	Company - 100W	100W Fixture	fixture	New	250.57	12	\$18.00	100%	at stock turnover	-\$0.05	71.01	71.01	7th Power Plan
Street Lighting - WA	Company - 150W	150W Fixture	fixture	New	355.47	12	\$29.00	100%	at stock turnover	-\$0.03	100.71	100.71	7th Power Plan
Street Lighting - WA	Company - 250W	250W Fixture	fixture	New	659.23	12	\$40.00	100%	at stock turnover	-\$0.01	26.14	26.14	7th Power Plan
Street Lighting - WA	Company - 400W	400W Fixture	fixture	New	1,067.17	12	\$210.00	100%	at stock turnover	\$0.01	37.40	37.40	7th Power Plan
Street Lighting - WA	Customer - 100W	100W Fixture	fixture	New	250.58	12	\$18.00	100%	at stock turnover	-\$0.05	26.85	26.85	7th Power Plan
Street Lighting - WA	Customer - 150W	150W Fixture	fixture	New	213.99	12	\$29.00	100%	at stock turnover	-\$0.05	39.70	39.70	7th Power Plan
Street Lighting - WA	Customer - 250W	250W Fixture	fixture	New	648.29	12	\$40.00	100%	at stock turnover	-\$0.01	24.14	24.14	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Street Lighting - WA	Customer - 400W	400W Fixture	fixture	New	880.31	12	\$210.00	100%	at stock turnover	\$0.01	31.38	31.38	7th Power Plan
Street Lighting - WA	Customer - 1000W	1000W Fixture	fixture	New	1,185.36	12	\$760.00	100%	at stock turnover	\$0.06	3.11	3.11	7th Power Plan
Street Lighting - WA	Other	Other	fixture	New	300.09	12	\$29.00	100%	at stock turnover	-\$0.04	89.18	89.18	7th Power Plan
Street Lighting - WA	Company - 100W	Smart Dimming Controller	street lights	Existing	81.88	15	\$150.00	0%	40%	\$0.01	82.61	107.15	AEG Research
Street Lighting - WA	Company - 150W	Smart Dimming Controller	street lights	Existing	145.14	15	\$150.00	0%	40%	\$0.01	148.70	183.50	AEG Research
Street Lighting - WA	Company - 250W	Smart Dimming Controller	street lights	Existing	204.81	15	\$150.00	0%	40%	\$0.01	30.02	39.06	AEG Research
Street Lighting - WA	Company - 400W	Smart Dimming Controller	street lights	Existing	281.37	15	\$150.00	0%	40%	\$0.01	34.60	47.52	AEG Research
Street Lighting - WA	Customer - 100W	Smart Dimming Controller	street lights	Existing	81.34	15	\$150.00	0%	40%	\$0.01	31.80	41.08	AEG Research
Street Lighting - WA	Customer - 150W	Smart Dimming Controller	street lights	Existing	87.46	15	\$150.00	0%	40%	\$0.01	58.43	72.15	AEG Research
Street Lighting - WA	Customer - 250W	Smart Dimming Controller	street lights	Existing	203.87	15	\$150.00	0%	40%	\$0.01	26.88	35.22	AEG Research
Street Lighting - WA	Customer - 400W	Smart Dimming Controller	street lights	Existing	233.56	15	\$150.00	0%	40%	\$0.01	28.67	39.52	AEG Research
Street Lighting - WA	Customer - 1000W	Smart Dimming Controller	street lights	Existing	297.24	15	\$150.00	0%	40%	\$0.01	2.72	3.80	AEG Research
Street Lighting - WA	Other	Smart Dimming Controller	street lights	Existing	122.65	15	\$150.00	0%	40%	\$0.01	131.25	162.07	AEG Research
Street Lighting - WA	Company - 100W	Smart Dimming Controller	street lights	New	70.74	15	\$150.00	0%	40%	\$0.01	4.05	4.44	AEG Research
Street Lighting - WA	Company - 150W	Smart Dimming Controller	street lights	New	129.27	15	\$150.00	0%	40%	\$0.01	7.36	7.92	AEG Research
Street Lighting - WA	Company - 250W	Smart Dimming Controller	street lights	New	176.62	15	\$150.00	0%	40%	\$0.01	1.47	1.62	AEG Research
Street Lighting - WA	Company - 400W	Smart Dimming Controller	street lights	New	234.36	15	\$150.00	0%	40%	\$0.01	1.68	1.88	AEG Research
Street Lighting - WA	Customer - 100W	Smart Dimming Controller	street lights	New	70.45	15	\$150.00	0%	40%	\$0.01	1.56	1.71	AEG Research
Street Lighting - WA	Customer - 150W	Smart Dimming Controller	street lights	New	77.87	15	\$150.00	0%	40%	\$0.01	2.89	3.11	AEG Research

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Street Lighting - WA	Customer - 250W	Smart Dimming Controller	street lights	New	175.02	15	\$150.00	0%	40%	\$0.01	1.31	1.45	AEG Research
Street Lighting - WA	Customer - 400W	Smart Dimming Controller	street lights	New	194.11	15	\$150.00	0%	40%	\$0.01	1.39	1.56	AEG Research
Street Lighting - WA	Customer - 1000W	Smart Dimming Controller	street lights	New	245.02	15	\$150.00	0%	40%	\$0.01	0.13	0.15	AEG Research
Street Lighting - WA	Other	Smart Dimming Controller	street lights	New	109.20	15	\$150.00	0%	40%	\$0.01	6.49	6.99	AEG Research

Wyoming Street Lighting Measures Assumptions

Table H-25 Comparison of 7th Plan and RTF Street Lighting Measures in Wyoming

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Street Lighting - WY	Company - 100W	100W Fixture	fixture	Existing	249.50	12	\$18.00	100%	at stock turnover	\$0.01	1,424.07	1,424.07	7th Power Plan
Street Lighting - WY	Company - 150W	150W Fixture	fixture	Existing	349.80	12	\$29.00	100%	at stock turnover	\$0.01	689.94	689.94	7th Power Plan
Street Lighting - WY	Company - 250W	250W Fixture	fixture	Existing	645.89	12	\$40.00	100%	at stock turnover	\$0.01	361.10	361.10	7th Power Plan
Street Lighting - WY	Company - 400W	400W Fixture	fixture	Existing	1,103.45	12	\$210.00	100%	at stock turnover	\$0.02	384.93	384.93	7th Power Plan
Street Lighting - WY	Customer - 100W	100W Fixture	fixture	Existing	249.50	12	\$18.00	100%	at stock turnover	\$0.01	5.73	5.73	7th Power Plan
Street Lighting - WY	Customer - 150W	150W Fixture	fixture	Existing	215.40	12	\$29.00	100%	at stock turnover	\$0.02	358.55	358.55	7th Power Plan
Street Lighting - WY	Customer - 250W	250W Fixture	fixture	Existing	645.89	12	\$40.00	100%	at stock turnover	\$0.01	50.12	50.12	7th Power Plan
Street Lighting - WY	Customer - 400W	400W Fixture	fixture	Existing	749.71	12	\$210.00	100%	at stock turnover	\$0.03	178.70	178.70	7th Power Plan
Street Lighting - WY	Customer - 1000W	1000W Fixture	fixture	Existing	1,172.91	12	\$760.00	100%	at stock turnover	\$0.08	1.86	1.86	7th Power Plan
Street Lighting - WY	Other	Other	fixture	Existing	265.94	12	\$29.00	100%	at stock turnover	\$0.01	781.22	781.22	7th Power Plan
Street Lighting - WY	Company - 100W	100W Fixture	fixture	New	249.50	12	\$18.00	100%	at stock turnover	\$0.01	177.96	177.96	7th Power Plan
Street Lighting - WY	Company - 150W	150W Fixture	fixture	New	349.80	12	\$29.00	100%	at stock turnover	\$0.01	86.22	86.22	7th Power Plan
Street Lighting - WY	Company - 250W	250W Fixture	fixture	New	645.89	12	\$40.00	100%	at stock turnover	\$0.01	45.13	45.13	7th Power Plan
Street Lighting - WY	Company - 400W	400W Fixture	fixture	New	1,103.45	12	\$210.00	100%	at stock turnover	\$0.02	48.10	48.10	7th Power Plan
Street Lighting - WY	Customer - 100W	100W Fixture	fixture	New	249.50	12	\$18.00	100%	at stock turnover	\$0.01	0.72	0.72	7th Power Plan
Street Lighting - WY	Customer - 150W	150W Fixture	fixture	New	215.40	12	\$29.00	100%	at stock turnover	\$0.02	44.81	44.81	7th Power Plan
Street Lighting - WY	Customer - 250W	250W Fixture	fixture	New	645.89	12	\$40.00	100%	at stock turnover	\$0.01	6.26	6.26	7th Power Plan

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Street Lighting - WY	Customer - 400W	400W Fixture	fixture	New	749.71	12	\$210.00	100%	at stock turnover	\$0.03	22.33	22.33	7th Power Plan
Street Lighting - WY	Customer - 1000W	1000W Fixture	fixture	New	1,172.91	12	\$760.00	100%	at stock turnover	\$0.08	0.23	0.23	7th Power Plan
Street Lighting - WY	Other	Other	fixture	New	265.94	12	\$29.00	100%	at stock turnover	\$0.01	97.63	97.63	7th Power Plan
Street Lighting - WY	Company - 100W	Smart Dimming Controller	street lights	Existing	81.73	15	\$150.00	0%	40%	\$0.01	205.46	266.86	AEG Research
Street Lighting - WY	Company - 150W	Smart Dimming Controller	street lights	Existing	142.97	15	\$150.00	0%	40%	\$0.01	126.73	156.48	AEG Research
Street Lighting - WY	Company - 250W	Smart Dimming Controller	street lights	Existing	203.55	15	\$150.00	0%	40%	\$0.01	49.92	65.49	AEG Research
Street Lighting - WY	Company - 400W	Smart Dimming Controller	street lights	Existing	292.77	15	\$150.00	0%	40%	\$0.01	43.90	60.49	AEG Research
Street Lighting - WY	Customer - 100W	Smart Dimming Controller	street lights	Existing	81.73	15	\$150.00	0%	40%	\$0.01	0.83	1.07	AEG Research
Street Lighting - WY	Customer - 150W	Smart Dimming Controller	street lights	Existing	88.04	15	\$150.00	0%	40%	\$0.01	65.86	81.32	AEG Research
Street Lighting - WY	Customer - 250W	Smart Dimming Controller	street lights	Existing	203.55	15	\$150.00	0%	40%	\$0.01	6.93	9.09	AEG Research
Street Lighting - WY	Customer - 400W	Smart Dimming Controller	street lights	Existing	198.92	15	\$150.00	0%	40%	\$0.01	20.38	28.08	AEG Research
Street Lighting - WY	Customer - 1000W	Smart Dimming Controller	street lights	Existing	296.07	15	\$150.00	0%	40%	\$0.01	0.20	0.28	AEG Research
Street Lighting - WY	Other	Smart Dimming Controller	street lights	Existing	108.69	15	\$150.00	0%	40%	\$0.01	143.50	177.18	AEG Research
Street Lighting - WY	Company - 100W	Smart Dimming Controller	street lights	New	70.58	15	\$150.00	0%	40%	\$0.01	10.08	11.08	AEG Research
Street Lighting - WY	Company - 150W	Smart Dimming Controller	street lights	New	127.33	15	\$150.00	0%	40%	\$0.01	6.28	6.76	AEG Research
Street Lighting - WY	Company - 250W	Smart Dimming Controller	street lights	New	174.69	15	\$150.00	0%	40%	\$0.01	2.44	2.70	AEG Research
Street Lighting - WY	Company - 400W	Smart Dimming Controller	street lights	New	243.46	15	\$150.00	0%	40%	\$0.01	2.13	2.40	AEG Research
Street Lighting - WY	Customer - 100W	Smart Dimming Controller	street lights	New	70.58	15	\$150.00	0%	40%	\$0.01	0.04	0.04	AEG Research
Street Lighting - WY	Customer - 150W	Smart Dimming Controller	street lights	New	78.41	15	\$150.00	0%	40%	\$0.01	3.26	3.51	AEG Research

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2017-2036)	Cumulative Achievable Tech. Potential in 2036 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Street Lighting - WY	Customer - 250W	Smart Dimming Controller	street lights	New	174.69	15	\$150.00	0%	40%	\$0.01	0.34	0.37	AEG Research
Street Lighting - WY	Customer - 400W	Smart Dimming Controller	street lights	New	165.41	15	\$150.00	0%	40%	\$0.01	0.99	1.11	AEG Research
Street Lighting - WY	Customer - 1000W	Smart Dimming Controller	street lights	New	243.65	15	\$150.00	0%	40%	\$0.01	0.01	0.01	AEG Research
Street Lighting - WY	Other	Smart Dimming Controller	street lights	New	96.80	15	\$150.00	0%	40%	\$0.01	7.11	7.66	AEG Research

ABOUT APPLIED ENERGY GROUP (AEG)

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The AEG team has decades of combined experience in the utility DSM industry. We provide expertise, insight and analysis to support a broad range of utility DSM activities, including: potential assessments; end-use forecasts; integrated resource planning; EE, DR, DG, and smart grid pilot and program design and administration; load research; technology assessments and demonstrations; project reviews; program evaluations; and regulatory support.

Our consulting engagements are managed and delivered by a seasoned, interdisciplinary team comprised of analysts, engineers, economists, business planners, project managers, market researchers, load research professionals, and statisticians. Clients view AEG's experts as trusted advisors, and we work together collaboratively to make any DSM initiative a success.

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